

# Environment: *Value to Business*



**GEMI**

BUSINESS HELPING BUSINESS ACHIEVE GLOBAL  
ENVIRONMENTAL, HEALTH AND SAFETY EXCELLENCE

# environment:

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The Global Environmental Management Initiative (GEMI) is a non-profit organization of leading companies dedicated to fostering environmental, health, and safety excellence worldwide. Through the collaborative efforts of its members, GEMI also promotes a worldwide business ethic for environmental, health, and safety management and sustainable development through example and leadership.

The guidance included in this primer is based on the professional judgment of the individual collaborators listed in the acknowledgments. The ideas in the primer are those of the individual collaborators and not necessarily their organizations. Neither GEMI nor its consultants are responsible for any form of damage that may result from the application of the guidance contained in this primer.

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# value to business

GLOBAL ENVIRONMENTAL MANAGEMENT INITIATIVE

## Acknowledgments

This primer was developed in a truly collaborative process by the Global Environmental Management Initiative's (GEMI) Environment: Value to Business (EVTB) Work Group. Harry Ott (The Coca-Cola Company), Chair of the Work Group, and Ben Jordan (The Coca-Cola Company) directed the project.

The primer was written by Tim Larson and Kristin Larson of the Resource Planning and Management Systems (RPM Systems) Group of ThermoRetec Corporation, with oversight and guidance from Howard Brown (President of RPM Systems) and Cathy Van Dyke. Steve Hellem, Executive Director of GEMI, and Mary Beth Parker, also of GEMI, provided substantial input and support to the project.

Several EVTB committee members were extensively involved in many aspects of the project, from conceptualization and planning to final development of the primer. Jim Thomas (Novartis Corporation) played a significant role in developing the primer and organizing the final primer review meeting at Yale University.

Other major EVTB Work Group contributors include:

Lisa Baggett, Georgia-Pacific  
Tanya Blalock, Southern Company  
Stan Christian, Motorola  
Mitch Griggs, Duke Energy  
Carolyn Kennedy, Georgia Power  
Dave Mayer, Georgia-Pacific  
Vivian Pai, Johnson & Johnson  
Scott Smith, Coors Brewing Company  
Darwin Wika, DuPont

The project also received generous support and input from other GEMI member company representatives, including:

Clinton Allen, Bristol-Myers Squibb  
Carol Cala, Eastman Kodak Corporation  
Stephen Evanoff, Lockheed Martin Corporation  
Chuck Griffin, Southern Company  
John Hayworth, Browning Ferris Industries  
Kevin Henke, Koch Industries

Joseph Holtshouser, Goodyear Tire & Rubber Company  
Steve Jones, Alabama Power  
Rob Minter, Southern Company  
George Nagle, Bristol-Myers Squibb  
Bill Rankin, Olin Corporation  
Jerry Schinaman, Bristol-Myers Squibb  
Bob Sherman, Halliburton Company  
Bill Sugar, Anheuser-Busch Companies  
Robin Tollett, Procter & Gamble

### **ADDITIONAL THANKS TO:**

RPM Systems staff who contributed to the research, writing and editing of the primer, including:

David Cross, Brett Evans, Sarah Friedman, Prescott Gaylord, Paula Grimm, Michelle Hirsch, Dan Kops, Mark Loeffler, Rebecca Quarno, Todd Rogow, Megan Shane, and Melissa Spear, among others.

Graphic design: Heather Corcoran

The Industrial Environmental Management Program of the Yale University School of Forestry and Environmental Studies for hosting the final meeting to review the primer, the 'Dialogue on Measuring Environmental Value to Business.' Special thanks to the following Yale faculty members for their thoughtful participation: Marian Chertow, Bradford Gentry, Thomas Graedel, and Reid Lifset.

The following individuals who reviewed and

commented on the draft EVTB primer:

Cindy Angelelli (Policy & Strategy Division, Duke Energy), Bob Brady (Fund Manager, Salomon Smith Barney), Linda Descano (V.P. Environmental Affairs, Salomon Smith Barney), David Ratcliffe (CFO, Georgia Power), and John Richards (Finance Division, The Coca-Cola Company).

The following non-GEMI member companies who provided case study information for the primer: ARCO, Baxter International, Duracell, Rhône-Poulenc.

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## Preface

November 1998

Greetings,


Corporate environmental professionals from companies around the world are adding value to their corporations' bottom lines in ways that could not have been imagined a few years ago. More and more companies are discovering that proactive environmental programs make significant contributions to profitability and competitiveness. In addition to reducing risk and avoiding costs from regulatory compliance programs, benefits are flowing from environmental initiatives that spur process innovation, increase worker productivity and morale, enhance brand image, streamline time-to-market, improve relations with regulators and local communities, and open new market opportunities. Professional environmental managers are key contributors to a company's overall strategic business success.

Environmental professionals in today's companies share a unique vantage point. They address challenges that cut across all aspects of the business, from the plant floor to the board room. They are in an excellent position to identify problems and opportunities, and to broker information and innovative solutions. Yet in order to add real value, environmental professionals must be 'plugged into' main-line business. It is important for business managers to understand the ways environmental activities can add business value. *Environment: Value to Business* is about focusing on this need for integration and communication—and ways to achieve it.

While this primer provides a valuable tool kit for corporate environmental organizations and professionals, the ideas, examples, and case studies found in these pages will be of interest to a wider audience. The Global Environmental Management Initiative (GEMI) hopes this primer will strengthen the growing discussion in business, financial, and environmental circles about the value of corporate environmental activities and the links between environmental and business performance. We look forward, in future GEMI activities, to expanding our efforts in facilitating dialogue and building broader understanding among business leaders and managers, members of the financial community, and corporate environmental professionals.

We hope you will enjoy and benefit from these creative and leading-edge activities.

Sincerely,



Harry J. Ott

Chair

Environment: Value to Business Work Group  
Global Environmental Management Initiative

Director

Global Environmental Assurance  
The Coca-Cola Company

# Introduction

*“The best possible environment for our success is the best possible environment. Implementation of The Coca-Cola Environmental Management System throughout our organization will help us protect and grow our business through continued environmental leadership.”*

*M. Douglas Ivester  
Chairman, Board of Directors & CEO,  
The Coca-Cola Company*

**The business context** in which corporate environmental professionals must work is rapidly changing. Competitive pressures in the global economy are pushing companies to ensure that all endeavors contribute to the creation and protection of shareholder value. Corporate environmental professionals need to rethink their roles, responsibilities, and approaches in order to respond to these larger business trends.

**FOCUS ON BUSINESS INTEGRATION.** Companies are reorienting traditional business strategies to focus on cross-functional business processes and are taking advantage of opportunities to coordinate the work of different operating units and departments.

**CUSTOMER-ORIENTATION.** Corporations are encouraging all business functions, not just sales and marketing, to adopt a customer-focused approach to delivering products and services.

**EMERGENCE OF THE TRIPLE BOTTOM LINE.**<sup>1</sup> Increasingly, investors and consumers are holding corporations

<sup>1</sup> John Elkington, *Cannibals With Forks: The Triple Bottom Line of 21st Century Business.* Oxford, UK: Capstone Publishing, 1997.

accountable for their impacts on the environment and society, in addition to financial performance, forcing companies to anticipate and rapidly respond to social and environmental issues.

In this shifting business context, the role of the environmental professional is evolving. Environmental staff must get ‘plugged into’ business—undertaking

activities that create value for the business and communicating this value to multiple internal and external stakeholders. Increasingly, corporate environmental professionals are discovering that the value of their services expands as the scope of their activities extends beyond remediation and compliance activities. By focusing on resource management or ‘eco-efficiency,’ environmental activities can produce operational and strategic value by reducing costs and enhancing revenues. Less resources, less waste, less risk. More sales, more revenues.

Environmental activities can reduce operating costs by:

- > improving resource utilization rates and process efficiency;
- > reducing waste; and
- > using risk management to avoid fines and clean-up costs, reduce legal costs and judgments, and decrease insurance and overhead costs.

An environmental program which is well-integrated into core business processes can also influence profitability in more subtle (and sometimes less tangible) ways by:

- > streamlining product development cycles and reducing time to market;
- > improving relationships with regulators, suppliers, and consumers;
- > safeguarding corporate image and brand names;

# 1

## PLAN

- > Know the business context.
- > Inventory potential environmental impacts.
- > Identify value-creating opportunities.
- > Prioritize activities.

# 4

## ADVANCE

Communicate value and get feedback from:

- > Internal stakeholders (upper management and operations).
- > External stakeholders (customers, suppliers, shareholders, investors).

# 3

## CHECK

- > Gather actual cost and benefit information.
- > Analyze the value created by environmental activities.

THE PLAN-DO-CHECK-ADVANCE CYCLE





# 2

## DO

- > Build the business case.
- > Mobilize resources.
- > Build momentum through implementation.

- > enhancing employee productivity and morale; and
- > identifying new product and service opportunities.

Companies are only beginning to discover the ways in which corporate environmental initiatives can add strategic value to business.

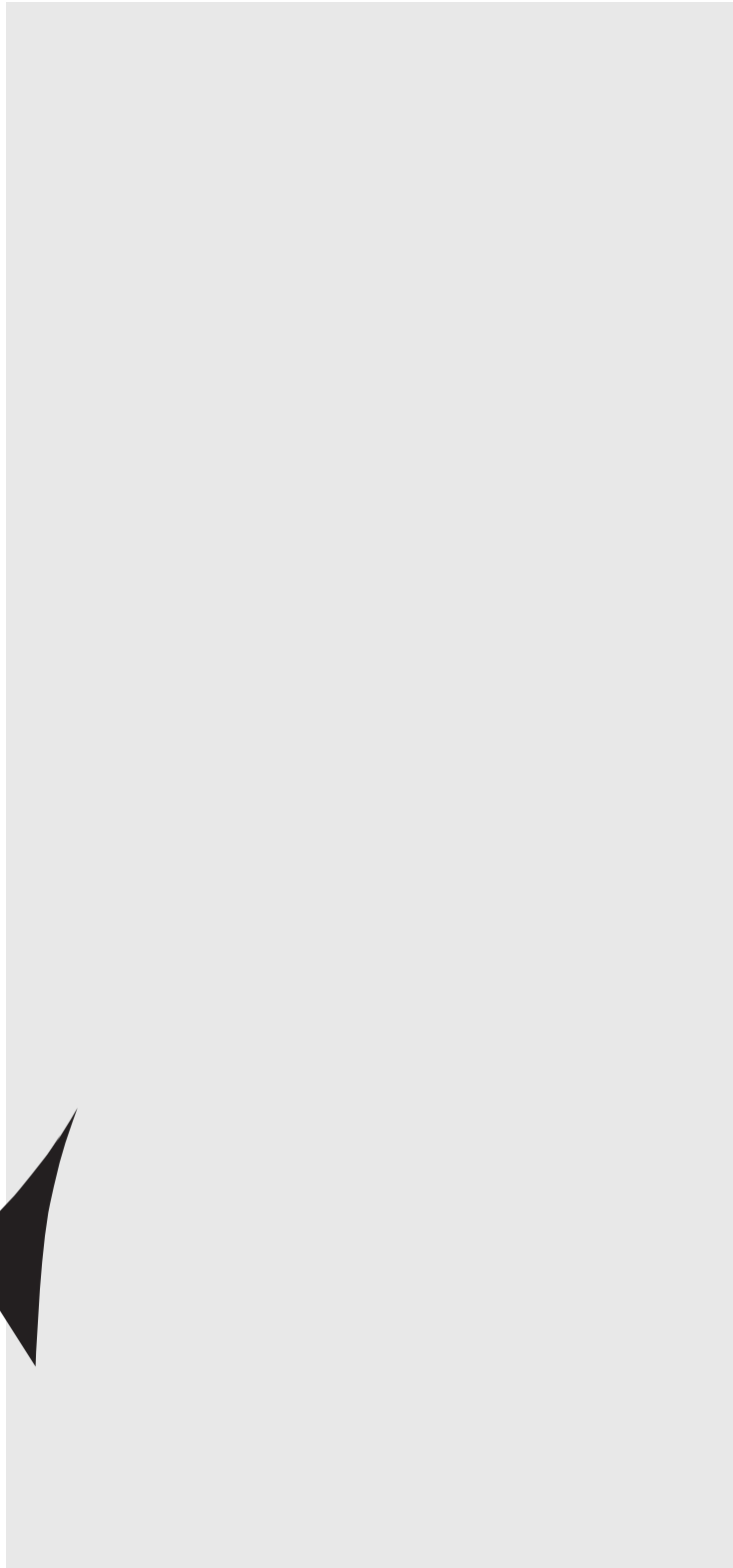
While *Environment: Value to Business* explores tools and techniques that corporate environmental professionals can use to plan, create, measure, and communicate the business value of environmental activities, we believe that these ideas will be of interest to a much broader audience. In particular, business leaders and members of the financial community will find compelling examples of ways corporate environmental activities can contribute to profitability and competitiveness. In addition, the concepts addressed in this primer are directly relevant to corporate health and safety activities.

*Environment: Value to Business* is divided into four chapters—one for each stage of the Plan-Do-Check-Advance (PDCA) cycle of environmental management.<sup>2</sup> Total Quality Environmental Management (TQEM), ISO 14001, and other environmental management system

<sup>2</sup> For the purposes of this primer, the term 'Advance' is more appropriate than the PDCA term 'Act.'

approaches are all founded in this iterative process focused on continuous learning and improvement—making PDCA a useful framework for presenting the *Environment: Value to Business* (EVTB) concepts and tools. Ideally, efforts to plan, create, measure, and communicate the value of environmental activities will be seamlessly integrated into corporate environmental management systems.

It is understood that readers may be at different points in the PDCA process. *Environment: Value to Business* is designed to facilitate quick navigation; and each chapter provides useful tips and tools, key questions, and case studies. Of course, not all EVTB concepts and tools fit neatly into the 'bins' of the PDCA framework. We have endeavored to denote some of these important links between chapters—where tools presented in one chapter can also be used in another stage of the PDCA process—using the (◀) symbol.



# 1

## Plan to Add Value

### **The corporate environmental professional**

faces the same challenge confronting other business leaders in a changing world—how to allocate or secure limited resources (money, staff, senior management attention) to maximize the value of activities and projects. When done well, planning can enable corporate environmental managers to identify, assess, and prioritize opportunities in the organization and devise creative strategies for leveraging resources—not just the environmental department’s resources, but those of other departments as well. This chapter describes the essential elements of a successful planning effort and presents tools and tips for maximizing the benefits of planning.

The key to good planning is to transform it from an academic exercise that results in just another report on the shelf to a vibrant process of getting plugged into the business. Planning requires environmental professionals to step out into the business, gain an understanding of the broader organization, listen to other departments’ needs and goals, and identify strategic opportunities for solving company challenges. It involves reaching beyond traditional role boundaries to become strategists, entrepreneurs, sales representatives, and educators. In this way, effective planning can both reveal value-creating opportunities and provide critical insight into how best to communicate with key individuals and groups.

There are four main elements to successful planning: (1) knowing your business; (2) taking inventory of potential environmental impacts; (3) identifying value-creating opportunities; and (4) prioritizing activities.

## Know Your Business

Assess the business context of environmental activities. All too often, corporate environmental professionals are unaware of the specific goals, priorities, and needs of other departments and staff within the company. Being able to offer value-adding solutions requires three things. First, identify the current and potential customers of environmental services. Second, know what business challenges those customers are trying to solve. Third, understand your company's long range business plans. While environmental professionals cannot be expected to be experts in every aspect of a company, failure to do homework on the business context may leave giant value-creating opportunities on the table and environmental issues on the sidelines.

## Inventory Potential Environmental Impacts

Make sure that you know all of the ways your company impacts the environment. As illustrated in the resources throughput model (see pages 12–13), environmental impacts typically arise from (1) the use of input resources; (2) the generation of wastes, emissions, and discharges; and (3) the existence, use or disposal of products.

This task is akin to the identification of 'environmental aspects' in the ISO 14001 environmental management system standard. To conduct an inventory of environmental impacts, first identify the core business processes and functions in your organization, including the production and operational processes. Then, map the processes that you identify (see the Process Mapping section below for suggestions). Process mapping not only improves understanding of business activities, but also helps to reveal areas where these activities can impact the environment and where environmental staff can intervene to provide value-adding assistance. For each process and/or functional area, brainstorm the current and potential environmental impacts.



## Key Questions

### KNOW YOUR BUSINESS

What are the business trends affecting your company and industry?

Who are the customers (both internal and external) of environmental services?

Who are the customers of your company's products & services?

What are the business goals for your business this year?

What are the priorities of senior management?

What are the priorities and initiatives of other departments and business units?



## Tips

### KNOW YOUR BUSINESS

**Review internal literature.** Gather and review reports and materials to learn about important issues affecting your company and industry. In addition to materials such as corporate newsletters and annual reports, most business units and departments produce periodic reports, strategic plans, annual business goals, and budgets. Watch for issues or key words that are important to management.

**Get invited to meetings.** Look at every interaction as an opportunity to listen to the needs of others. Use opportunities to meet with stakeholders to learn about their business goals and needs (meetings, interviews, surveys, informal interactions).

**Benchmark.** Keep abreast of environmental initiatives and business trends affecting companies in your industry by participating in industry associations and other business-environment initiatives (e.g. GEMI).



## Key Questions

### INVENTORY OF IMPACTS

What are the core business and operational processes of your company (e.g., new product development, purchasing, component manufacturing)?

What are the existing and potential impacts of each department, process, and product on the environment?

What environmental impacts of the company's activities are regulated?

Which environmental impacts pose the greatest risk to the company's profits, growth, and public image?

How significant are these risks and impacts?



## Tips

### INVENTORY OF IMPACTS

*Don't get bogged down in the details.* The goal is to identify areas of current and potential environmental impact, and to have a basic understanding of your business processes, not to develop complex engineering diagrams (although these may be informative later).

*Think beyond regulatory impacts.* By only looking at environmental impacts that are covered under regulations, you will likely miss value-creating opportunities. For example, high water use may not pose adverse regulatory impacts, but it can unnecessarily increase the size of the treatment facility needed to process wastewater. Resource conservation means avoided raw materials and costs as well as avoided waste management costs and risks. These activities can both reduce external environmental impacts and directly reduce a company's operating costs.

*Get out and talk with people.* The environmental manager does not need to be an expert on all processes in the company, but should talk with those who are. Environmental audits and training sessions provide a good opportunity to map processes and identify environmental impacts. Ask employees about the processes in which they are involved. Engage them in helping you to create, refine and verify process maps. Taking an interest in others' work builds political capital for EHS by providing insight on how environmental initiatives can help them succeed with their business goals.

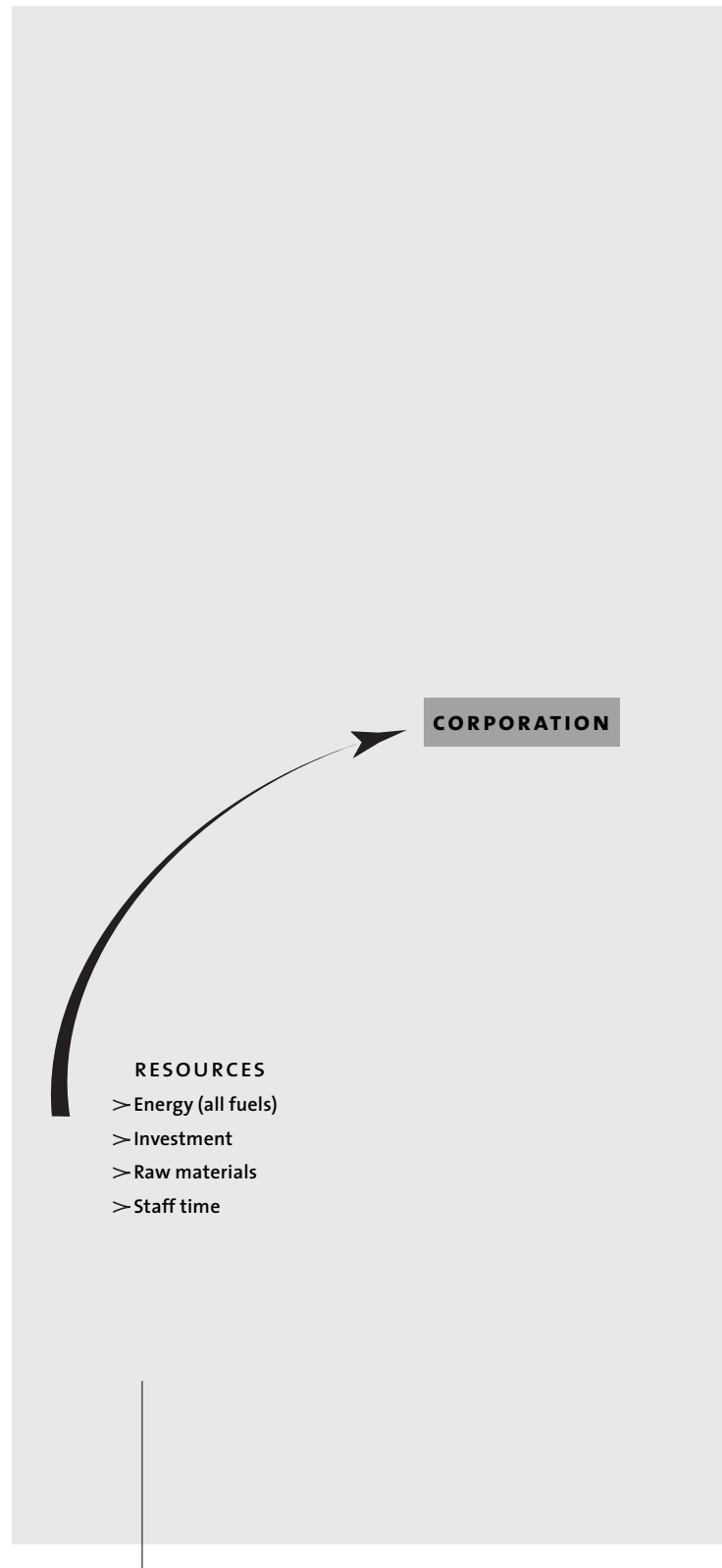
### *Steps for Effective Process Mapping*

Process mapping is an excellent tool for inventorying environmental aspects and impacts. A process map is a schematic depiction of business processes which immerses the corporate environmental professional in the world and jargon of operations and reveals opportunities for intervention. Both the process map itself and the effort of creating one can aid in the identification of value-creating opportunities for the environmental function: the areas of greatest risk, environmental impacts, and superfluous or inefficient steps that can be eliminated or modified. Creating the maps can also lead to questioning the rationale behind certain process elements, and even entire processes.

**OBSERVE PROCEDURES AND INTERVIEW OPERATORS.** This includes visiting the plant floor as well as support and technical departments. At a minimum, it necessitates talking with or involving those close to the process activities. Determine the major steps of the process. List the resources that flow into each step (e.g., materials, energy, water) and the impacts that result (e.g., wastes, fugitive emissions, vehicle miles traveled).

**DRAFT INITIAL PROCESS MAP.** A draft process map provides a useful starting point—a visual guess to spark discussion. Do not try to make it perfect. Get flip chart paper and markers, and draw boxes for the major process steps. Use arrows and lists to indicate resource flows, waste streams, and environmental impacts. Use multi-colored Post-It Notes® to flag key issues, inefficiencies, or problems that you discover while mapping.

**REVIEW AND REVISE.** Staff from other departments are often excited to discuss their work and will not hesitate to correct your maps. Ask them to help identify areas of environmental impact and process inefficiency. Engaging line operators, supervisors, and managers in the process gets them thinking about the impact of their actions on the environment—a key element of an effective environmental management system.



#### **RESOURCES THROUGHPUT MODEL**

The goal of 'eco-efficiency' is to maximize the amount and quality of goods or services produced, while minimizing the environmental impacts of resource use and waste generation. Typically this translates into maximizing profits by minimizing the amount of resources used and the amount of wastes generated. The goal is 'doing more with less.'

## Identify Value-Creating Opportunities

Once environmental staff are plugged into the business, they can get the information needed to identify value-creating opportunities at many levels of company operations. Smart compliance strategies have additional benefits for other departments and business units. Environmental initiatives taken beyond the basic requirements of compliance may both reduce costs and enhance revenues. Search for the places where value can be created.

### *Value in Compliance*

Certain environmental performance standards and activities are required by company policies and government regulations. While these activities are typically viewed by management as a cost of doing business, they in fact provide fundamental value to business.

A well designed compliance program can:

**PROVIDE A LICENSE TO OPERATE.** National, state, and local governments have imposed environmental, health, and safety requirements on corporations that do business within their jurisdictions. Compliance with these requirements usually adds real value. Safeguarding the health and safety of workers, communities, and the environment is essential to securing the public trust to continue operations, expand, and innovate.

**AVOID PENALTIES.** Failure to assure compliance can bring significant costs to business—fines, permit denials, plant shut downs, legal fees—which directly impact the bottom line. While it is impossible to precisely document avoided costs, numerous environmental managers have found estimation to be useful.

**ADD FLEXIBILITY.** A record of strong and effective compliance can earn flexibility with regulators which enables operations to make needed changes more quickly.

### *Value in Operations*

At the operations level, the goal should be finding new ways to do more with less. The key is focusing on resources. By reducing total resource inputs, hazardous inputs, or undesirable by-products, it is possible to lower the costs of production and compliance as well as waste disposal and management costs. Thus, environmental initiatives in operations can:

#### PRODUCTS & SERVICES

- > Revenues
- > Delivered product

#### WASTE

- > Hazardous waste
- > Non-hazardous waste

**IMPROVE THE EFFICIENCY OF RESOURCE USE.** Yield and resource utilization rates can be improved by reducing the amount of resources used per unit of product produced. This approach, often called process optimization, involves changing processes to minimize resource requirements.

**MINIMIZE WASTES.** Wastes, emissions, and discharges bring not only disposal costs, but also regulatory reporting costs and the potential for spills and unacceptable health and safety exposures. Reducing the amount of off-quality product has triple the impact: saving inputs, reducing wastes, and producing more product to sell.

**REDUCE THE COSTS OF MANAGING HAZARDS.** Eliminating the use of hazardous materials in production processes reduces the costs of engineering and control measures. If you don't use it, no one will spill it or be exposed to it.

**SPUR PROCESS INNOVATION AND REDUCE MAINTENANCE COSTS.** Pollution prevention activities can reveal other opportunities for streamlining, and even eliminating, process elements and maintenance requirements. Many corporate environmental professionals report that creative pollution prevention and waste minimization programs often result in significant process improvements because they permit a fresh look at practices and procedures.

**BOOST PRODUCTIVITY AND MORALE.** Improving working conditions can increase productivity. For example, addressing indoor air quality and noise issues has

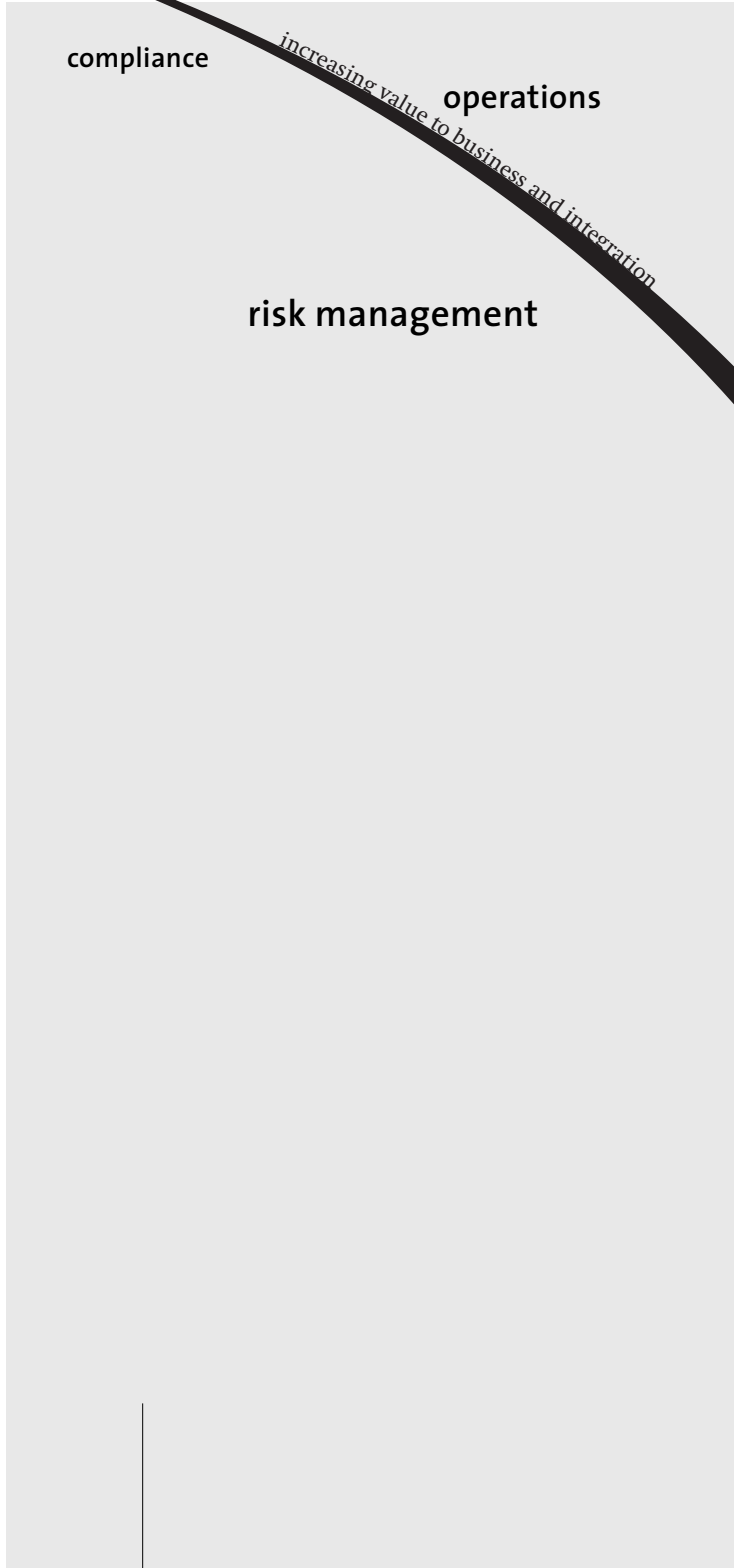
<sup>3</sup> Joseph J. Romm, *Lean and Clean Management: How to Boost Profits and Productivity by Reducing Pollution*. New York: Kodansha International, 1994.

been demonstrated to reduce absenteeism and improve staff morale. Similarly, in some cases, energy-efficient lighting upgrades have boosted worker productivity by 5 to 7%.<sup>3</sup>

### *Value in Risk Management*

Reducing environmental risks can save significant costs. Environmental risk management strategies can:

**REDUCE THE COSTS OF EMERGENCY RESPONSE.** Proactive environmental management can avoid or minimize the short- and long-term costs of accidents, spills, and releases. Preventive measures and effective plans can



Getting to the bottom line

**INCREASING VALUE-CREATING OPPORTUNITIES**





reduce response and clean-up costs, while minimizing costs arising from regulatory penalties, litigation fees, and legal settlements.

**REDUCE REMEDIATION COSTS.** Improving the management of remediation projects can reduce ongoing operational costs and help close out remediation projects ahead of schedule.

**REDUCE PRODUCT LIABILITY COSTS.** Incorporating environmental, health, and safety concepts into product design from the outset can reduce the potential for harmful environmental, health, and safety impacts resulting from product use, misuse, or disposal.

**REDUCE INSURANCE PREMIUMS.** Limiting environmental risk exposure for employees, contractors, and customers can directly lower corporate insurance costs. More and more insurance companies are considering these issues in pricing coverage.

### *Value in Capital Investments*

Companies spend millions of dollars servicing the long-term life-cycle costs of capital investment and design decisions. The environmental implications of capital investments such as the purchase of new sites, facility construction, the start-up or redesign of manufacturing lines, and new products can have significant business consequences. Environmental managers can add value by providing critical information early in capital budgeting and decision processes. Since environmental professionals often are not asked for advice early in the process, it is important to study the acquisition and change processes and then proactively insert key information. Through involvement in these decision processes, it is possible to:

**REDUCE THE UNCERTAINTY OF CORPORATE TRANSACTIONS.** Due diligence activities can identify potential environmental liabilities associated with property acquisitions and divestitures, directly affecting prices and long-term facility operations and development costs. Brownfield redevelopment can bring strategic business and tax advantages. Often corporate environmental professionals must educate peers and managers in other departments on how to take advantage of these opportunities.

PRODUCT LIFE CYCLE  
REVIEWS:  
**BRISTOL-MYERS SQUIBB  
COMPANY**



In 1993, Bristol-Myers Squibb initiated a program to improve the environmental performance of their products throughout the product life cycle — from the research and development phase, through manufacturing, packaging, sales, distribution and consumer use to final disposition. The Product Life Cycle (PLC) program has produced significant cost savings, while at the same time has spread a general awareness of environmental issues. EHS staff train teams of 8-10 representatives of different functions within the business. The teams then review a group of related products to identify opportunities to create value. Each review costs approximately \$25,000 and generates an average of \$200,000 in savings. One product improvement, debossing rather than printing capsules, has generated an estimated annual savings of \$100,000. By eliminating the solvent-based ink required for printing, Bristol-Myers Squibb reduced chemical waste and minimized workers' exposure to toxics. Other innovations include: the removal of cotton in bottles containing over-the-counter analgesics, the creation of the first alcohol-free hair spray, and the creation of reusable and collapsible plywood pallet boxes.

SUPPLIER  
DEVELOPMENT  
PROGRAM:  
**DURACELL , INC**

At Duracell, working closely with suppliers is a central part of the company's supplier development program. Duracell meets regularly with its suppliers as a group to share best practices and improve performance. For several years, environmental programs have been included in the overall rating of suppliers. When Duracell's energy management initiative began to reap major cost savings as well as reduce the company's contribution to greenhouse gas emissions, Duracell decided to incorporate the initiative into its global supplier development program. Duracell held a conference of major suppliers to share its approach and challenged the group to participate in a partnership program where each company agreed to set energy efficiency goals, initiate programs to achieve those goals and share best practices within the group. Most suppliers committed to the program. Awards will be given to the best performers. The benefits are better supplier relations, new ideas for reducing costs at Duracell, and assistance to suppliers in controlling costs.

ARCO successfully negotiated a revised hazardous waste permit. The permit allowed the refinery to build a needed oil tank on property previously used as a hazardous waste land treatment unit. Tank permitting and construction proceeded on a fast track basis. The process was enhanced by the company's long-term environmental performance and their excellent working relationship with the regulators. This partnership allowed the refinery to save over \$1,000,000 in long-term monitoring costs. In addition, they recovered previously unavailable but valuable refinery real estate. This project was a success because it brought previously unused property back into constructive use and it saved money on future long-term monitoring programs.

REUSE OF A  
HAZARDOUS  
WASTE DISPOSAL  
FACILITY:  
**ARCO**

In 1996, Koch Industries proposed to build a 210-mile gas liquids pipeline from Pascagoula, Mississippi, and Bayou La Batre, Alabama, to a Koch Hydrocarbon Southeast plant in Belle Rose, Louisiana. Koch mobilized its public affairs professionals to develop a communications/government affairs strategy addressing complex issues of routing, competition, right-of-way acquisition, permitting, and construction. The pipeline needed to cross Lake Pontchartrain which has been the center of extensive grass-roots efforts to restore its environmental integrity. Koch's market opportunity depended on bringing the pipeline into operation quickly, without long delays that could result from public opposition. After preliminary analysis, but before submitting permit applications, Koch invited a wide range of interested parties to discuss their concerns.

DECREASED TIME-  
TO-MARKET FOR  
PIPELINE PROJECT:  
**KOCH INDUSTRIES  
(KOCH PIPELINE  
SOUTHEAST, INC.)**

Organizations, including the Lake Pontchartrain Basin Foundation, the Coalition to Restore Coastal Louisiana, the Southern Louisiana League of Women Voters, the Sierra Club, local fishing organizations, elected officials, and scientists studying the region's lakes and wetlands all contributed to the project. Based on the recommendations provided by these external stakeholders, Koch made routing and other changes and specified, in writing, the environmentally sensitive construction methods that would be used. The pipeline route now avoids eagle nests, gopher tortoise and sandhill crane habitats, and a sensitive salt marsh area. Koch's permitting process began at the same time as other companies were starting competing pipeline projects. Initiating open communication helped Koch earn the trust of these groups and made Koch the community's choice to proceed with this venture. By seeking external participation, Koch's public affairs team helped to secure 2,500 right-of-way signatures and 64 permits in 18 months, less than the 24 to 30 months typical for large projects. Construction started in August 1998.

**REDUCE TIME TO MARKET.** Getting involved early to secure permits and address regulatory requirements can remove obstacles to new product commercialization and production expansion. Environmental managers can also play a key role in overcoming community opposition to new facility construction or expansion by communicating with local residents and addressing their concerns.

**ENCOURAGE SUSTAINABLE DESIGN IN CONSTRUCTION.** Companies can lower life-time operating expenses and environmental impacts of new facilities by incorporating environmental considerations into the design from the outset. Sustainable design techniques such as recycled and non-toxic building materials, energy efficient lighting and climate control systems, and native plantings can reduce utility and maintenance costs, improve working conditions, and productivity. It can also benefit the company's public image.

**AFFECT EQUIPMENT ACQUISITION DECISIONS.** Working with purchasing departments, environmental managers can add energy efficiency and pollution prevention criteria to the purchasing decisions for office equipment, machinery, and vehicle fleets. These considerations can reduce life-cycle operating costs and improve a company's image while protecting the environment.

### *Value in Market Growth*

Environmental activities can enhance the marketability of products and services. Consumer demands for environmentally-friendly products and environmentally-responsible corporations are on the rise.<sup>4</sup> These market

<sup>4</sup>Jacquelyn A. Ottman, *Green Marketing: Opportunity for Innovation*, 2nd edition. Chicago: NTC, 1998. pressures are not only felt by consumer products companies. High environmental performance standards are increasingly expected of vendors and suppliers as well. Thus, environmental initiatives can:

**HELP SECURE BENEFICIAL SUPPLIER RELATIONSHIPS.** Corporate environmental professionals can work with supplier companies to save costs and reduce risk, and to win supply contracts with other companies by implementing proactive environmental management systems.

**ENHANCE THE ENVIRONMENTAL ATTRIBUTES OF PRODUCTS.** Companies can appeal to environmentally-conscious consumers by using recycled and recyclable materials, eliminating hazardous product constituents, and reducing the impacts of products and services.

**ENHANCE THE CORPORATE IMAGE AND BRAND NAMES.** A solid environmental record can enhance public perception of a company and improve the marketability of its products and services. Partnerships between environment and public affairs departments can result in creative initiatives that demonstrate the company's commitment to both local environmental quality and global environmental stewardship. Whether through sponsorship of a local environmental education center or involvement in activities such as GEMI, external initiatives enable employees to engage with others on environmental challenges and show that these issues are important to company management.

### *Value in Strategic Direction*

Corporate environmental professionals often possess valuable information and insight which, when presented well and credibly, can influence senior management's strategic decision-making. A growing number of corporate executives are embracing environmental thinking and initiatives as part of overall business strategy. There are a variety of ways environmental professionals can influence this awareness and affect their company's strategic directions:

**INFLUENCE PRODUCT MIX.** Documenting the true environmental costs and risks of certain products can motivate business leaders to shift resources to more profitable and environmentally-benign activities. Environmental drivers such as consumer preferences and regulatory incentives can prompt companies to enter new business areas through strategic acquisitions.

**MONITOR AND MANAGE STRATEGIC ISSUES.** Regulatory initiatives, and public attitudes and public concerns can alter a corporation's image and long-term financial performance. Environmental managers can monitor regional, national, and global trends, alert senior management when corporate interests might be affected, and suggest useful responses. Environmental professionals can engage in 'scenario planning' to help the



## Key Questions

### PRIORITIZE ACTIVITIES

Which activities offer the greatest potential benefits by strengthening compliance and adding value to business?

What activities should be continued and discontinued given limited staff and budget resources?

Where are the 'low hanging fruit' that can be used to demonstrate progress to management and stakeholders and to build momentum? Which are worth picking?

How should resources be allocated among projects?

What is feasible to accomplish in a given time frame?



## Tips

### PRIORITIZE ACTIVITIES

**Involve key stakeholders.** Engaging important customers of environmental services in the prioritization process, in addition to environmental staff, can ensure you address their needs. A well-facilitated planning and prioritization session can also promote broad ownership and commitment to selected initiatives.

**Prioritization by voting.** Numerous analytical techniques exist for prioritizing potential activities, but do not let analysis lead to paralysis. Simple voting techniques (based on individual judgments) can quickly sort out the most promising activities to undertake.

**Dare to start small.** Especially in complex political environments, it may be important to achieve several small successes to build credibility and political capital in preparation for larger, more difficult projects later.

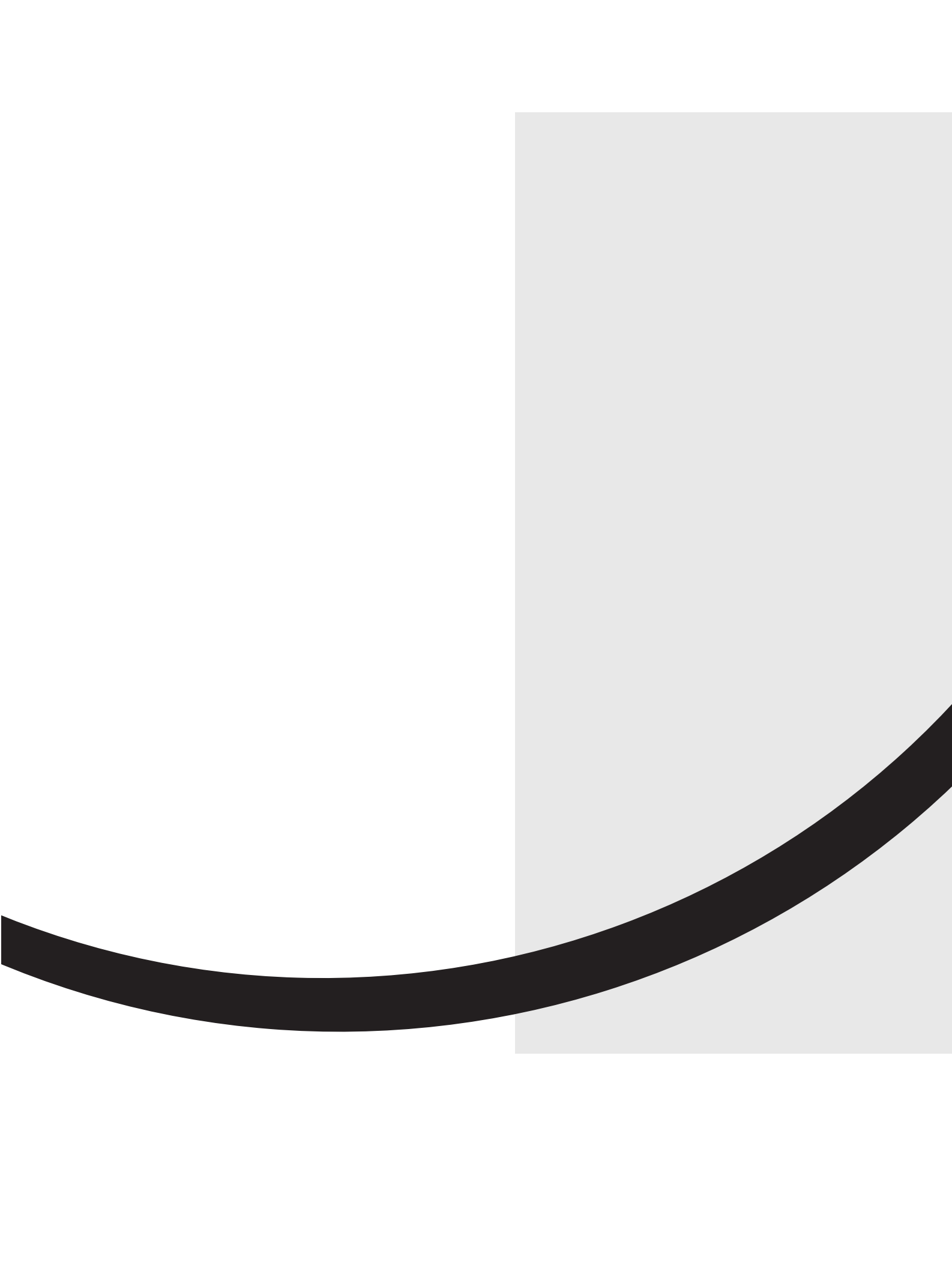
business with long-term strategic planning for market and product change and development. Trends in technology, global resources, and environmental issues can present problems or open up opportunities. Environmental professionals can play a key role in helping their companies prepare for changing business realities and seize emerging business opportunities.

**REDEFINE AND EXPAND MARKETS.** As markets and industries rapidly change, corporate environmental attributes and performance can help secure new markets and protect existing ones. Strategic decisions to invest in product redesign to enhance recyclability, for example, can win market share where new regulations, such as product take-back, penalize competitors. In this way, environmental initiatives can spur the innovation that builds new markets.

**MODIFY THE BUSINESS MISSION.** There may be strategic advantage in modifying the core mission of the company to include environmental themes. Corporate focus on themes of sustainability and innovation 'for achieving a better world' can demonstrate commitment to long-term value creation.

## Prioritize Activities

No corporate environmental professional has the time, staff resources, or funds to pursue all potentially value-creating opportunities in the organization. To make effective use of limited resources, environmental managers must focus their efforts and prioritize environmental activities. Decision-making criteria typically include: (1) the importance of the project to business goals; (2) the project scale in terms of cost and resources required; and (3) the degree of difficulty (e.g., complexity of the problem, the amount of political capital required). This does not mean that only the easiest and cheapest projects should be done first. Rather, this process should result in a plan that balances the potential benefits with political and economic resources needed.





# 2

## Do What Adds Value

### **The value of environmental activities**

can be realized through effective implementation of projects, programs, or systems. Yet, in doing what adds value, there are several challenges to overcome: (1) getting upper management approval and support; (2) mobilizing the necessary resources; and (3) building momentum once the project has been kicked off.

### **Build the Business Case**

It seems that every article on environmental management instructs environmental staff to secure senior management commitment and support for environmental programs. Yet getting that support is not always easy, nor is it always necessary. Most often, the need for senior management approval is driven by a need to secure financial and staff resources. If you can leverage existing support and resources to get things done, you may not need special approval from senior management at the outset. Where this is possible, management support can be nurtured over time.

Senior business managers have limited time and attention to divide among multiple, competing issues. When approval is needed prior to introducing a new program or project, you need to target your pitch and

presentation specifically to your management audience. Upper management is often most interested in the financial implications of a proposal, so be prepared to provide an estimate of the project's costs and benefits to the business. While providing financial data may seem intimidating early in the process, it is important not to get stuck in extensive research and analysis. Make a credible 'guesstimate' of the costs and benefits, using terms that are meaningful to senior managers (see Chapters 3 and 4 for tips on measuring and communicating value). Getting approval should not be a test of your financial skills, but rather an opportunity for you to present the case for your program to a key customer.

### Mobilize Resources

Many corporate environmental professionals vastly underestimate the availability of resources to support environmental activities within their corporations. They assume that available resources consist only of the departmental budget and staff who have been specifically assigned environmental job responsibilities. Successful implementation often demands that environmental managers identify potential allies with similar or overlapping interests and use (or piggy back on) other organizational resources.

There are myriad creative examples of environmental professionals mobilizing resources. For example, when environmental managers have integrated environmental criteria into new product development checklists and evaluations, R&D staff take greater responsibility for identifying potential environmental hazards of new products or services. Such efforts can reduce the environmental impacts of design choices, decrease time to market by ensuring permits and controls are in place, and shape perceptions of the environmental departments as valuable providers of technical assistance.

Corporate audit programs can also offer opportunities to mobilize and leverage scarce resources. By promoting facility self-assessments, several corporate environmental departments have shifted their focus to providing training and technical assistance. Cross-training of quality audit staff has leveraged staff from other departments to supplement corporate



### Key Questions

BUILD THE BUSINESS CASE

Who needs to approve the project? What are the steps required to gain approval?

What is the appropriate forum in which to present the project for approval?

How much information and detail should you provide to make your case?



### Tips

BUILD THE BUSINESS CASE

**Benchmark.** Other facilities or departments may have tried similar initiatives. If your company has not, other companies may have. To find out who in the industry has implemented similar programs or projects, read through case studies in trade journals and attend conferences and industry association meetings. Useful case studies can be found in the following environmental journals: *Environmental Quality Management* (John Wiley & Sons), *Pollution Prevention Review* (John Wiley & Sons), *Corporate Environmental Management* (PRI Publishing), *Journal of Industrial Ecology* (MIT Press), and *Tomorrow Magazine*. Use their cost/benefit information as a starting point for your own estimates.

**Be realistic.** Credibility is essential to being taken seriously. Remember that the importance of environmental initiatives will often be judged by senior management in relation to many other corporate initiatives. Do not try to glorify or overstate the benefits of environmental activities. Earn your support by selling only what you believe in and what will help achieve the company's objectives.





## Key Questions

### MOBILIZE RESOURCES

What people, programs, procedures, and tools are available within the environmental, health, and safety department?

What people and programs outside of the environmental, health, and safety department could be used to support and help deliver environmental services?

Who can serve as a champion for the project and represent the key customers in the business units and other departments?

How can the environmental managers and business unit representatives work together to implement the project? What forums could be used to enhance collaboration among the different groups?



## Tips

### MOBILIZE RESOURCES

*Piggyback on other corporate programs.* Within any corporate organization, there are likely to be other departmental initiatives that address similar issues or use tactics similar to the proposed environmental initiative (e.g., quality circles and audits, newsletters and Intranet sites, maintenance programs). Integrating environmental activities and ideas with other more established or accepted programs may increase the success of implementation.

*Build cross-functional teams.* Successful integration of environmental activities into the larger business organization demands cross-functional teams. As Fisher Scientific learned in its pollution prevention initiatives, the most effective approach for waste minimization is 'having a full spectrum multi-disciplinary team analyzing the problems.'<sup>5</sup> Such teams can be task oriented to address a particular problem such as design for environment or energy conservation in a particular facility, or they can be a higher level advisory team to review and provide direction to your overall program.

*Provide incentives for participation.* Potential participants in the project must have reasons to get involved. The best incentive is to help solve a problem that they are working on. Whether the project warrants carrots (e.g., recognition such as public announcements, awards) or sticks (e.g., working with human resources to create a job requirement, penalties for non-involvement), make sure you provide your partners in the business units with adequate justification for working with you. At one company, the environmental team offered free lunches for product design engineers to come and discuss environmental issues.

<sup>5</sup>Romm, Lean and Clean Management, 1994.

audit teams. These approaches allow the environmental department to share responsibility for compliance assurance with facilities, while encouraging facility staff to pursue their own value-creating environmental activities.

## Build Momentum

Many well-designed programs fail when they do not receive adequate or sustained attention from key staff. Start with a bang, but be prepared to back the project or program launch with continued efforts. Plan and sequence implementation tasks so that they display frequent, visible, concrete actions. Once the initial fanfare has worn off, it is critical to keep the initiative moving. If the project or program is allowed to languish and lose momentum, it may be difficult to sustain enthusiasm and effort among all participants.



### Tips

#### BUILD MOMENTUM

*Don't bite off more than you can chew.*

Implement projects on a manageable scale so that everyone involved does not end up overburdened and frustrated. Pilot initiatives can lead to interesting discoveries about how the project will play out over the long term. Consider using pilot initiatives and incorporating the pilot feedback into the planning and implementation of the full project.

*Set reasonable goals and expectations.* People like to feel that they are making progress. If the project proceeds in stages and each stage has well-defined milestones, goals, and expectations, project participants will feel a sense of accomplishment when a phase is successfully completed and will be more motivated to meet the challenges of the next phase. However, this does not mean that the project pace needs to be slow. If a project is too slow or easy, it won't be a challenge. The most successful projects balance the need for challenge with the need for realistic accomplishment.

*Support your champions.* Be supportive of the individuals involved and offer to help. Check in regularly. Do not assume the project will run without you. If others think you have lost interest, they will too.

*Celebrate successes, even the small ones.* When things go well, people often forget to pause and celebrate success. Recognize those who have contributed using awards, prizes, free lunches, or even just a pat on the back.

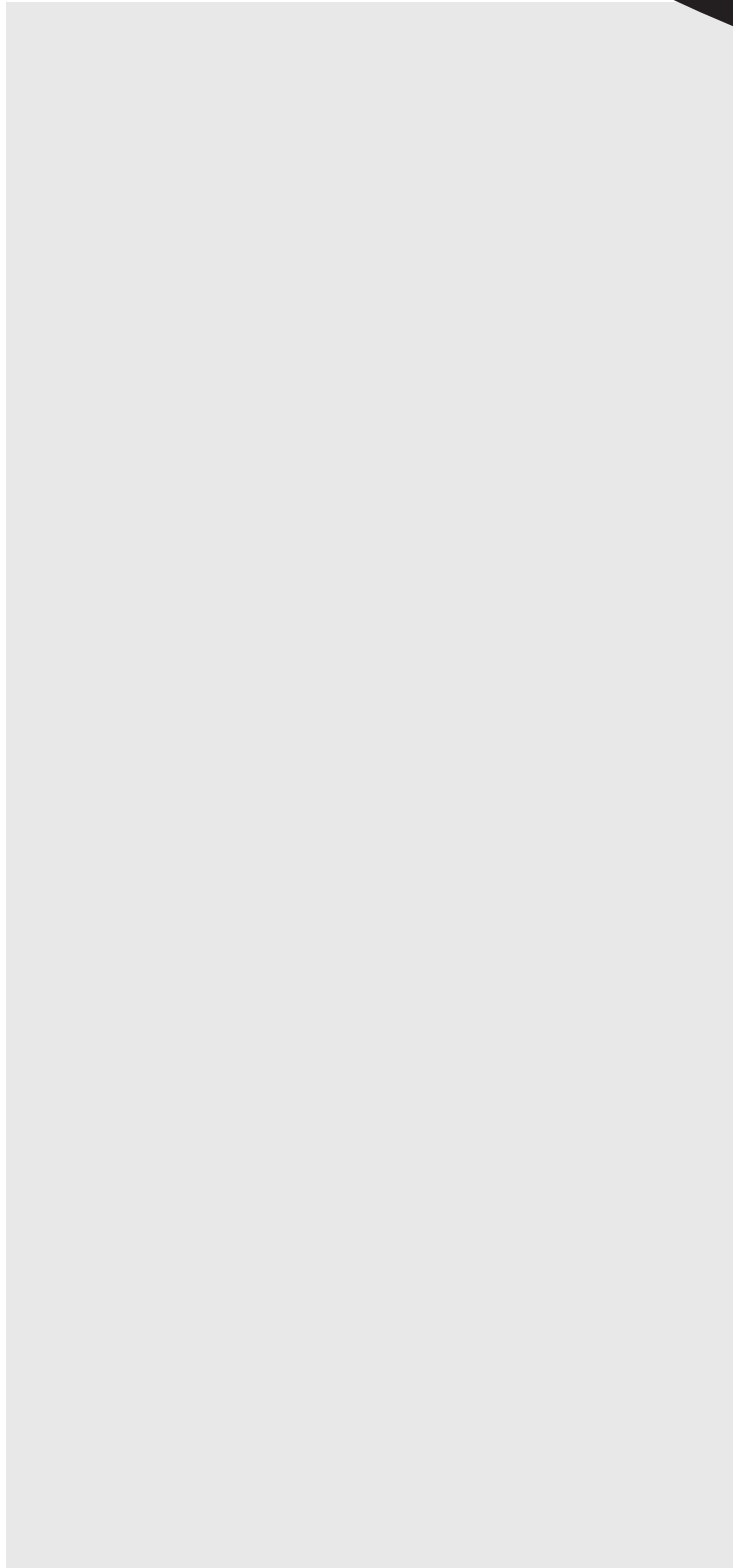
The Coca-Cola Company's Global Environmental Assurance Department recently developed a simple yet effective waste minimization program known as 'Waste\$MART.' While conducting environmental compliance audits at Coca-Cola facilities around the world, Global Environmental Assurance staff recognized that there were numerous recurring opportunities for reducing waste. The group developed an innovative waste minimization training program that could add value to their manufacturing and anchor bottling facilities. The collaborative approach used in the Waste\$MART program is particularly important, since many bottling plants are independently owned and not normally subject to corporate environmental compliance audits.

The four-day waste minimization training program conducted at a host plant typically involves 20 to 25 participants, representing 5 to 15 production facilities. The first training day is an all-day awareness seminar on The Coca-Cola Company's environmental management system. Participants then spend a half-day going through useful wastewater, energy, chemical, and solid waste minimization tools and exercises, such as calculating the true costs of water treatment and use. Finally, participants work in teams of 4–5 people to analyze waste minimization opportunities in various production areas of the plant. At the end of the program, the groups present their findings to plant management and make specific recommendations for reducing waste, along with estimates of the resulting cost savings.

The results of the program have an obvious direct benefit to the plant hosting the program, plus trainees from other plants take the waste minimization methods and tools back to their own facilities. Despite less stringent regulatory requirements in many of the countries in which the Coca-Cola system operates, the program has rapidly grown in popularity overseas because plants recognize the potential economic and reduced-impact benefits. The program not only identifies opportunities for reducing waste disposal and treatment costs, it encourages staff to improve operations efficiencies. For example, preventing syrup from entering the wastewater stream results in more product to sell. The program also boosts staff morale as it taps participants' commitment to the environment and interest in improving plant operations. Costs to participating plants are minimal—primarily consisting of staff time to attend the training—and are far outweighed by the direct benefits of the program. To date, more than \$6 million in potential savings (around \$220K per plant) have been identified.

Case Study  
WASTE  
MINIMIZATION  
PROGRAM:  
**THE COCA-COLA  
COMPANY**





# 3

## Check the Value-Added

### Measuring the value of environmental

initiatives stands as one of the most important, and most challenging, tasks facing environmental professionals. The appropriate choice of tools and approaches depends on what questions are being asked.

- > Are you measuring the value of an individual project, the value of the environmental function or the value of all environment-related activities in the company?
- > Are you estimating the value that could be created from a planned project, or checking to verify that value has been created from an existing project?
- > Who is the intended audience for the measurement information?

Value measurement can be used to verify the outcomes of environmental activities, providing both critical feedback for future program improvements and communicable results to sustain support from key stakeholders. Several of the project evaluation tools presented in this chapter are also useful when planning and prioritizing environmental activities (the focus of Chapter 1). During the planning phase, estimates are used to evaluate the *likely* costs and benefits of going forward, whereas during or following

implementation, *actual* figures are used to assess impacts that the initiative has produced. Financial tools such as Return on Investment (ROI), Net Present Value (NPV), and Economic Value Added (EVA), can be used—with estimated cash flows—to help environmental managers prioritize, select and gain approval for value-enhancing environmental projects. These tools can then later be used to analyze the project impact, quantifying actual costs and benefits.

In recent years, environmental cost accounting and activity-based accounting have generated significant interest among environmental managers as they move to gain a better understanding of the bottom line implications of environmental issues and activities. What is new for many environmental managers is tracking non-traditional costs and benefits, and translating these into the universal language of value—dollars. This chapter offers several strategies for approaching value measurement.

Successful measurement strategies avoid ‘paralysis by analysis.’ By tailoring the precision of the value measurement effort to the importance of the task and demands of the audience, environmental managers can ensure that ‘checking’ supports environmental activities rather than replaces them. Remember the ‘80-20 Rule.’ Eighty percent of the intended result can often be achieved through twenty percent of the effort. Striving for perfection typically requires the additional eighty percent of the effort.

### Gather Cost and Benefit Data

Costs and benefits, expressed as cash flows, are the building blocks for measuring the value added by environmental activities. While this sounds obvious, costs are not always easy to track and benefits are not

<sup>6</sup>Michael B. Rynowecer, *Benchmarking Environmental Management Practice*. Boston: BTI Consulting Group, 1997. always easy to quantify. A recent study found that the true environment-related costs facing firms are significantly underestimated.<sup>6</sup>

### Types of Costs and Benefits

The most commonly tracked costs are those incurred by environmental departments, programs, and projects. These direct costs typically include charges for waste disposal, construction and engineering work, staff salaries, permits, testing, remediation, training, fines, consultants, information systems, and administrative

COSTS AVOIDED BY  
SAVING RESOURCES, TIME,  
AND UNNECESSARY  
OVERHEAD EXPENSES ALSO  
PROVIDE THE BENEFITS  
FOR MANY PROACTIVE  
‘ECO-EFFICIENCY’ ACTIVITIES.

overhead. However, these costs often represent only a small part of the environment-related costs facing the business.

For many organizations, significant environmental costs are hidden in many cost centers or buried in overhead accounts. Although these costs are not under the control or responsibility of environmental staff, they represent significant opportunities for savings. Some companies have seized this opportunity by tracking utility costs (e.g., energy, water), insurance premiums, and other environmental costs which do not appear in the EHS department’s budget. For example, working with quality assurance departments, several environmental departments have begun tracking the amount of sub-quality product that is rejected and disposed. In addition to direct waste disposal costs, there are the added costs of wasted material inputs and lost sales opportunities. These companies have found that the value of improved quality is far greater than the reduced costs of waste disposal.

Therefore, many environment-related costs—both within the control of the environmental department (e.g., compliance activities, emergency response, reme-

## Type of Costs<sup>7</sup>

TYPE OF COSTS	DEFINITION	EXAMPLES
Direct	Costs that are directly linked with a project or process	Equipment, materials, labor, utilities
Hidden	Costs which may be contained in general overhead accounts or accounts for other departments of business units	Waste disposal, monitoring, paperwork, reporting, taxes, regulatory compliance
Contingent liability costs	Those costs associated with liabilities that may result from choices made and action taken	Penalties, fines, legal fees, settlements
Less tangible costs	Impacts which are often qualitative and difficult to quantify using readily available measures	Impacts on corporate or brand image, community relations, worker morale

<sup>7</sup>U.S. EPA, Introduction to Environmental Accounting as a Business Management Tool, 1995.

## Where to Find Cost Data<sup>8</sup>

COST CATEGORY	DATA	WHERE FOUND	WHO TO ASK
Process chemicals	Usage rates	Production records	Foreman
	Unit costs	Purchase orders	Billing department
Storage	Total square footage	Measurement	Maintenance department
	Costs/square foot	Rental contract	Engineering department Billing department
Disposal	Type and quantity disposed	Manifests	Environmental manager
	Unit costs	Invoices	Accounts payable
Training	Number of people	Training records	Environmental manager
	Number of training sessions	Wage rate sheet	Contractor
	Length of training sessions		Personnel department
	Hourly labor rates		
Insurance	Type and coverage	Capital budgets	CFO
	Premium	Invoices	Accountant
			Accounts payable Risk manager
Production	Machine down time	Production records	Production manager
	Machine rates	Operating budget	Finance department
	Labor rates	Personnel records	Personnel department
Taxes/Fees	Sewer use tax	Water bills	Environmental manager
	Chemical use tax	Environmental records	Accounts payable
	Water use tax	Water, chemical usage	Local POTW
	Volume of taxed items	Records	Production Manager Purchasing
Maintenance labor	Hours of labor	Maintenance log	Maintenance department
	Tasks performed	Wage rate sheet	Shop foreman
Maintenance materials	Amount of materials	Maintenance log	Maintenance department
	Costs of materials	Purchase orders	Purchasing department
Water usage	Annual usage rate	Flow meters or logs	Production manager
	Cost/gallon or cubic feet	Town water bills	Accounts payable
Electricity usage	Annual usage rate	Equipment specifications	Production manager
	Cost/kWh	Utility bills	Accounts payable

<sup>8</sup>Mitchell Kennedy, 'Critical Issue of Total Cost Assessment: Gathering Data for P2,' Pollution Prevention Review, Spring 1996.

diation) and outside (e.g., wasted product, inefficient resource utilization, product liability)—represent significant value creation opportunities. This added value often comes in the form of avoided or reduced costs. More and more, companies rely on the benefits of avoided costs to justify the direct costs of conducting environmental regulatory compliance and corporate audit programs. Benefits can result from improvements in the efficiency and effectiveness of compliance activities, as well as through reductions in fines and penalties, and emergency response and clean-up costs. Costs avoided by saving resources, time, and unnecessary overhead expenses also provide the benefits for many proactive 'eco-efficiency' activities. For example, 3M CORPORATION reports that their Pollution Prevention Pays program has generated over \$790 million in saving

<sup>9</sup>3M Corporation  
World Wide Web site:  
[www.mmm.com](http://www.mmm.com)

since its inception in 1975.<sup>9</sup> Avoided or reduced cost calculations compare current expenditures to a baseline, with the difference tallied as savings. Baselines can be drawn from internal (e.g., averages of previous year costs) or external (e.g., average costs in a given industry) sources.

#### *Where to Find Conventional and Hidden Cost Data*

Since many environment-related costs fall outside the budgets of the environmental function, significant effort, creativity and persistence are required to track down costs and translate them into compatible units and figures. The table on page 29 provides guidance on finding cost information in a corporate organization.

#### *Estimating Less Tangible Costs and Benefits*

One of the biggest challenges is estimating less tangible costs and benefits, such as:

- > Positive relationships with suppliers or regulators;
- > Increased product marketability;
- > New market opportunities spurred by environmental drivers;
- > Reduced environmental risk; and
- > Enhanced corporate image from proactive environmental initiatives and avoided incidents.

While quantifying these effects is often grounded on debatable assumptions, the value resulting from these 'less tangible' benefits can dwarf other direct or hidden costs.



### **Tips**

#### **GATHER COST DATA**

***Be credible, not exact.*** In many cases, the exact number is far less important than the order of magnitude or the direction of the trend. Be careful not to get mired in data, searching for elusive exactness. Sanity check the size of various costs and benefits to ensure that they seem correct and credible.

***Draw on the homework of others.*** Often, you can use company or industry averages, sometimes available from trade associations, for estimating the costs and benefits of environmental activities. For example, one company estimates that average costs associated with responding to and cleaning up a spill of diesel fuel run at about \$240 per gallon. Another company estimated that the average safety incident cost the company \$35,000. They then used this figure for calculating avoided costs achieved through new safety initiatives.

***Acknowledge all costs & benefits.*** Just because you haven't measured it, doesn't mean that it doesn't affect value. It is often beneficial to acknowledge important benefits, even if you do not provide a quantitative estimate of its value. Identify the areas where a project or program can create benefits and incur costs. Brainstorming provides a valuable tool for quickly identifying the entire range of costs and benefits that can result from a program or project. This exercise provides a good opportunity to identify the less tangible benefits that may result from a project, such as increased productivity or enhancement of corporate image.



Rhône-Poulenc, as part of an extensive business reengineering effort, determined that the health, safety, and environmental (HSE) function needed an information system to support the communication, tracking, and sharing of HSE knowledge. However, management did not approve all of the funds for the system at once. To get more information about costs and benefits and to build a constituency for the system, they chose to first pilot the system in four plants.

The pilot suite cost less than \$500,000 and consisted of modules to manage the following types of information: incoming material safety data sheets (MSDSs), site documentation, employee training requirements and history, and employee skills. At the conclusion of the first three months of the pilot, Rhône-Poulenc held a workshop for the pilot users at the plants and the HSE shared services offices. The goals of the session were to: (1) brainstorm possible areas of savings from the system; (2) quantify the savings associated with each area; and (3) check the total results for consistency and credibility. In order to quantify savings, the group used a simple worksheet. For each module, the team identified and estimated benefits in three categories:

- > **Direct Cost Savings:** Reduced materials, paper, and copying costs
- > **People/Staff Time:** Reduced need for consulting services, administrative and clerical time
- > **Risk:** Compliance assurance for mandated training, reduced liability from improved access to MSDSs, communication of incident information to prevent future incidents

The benefit totals generated by this exercise doubled the original estimate, so the group reviewed the total annualized savings estimates for each module and asked:

- > Are the numbers of users and the frequency of use estimates realistic?
- > Have we incorporated new costs (e.g., system operating costs) as well as new savings?
- > What costs are soft vs. hard?

Based on the answers to these questions, the team slightly revised their savings estimates and agreed to present a simple payback of nine months for the pilot implementation. This assessment provided senior management with a convincing case to approve moving forward with a full implementation of the environmental management information system throughout Rhône-Poulenc's North American facilities.

Case Study  
PAYBACK FROM  
ENVIRONMENTAL  
MANAGEMENT  
INFORMATION  
SYSTEMS:  
**RHÔNE-POULENC, INC.**



Source: Jim Dray and James W. Heptinstall, 'Justifying the Cost of EMIS: Piloting Lessons from Rhône-Poulenc,' Environmental Quality Management, Winter 1996.

## Common Project Financial Evaluation Tools

TOOL	USES
Payback Period	<p>The payback period is the number of years it takes until the benefits received equal the money invested in a project. Using a payback rule, only undertake projects that cover their initial investment in a pre-determined payback period.</p> <p style="text-align: center;"><i>Payback Period = Initial Investment / Net Annual Profit</i></p>
Return on Investment (ROI)	<p>ROI is calculated by dividing the benefits received from a project (in a set time period) by the amount invested in the project. Projects are worthwhile when the ROI is greater than the average rate of return for the company as a whole.</p> <p style="text-align: center;"><i>ROI = Income / Investment</i></p>
Residual Income (RI)	<p>RI is the net operating income that a project is able to earn above a pre-determined minimum return. RI is calculated by subtracting the required dollar return on the investment from the income received.</p> <p style="text-align: center;"><i>RI = Income - (Required Rate of Return x Investment)</i></p>
Net Present Value (NPV)	<p>NPV is the present value (PV) of future cash returns of a project. The PV of future cash flows is calculated by discounting them at the appropriate market interest rate. The PV of future cash flows is then subtracted from the cost of the investment to arrive at NPV. A project adds value if it has a positive NPV; that is if the present value of future cash flows or benefits is greater than the project costs.</p> <p style="text-align: center;"><math display="block">NPV = -C_0 + \frac{C_1}{(1+r)^1} + \frac{C_2}{(1+r)^2} + \dots</math></p>
Internal Rate of Return (IRR)	<p>IRR is the rate of discount that makes the NPV equal to zero. Projects should only be accepted or continued if the IRR is greater than the opportunity costs of capital (the discount rate).</p> <p style="text-align: center;"><math display="block">NPV = -C_0 + \frac{C_1}{(1+IRR)^1} + \frac{C_2}{(1+IRR)^2} + \dots = 0</math></p>

There are two main approaches to addressing less tangible costs and benefits. The first approach is qualitative assessment of value added, using case studies and focus groups. Narrative case studies can powerfully communicate the less tangible attributes of environmental activities, particularly when they involve partnerships with stakeholder groups. Case studies and focus groups allow environmental staff and partners to articulate areas where less tangible benefits have resulted. In hearing the stories of environmental contributions to business objectives, business leaders can be prompted to assign their own value to these benefits.

Second, several companies have quantified less tangible value using proxy data and survey tools. The use of proxy data allows environmental managers to estimate less tangible costs and benefits using substitute measures. For example, historic short-term fluctuations in a company's stock price or sales around a serious environmental incident or marketing initiative could serve as an approximation of the value of risk avoidance or environmental marketing initiatives.

Surveys provide useful tools for quantifying the value of environmental activities. Project evaluation surveys can be used to measure the degree to which internal customers (e.g., operations and other company departments) value the provision of environmental services. These survey techniques enable environmental managers to generate statistics that reflect value perceptions of their customers, both internal and external.

Surveys can also be used to determine how much customers and consumers value the environmental attributes of products and services. For example, KODAK CORPORATION has occasionally included questions in marketing surveys to assess the degree to which consumers consider environmental criteria and performance when purchasing products.

Environmental managers can also question business managers about the value that they perceive to be

created by environmental activities. Working with APPLIED DECISION ANALYSIS, MOBIL CORPORATION developed a risk-based cost-benefit analysis program to integrate environment, health, and safety values into corporate strategy.<sup>10</sup> By asking senior managers how much they would be willing to pay for certain outcomes (e.g., reduced risk of incidents, improved compliance performance), environmental managers can incorporate value perceptions that are better aligned with the broader business context. In addition to helping to quantify the value of environmental activities, this approach helps inform senior managers about the role proactive environmental activities can play in reducing risk.

## Analyze the Value of Environmental Activities

To measure and communicate the value of environmental activities, corporate environmental professionals must become familiar with several commonly used tools for financial analysis.

### *Project Evaluation Tools*

There are several standard financial tools that companies use for evaluating projects and activities. These tools are often used to decide whether to go forward with an individual initiative and are then applied again to check the results of the project during implementation. Typically, a project is only approved or continued and allocated resources if its annual rate of return exceeds the firm's cost of capital (often referred to as 'hurdle rate'). The table on page 32 summarizes several common financial tools for project evaluation. Becoming familiar with specific project evaluation tools used by the finance department and other business functions in the corporation enables environmental managers to adopt techniques that demonstrate the environmental value to business in a way that resonates with business managers. Additional details on these tools, including several advantages and disadvantages of using each, are presented in the Appendix.

In recent years, corporate pollution prevention and waste minimization initiatives have relied strongly on project evaluation techniques for both prioritizing opportunities and tracking savings. Companies such as DUPONT and BRISTOL-MYERS SQUIBB have initiated programs to encourage business unit and facility staff to seek and undertake pollution prevention activities. Training facility operations personnel in the use of basic project evaluation techniques allows them to demonstrate and document the savings and value from environmental activities. It also leverages non-environmental staff in creating and measuring this value.

<sup>10</sup> Presentation by Daniel Brooks (Applied Decision Analysis, Inc.) and W.E. Jenkins (Mobil Corporation) at the IBC Integrating EH&S into Core Business Processes Conference, Washington, DC, September 8-10, 1997.

DUPONT's 'SHE Excellence Awards' Program encourages business unit teams to document and submit summaries (including cost savings) of pollution prevention 'Zero Heroes' projects for recognition and awards. DUPONT calculates that its 'Zero Heroes' projects resulted in \$550 million in cost savings and avoided capital expenditures over a three year period (1994–1996). In 1994, BRISTOL-MYERS SQUIBB deployed a Best Practices Sharing Database to capture and share innovative business processes and practices, along with their documented savings. In order to be included, a solution must be innovative, demonstrate potential financial benefits, provide environmental, health, and safety benefits, and be transferable to other parts of the company. The Lotus Notes® database is network and/or intranet-accessible, and addresses nineteen business functions, sharing the value of innovative solutions throughout the company. BRISTOL-MYERS SQUIBB estimates that the projects and practices documented in its Best Practices Sharing Database have saved the company over \$15.7 million.

### *Program Evaluation Tools*

While the above tools are useful for measuring the value added by individual projects, corporate environmental professionals are often interested in an overall measure of value contributed by the environmental function or by environmental activities throughout the organization. Three methods for analyzing the overall value of environmental activities are presented below: the balance sheet approach, the value: cost ratio approach, and the Economic Value Added® (EVA)® approach.

**BALANCE SHEET APPROACH** One widely used approach for measuring EVTB is to aggregate the costs and benefits, or net savings, derived from environmental activities. These figures are presented in a table, resembling a traditional balance sheet.

**VALUE: COST RATIO** The Value : Cost ratio provides an overall metric to summarize the degree to which the environmental function covers its costs by adding value to the business. (See the PROCTER & GAMBLE case study on page 36.)

**ECONOMIC VALUE ADDED® (EVA®)** In recent years, several companies such as THE COCA-COLA COMPANY and GEORGIA-PACIFIC CORPORATION have adopted Economic Value Added (EVA®) as a corporate-wide measure of the shareholder wealth created (or lost) by the company during a set time period. EVA® can provide a more accurate perspective on value creation than traditional measures such as earnings per share and return on investment. (See the GEORGIA-PACIFIC case study on page 37.)

Baxter International has pioneered an environmental financial statement approach to measure the value of environmental activities. An Environmental Financial Statement is included in their annual EHS performance report which summarizes the estimated costs and savings (in millions of dollars) of environmental activities worldwide.

Case Study  
 ENVIRONMENTAL  
 FINANCIAL  
 STATEMENT:  
**BAXTER  
 INTERNATIONAL  
 INC.**



Source: Baxter International  
 1997 EHS Performance Report,  
 Issued 1998.

## Environmental Costs

### Cost of basic program

	1997 DATA MILLIONS USD
Corporate EHS affairs and shared multidivisional costs	1.5
Auditors' and attorneys' fees	0.5
Corporate EHS engineering/facilities engineering	0.6
Division/regional/facility EHS professionals and programs	5.8
Packaging professionals and programs for packaging reductions	0.8
Pollution controls—operations and maintenance	2.6
Pollution controls—depreciation	1.0
<i>Total costs of basic program</i>	12.8

### Remediation, waste and other response costs

Attorneys' fees for cleanup claims, NOVs	0.1
Settlements of government claims	0.0
Waste disposal	3.1
Environmental taxes for packaging	0.3
Remediation/cleanup—on-site	0.3
Remediation/cleanup—off-site	0.0
<i>Total remediation, waste, and other response costs</i>	3.8

### TOTAL ENVIRONMENTAL COSTS

16.6

## Environmental Savings

### Income, savings and cost avoidance from 1997 initiatives

Ozone-depleting substances cost reductions	1.7
Hazardous waste disposal cost reductions	0.0
Hazardous waste material cost reductions	(0.2)
Nonhazardous waste disposal cost reductions	0.2
Nonhazardous waste material cost reductions	2.9
Recycling income	4.6
Energy conservation cost savings	3.3
Packaging cost reductions	1.3

### TOTAL 1997 ENVIRONMENTAL SAVINGS

13.8

*Cost avoidance in 1997 from efforts initiated in prior years back to 1990*

86.3

### TOTAL INCOME, SAVINGS AND COST AVOIDANCE IN 1997

100.1



Procter & Gamble (P&G) has used the Value: Cost ratio to show that Health, Safety, and Environmental (HSE) programs more than doubly pay for themselves. The costs included in the ratio are: salaries, labor, insurance, and site operations such as wastewater treatment and landfill disposal. The values come from a variety of HSE services:

- > **Pollution prevention.** This program examines each site for ways to recycle materials and eliminate inputs that are not needed. The costs are compared against a base year to get a savings value.
- > **Design manufacturing waste out.** This program aims to eliminate the cost of product materials thrown away during manufacturing. The cost can be reduced by redesigning the product development process for waste reduction. Again, the savings are tracked against a base year and added to the values.
- > **Insurance savings.** Because P&G has so many HSE services, it is allowed to self-insure both its properties and its workers compensation. Self-insurance provides significant savings over purchasing insurance from outside agencies.
- > **HSE resources.** Costs of staffing HSE drops as the departments become more efficient.
- > **Regulatory reviews.** The HSE group watches proposed regulations and works with regulators so that new regulations are economically feasible. This may prevent a large impact on operating costs, which is considered another value.

The ratio also helps P&G track improvements. When HSE started comparing three years ago, the ratio of value to cost was slightly less than 2 to 1. Now it's slightly more. HSE can improve the ratio both by reducing costs and by increasing value. Tracking the ratios demonstrates to corporate leaders how HSE programs contribute to the bottom line. 'It justifies our existence,' states Robin Tollett, Section Head for Global Environment at Procter & Gamble.

In 1995, Georgia-Pacific adopted the Economic Value Added model (EVA®) as a company-wide financial performance measurement system. Use of EVA® has helped the Environmental Affairs department align environmental decision making with overall business strategy. By using EVA®, Georgia-Pacific has not only established a systematic decision making process from which to evaluate its use of capital, but one that encourages teamwork within and among departments and fosters creative solutions to business problems.

EVA® is the after-tax net operating profit minus a charge for debt and equity capital used to generate that profit. Georgia-Pacific adopted the Stern Stewart EVA® model which, in its simplified form, uses the following equation:

$$\text{Inflows} - (\text{Outflows} + \text{Taxes} + \text{Cost of Capital}) = \text{EVA}^{\circledR}$$

Where Inflows primarily represent revenues and/or value-added, and Outflows represent program costs.

Georgia-Pacific modified the EVA® measurement system to account for departments that deploy relatively little capital, function in an advisory capacity, or primarily add value by reducing costs. That meant looking at other areas where EVA® might not be as obvious, including related expenses such as consulting costs, energy savings, on-time completion of projects, facility permits, and working with customers to add or retain business based on environmental practices.

For example, EVA® techniques were used to measure the value of forming an internal Consolidated Permitting Group within Environmental Affairs to consult with mill operations on air permitting issues. Previously, each of Georgia-Pacific's pulp and paper mills hired their own external consultants to assist with complex permitting issues. The Consolidated Permitting Group is very efficient and popular with facilities; it also generated an EVA® of \$598,000 for Georgia-Pacific's Environmental Affairs department.







# 4

## Advance and Communicate Value

### **Once measurement and analysis have**

clearly demonstrated the value of environmental activities, the corporate environmental professional needs to communicate this value to a broader group of stakeholders, both internal and external to the corporation. Certainly, communication skills are critical in all steps of the Plan-Do-Check-Advance cycle, but the Advance phase often requires the environmental professional to ‘go public’ with environmental success stories to communicate challenges and request help. Communication provides a means to: (1) build momentum and support for environmental activities; (2) enlist partners in other departments and business units; and (3) receive feedback on the initiatives put forth and the methods used to support continuous improvement.

There are many stakeholder groups with whom the environmental manager must communicate effectively—upper management decision-makers, many departments and operational functions within the company, and external interests such as customers, suppliers, and investors. Each of these groups may require their own communications strategies. While the task of communicating effectively with so many audiences may seem daunting, the environmental professional stands in a unique position to create

partnerships across departments and functions. These partnerships create value by generating solutions to business and environmental problems and can open up lines of communication for the future. (See the diagram on pages 40–41.) Drawing on the experiences of numerous companies, this chapter provides overall communication strategies, as well as specific methods for communicating with different stakeholder groups.

## Strategies for Effective Communication

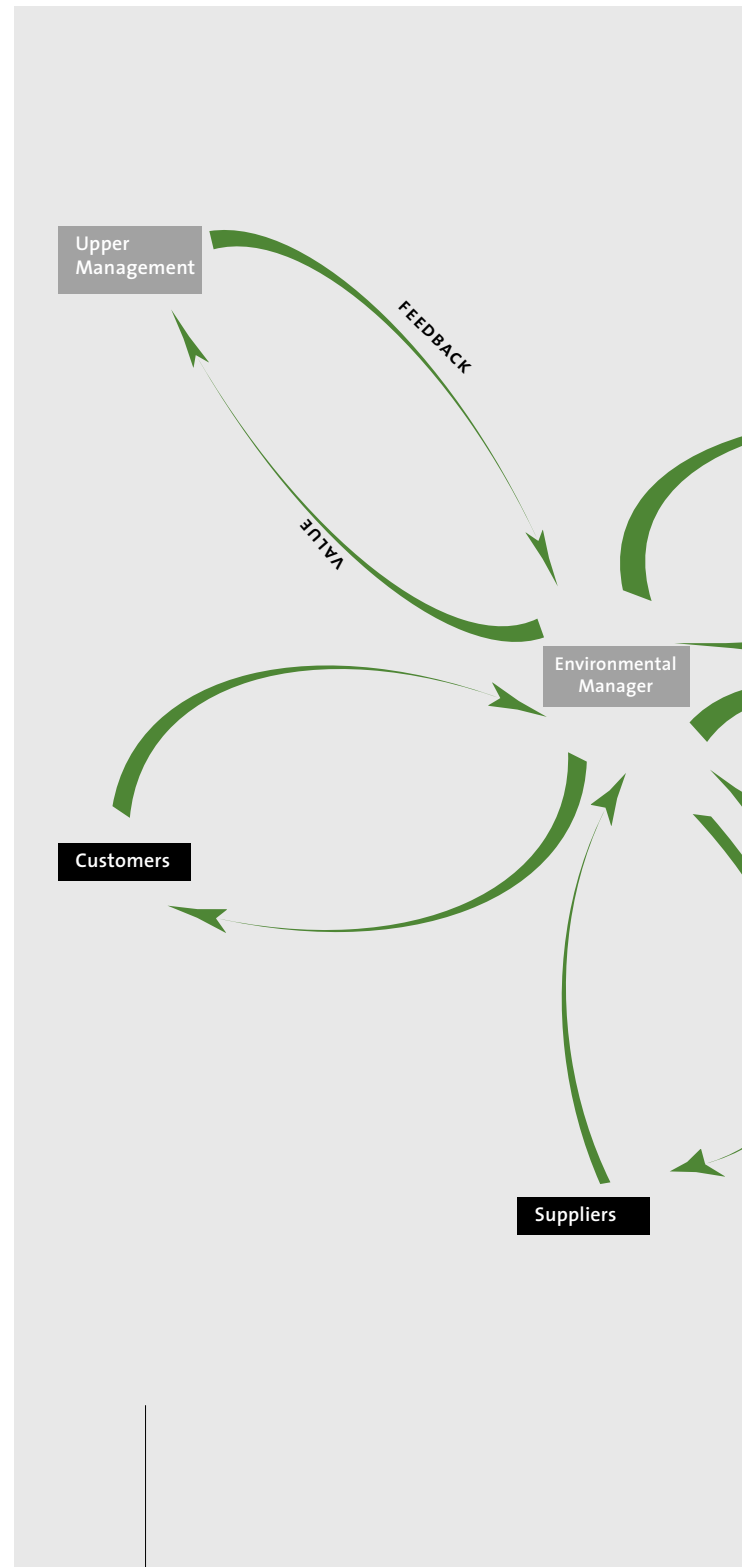
Corporate environmental professionals should consider the following general techniques in reaching out to internal and external stakeholder groups.

**TARGET YOUR MESSAGE TO YOUR AUDIENCE.** When it comes to communication, there is never ‘one size fits all.’ By understanding the interests and motivations of the stakeholders, you can target your message in a way that compels their attention and action. Emphasize directed dialogue with your partners, instead of broadcasting information (e.g. company-wide e-mails).

**LEVERAGE EXISTING OPPORTUNITIES TO COMMUNICATE.** Even in the most supportive corporate environments, you cannot expect upper management or operations staff to have the time to meet with you on a regular basis. When possible, utilize existing organizational forums (i.e. safety meetings, quality teams) to communicate environmental messages instead of setting up special meetings and conferences focused on EHS.

**USE A VARIETY OF COMMUNICATION METHODS.** Individuals learn in different ways—through graphics, written materials, interactive discussions. Since you cannot possibly know the learning styles of everyone you need to reach, vary your methods of communication. Ask key individuals how they would prefer to receive information—e-mail, phone calls, newsletters, presentations, meetings—and how often.

**GET FEEDBACK ON YOUR COMMUNICATIONS STRATEGY.** As you solicit input on environmental programs and projects, gather feedback on your communication strategies and how they could be improved. Is your intended audience receiving and understanding the message? Are they getting bombarded with information? Most companies have professional communicators (public relations, stockholder relations, marketing) who are often happy to help. Use them for advice.



**BUILDING PARTNERSHIPS  
FOR VALUE ENHANCEMENT**

## Communicating Value to Upper Management

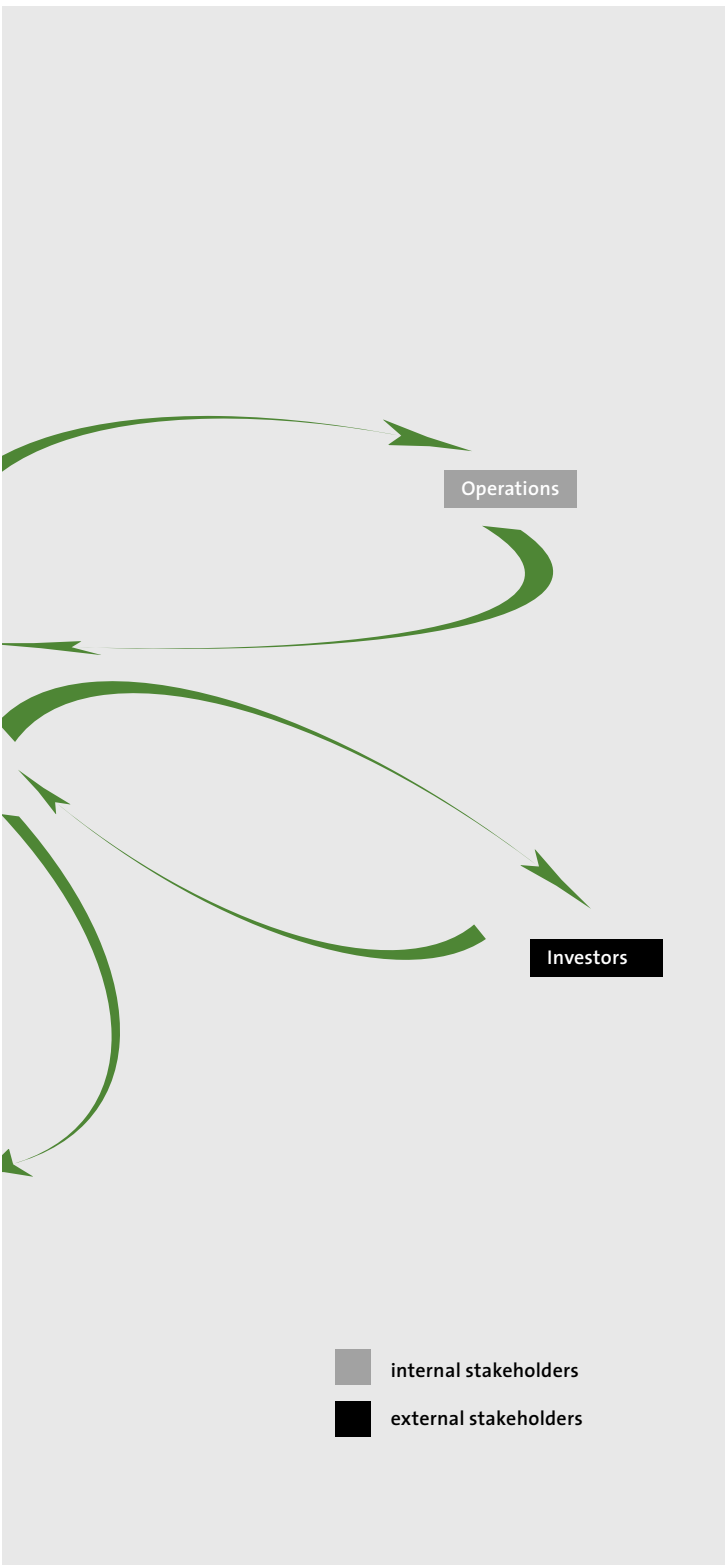
Upper management (such as the CEO, the CFO, the Board of Directors, and various Vice Presidents and Brand Managers) are key decision makers who support the environmental department and control resources. When communicating to upper management, it is particularly important to do your homework. Your core audience in upper management may be only five to ten individuals, and they will expect you to be direct and to the point when you meet with them or write reports for them. Failure to clearly and credibly articulate the value of environmental activities can jeopardize management's commitment to your efforts.

When communicating with upper management, resist the temptation to walk them through your logic and thought processes or the litany of challenges you face. Provide them with the information needed to make an educated decision. This does not mean that all your data needs to be perfect. Top management can accept ballpark figures, provided they are credible. Be sensitive to the context in which they are working—challenges they are facing, important initiatives they are involved with, changes in leadership, and critical deadlines (i.e. annual meetings, budgets).

### *Target the message*

**KNOW WHERE YOU STAND.** Does senior management believe that the environmental function adds value to the business or are you perceived as the 'Department of Production Prevention'? Tailor your message according to where you fall on the spectrum of perceived value. If you lack upper management support, keep a low profile and go to executives only when their approval is required. As you achieve results and earn the support of management, adjust your message. Build a series of success stories and actively engage senior management in communicating the value of those efforts throughout the organization and to external stakeholders.

**HELP SOLVE PROBLEMS.** Put environmental initiatives in terms of other problems management is trying to solve. For instance, relating your waste reduction program to 'process optimization' might get you better results in an organization focused on process improve-



ments. Similarly, you might present the impact of your accelerated regulatory permitting program as one aspect of a time to market initiative.

**SPEAK IN DOLLARS.** Senior executives understand the language of accounting and finance, and you should communicate using their terms. This means presenting in dollars, not kilowatt-hours or tons of waste.

**THE FIVE-MINUTE VERSION.** Know what you want and be able to clearly state your needs. Assume your hour-long presentation to CEO will be cut to five minutes.

**SHOW PICTURES.** Senior managers often do not have time to visit facilities and witness the front line of operations activities. Showing pictures or slides of good environmental practices at a site can make the abstract value of an environmental program tangible to executives. One department found that by taking pictures of poor environmental conditions in overseas facilities, they were able to garner support to improve environmental policies and standards worldwide.

### *Leverage existing opportunities*

Some information is requested by upper management on a regular basis, through budget requests, quarterly and annual reports, business plans, and presentations to the board. Take advantage of these opportunities to communicate key messages regarding the value of environmental activities to the business. Often one key idea, packaged well within a standard presentation, can catch top management attention.

**KNOW AND USE YOUR ALLIES.** As one environmental manager quipped, 'it's not who you know, but what you know about who you know.' Know who is supportive of your efforts, and who needs to be convinced. Provide your allies in upper management with messages to convey, whether in meetings or passing in the hallway, to their colleagues. The environmental department in one company was able to develop a relationship with the external affairs department by sharing a floor of the office building. The external affairs department had the ear of senior management and was able to assist the environmental managers in communicating with senior management.

**PLUG INTO THE STRATEGIC PLANNING PROCESS.** Strategic plans go through the office of the CEO for approval, making them effective tools for communicating environmental objectives and opportunities. By

incorporating environmental goals into the corporate strategic plan, the environmental manager can align environmental goals with those of the business units and foster a dialogue with other departments and functional areas.

**PUBLICIZE YOUR PUBLICITY.** Make certain that senior executives are notified of any awards the company receives for environmental programs. Ask them to accept an award on your behalf, or ask the awarding organization to notify and congratulate the CEO. For example, one environmental department, upon receiving an award from the National Association for Environmental Management (NAEM), asked NAEM to send a letter to their CEO, praising the achievement. The external recognition bolstered the executive's interest in and support for the environmental department.

**BENCHMARK AGAINST OTHER COMPANIES.** Make senior executives aware of environmental strategies and business value created by other companies. Use benchmarking to show the areas where you are leading the industry or where you fall short. One EHS department developed an environmental software program which another company wanted to model. The environmental manager was pleased to share information, but asked for a letter from the other CEO to her CEO which stated, 'Our company is committed to improvements in environment, health, and safety, and your company has an excellent tool which would help us achieve our goals. Would you entertain us visiting your company so that we could learn the most about this tool?' This made the CEO aware that someone external to the organization valued the work of the environmental department.

**USE THE PRINTED WORD.** Send articles or white papers on environmental value to business to senior executives, or write your own articles in the company newsletter, where an executive might read it. Solicit quotes from executives for environmental reports, annual reports, or articles.

**USE THE SPOKEN WORD.** Have executives kick-off meetings, expressing the importance of the initiative and its value to the company. This strategy assures operations of top management's commitment to the project and makes certain that the executive is fully educated regarding the program and its benefits.

## Communicating Value to Operations

Operating departments and facilities are the customers of environmental services and the partners needed to effectively integrate environmental activities into business processes. Operations is where change happens, and where the real opportunity to deliver value to business lies. Seemingly small changes in work processes can have a dramatic impact on environmental performance and generate significant value for the business.

### *Target the message*

Recognize that operations staff often will be responsible for implementing much of the environmental program, and this work may represent an additional burden (e.g., waste segregation). Communicate the value of environmental programs in terms of solving operations problems. For example, emphasize those environmental activities which have led to process efficiency gains, improved resource utilization, reduced waste costs and burden, and/or higher quality products. Acknowledge the added effort that may be required.

**MOVE TOWARD A SERVICE-ORIENTED APPROACH.** View environmental programs and projects as services to the business. Prepare a list of the services you provide each business unit and share the list. You can even create a matrix to show which programs benefit which departments. In this way, you are not defending what you do, but selling and engaging in a dialogue with your customers.

**CONVEY UPPER MANAGEMENT SUPPORT.** To partner with you, operations will want to know that the project has the support of upper management. If you have upper management commitment, leverage it.

**SPEAK IN OPERATIONS LANGUAGE.** Each department and functional area may have its own jargon. You should be able to roughly translate your message into these languages. Challenge yourself to learn the new languages rather than expecting others to understand EHS jargon.

**RECOGNIZE SUCCESSES.** If you rely on partners in the business units to assist with environmental activities, you must give them recognition when environmental objectives are met. They deserve a pat on the back to feel good about their work and to continue their efforts. Recognition and rewards spur innovation and generate additional value for the organization. To celebrate the environmental success stories in oper-

ations, one company hired a free-lance journalist, who interviewed the heads of the business units and wrote an article on each business unit's accomplishments.

### *Leverage existing opportunities*

You will seldom have the opportunity to get operations managers' undivided attention: be sure to leverage existing forums. If you cannot pull staff away from production activities for meetings, integrate your communication efforts into their normal work context.

**GET YOUR ISSUES ON THEIR AGENDAS.** Each business unit has meetings and business processes into which environmental activities can often be integrated. For example, environmental items can be included in the agenda of weekly safety meetings. Environmental questions can be added to marketing surveys and product development checklists.

**GET THEIR ISSUES ON YOUR AGENDAS.** Invite managers from other departments and business units to serve on the Environmental Council, or to speak at environmental meetings. One company established a scholarship program for site personnel to attend the annual environmental meeting. The applicants had to write a short essay on why they wanted to attend and the environmental department paid travel expenses.

**ESTABLISH GREEN TEAMS.** Several companies have involved non-EHS staff in environmental issues by setting up Green Teams. These teams which are made up of volunteers from all job levels and departments can be a valuable resource for communicating environmental messages, as well as for generating ideas on how to integrate environmental activities into business processes.

**CO-OPT REQUIRED TRAINING COURSES.** Many successful environmental managers have been able to work with human resources to include environmental elements into ongoing non-EHS training activities. EHS training which is required by law can also be adapted to include more general discussions on environment's value to business and instructions on how to get involved with proactive environmental programs in the business units.

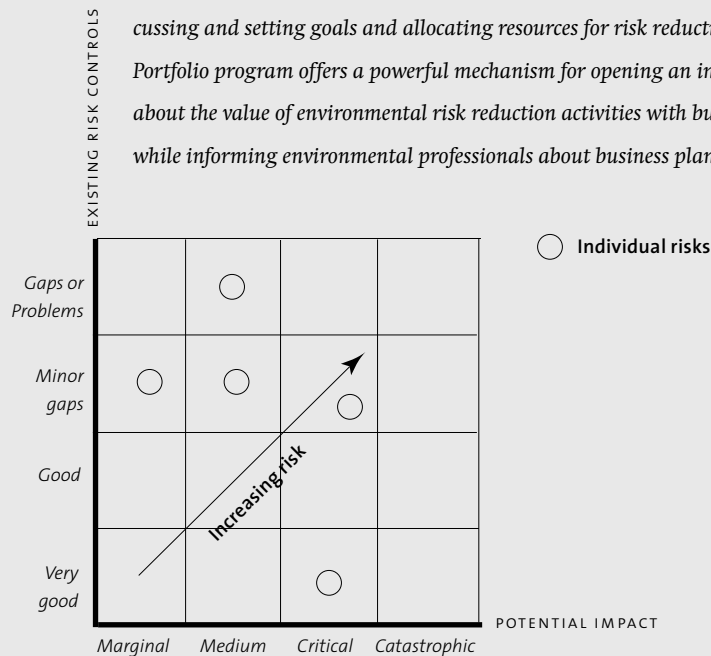
**USE MASS MARKETING.** Companies have devised a variety of channels to reach out to all employees in the organization. To introduce new employees to environmental initiatives and commitments, environmental

Case Study  
 RISK PORTFOLIO  
 COMMUNICATION:  
**NOVARTIS  
 CORPORATION**



**Novartis Corporation** developed its Risk Portfolio program to better integrate awareness of environmental, health, and safety risks into corporate decision-making. Novartis sites worldwide prepare portfolios of the risks perceived by the site management team. This process enables environment, health, and safety staff to work directly with site business managers, fostering communication about important environmental issues and their relevance to business goals. Each site team begins the process by identifying hazards and areas of vulnerability, assisted by a tickler list of hazards. For each identified hazard, a standard risk assessment form is completed. The risks are then plotted by their 'potential impact' (worst case potential) along the X-axis of a chart. The 'actual risk control' is then evaluated, looking at the existing control measures as well as considering the probability of occurrence. The risk control is plotted along the Y-axis. (see figure below)

Company and worldwide business sector risk portfolios are then made by merging the highest hazards from each site's portfolio into a new matrix. The risk portfolio serves as both a measurement and internal communication tool – providing business managers at all levels with an overview of risks, as well as an objective basis for discussing and setting goals and allocating resources for risk reduction. The Risk Portfolio program offers a powerful mechanism for opening an internal dialogue about the value of environmental risk reduction activities with business leaders, while informing environmental professionals about business plans and priorities.



In May 1998, Southern Company hosted a forum on 'Adding Value to the Corporation' to highlight the topic of environmental value to business. The goal of the forum was to bring together environmental and business staff from Southern Company to initiate a dialogue on the value that environmental activities add to the corporate bottom-line. Southern Company participants came from senior management, including the Chief Financial Officer (CFO) and other executive management, as well as internal operational departments. Southern Company also invited several state regulatory officials and representatives from other companies, with the objective of discussing mutual expectations and sharing effective practices and tools. One session, 'Environmental Toolkit,' gave time for company representatives to present their approaches to measuring and communicating environmental value-added. The response from the forum was overwhelmingly positive. As a follow-up to the forum, Southern Company has initiated a pilot project, exploring various ways to express environmental value in traditional financial terms. Environmental professionals found the forum, and subsequent initiatives, to be effective mechanisms for increasing communication, understanding, and collaboration between business and environmental staff.

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Case Study

EVTB CONFERENCE:  
**SOUTHERN COMPANY**

departments have produced short videos that are shown during new employee orientation. Successful environmental managers have also published environmental newsletters and bulletins and included leaflets in the paycheck envelopes.

## Communicating Value to External Stakeholders

The environmental manager must communicate the business value of the environmental function to several external stakeholder groups, including customers, suppliers, and shareholders. These are diverse groups with varied motivations and interests. As with operations and upper management, know where you stand and adjust your strategies according to the needs and expectations of your audience.

### Customers

Customers buy products and services based on price, quality, the image of the brand, and in some cases, the perception that the business is a good corporate citizen. To effectively communicate the value of your environmental programs to your customers, utilize existing departments and resources that are available in the organization to support consumer relations.

**PARTNER WITH PUBLIC AFFAIRS.** Develop alliances with your company's public affairs and marketing departments. These departments are often looking for information on company performance and products that can be communicated inside and outside of the company. Creating environment-focused employee volunteer programs can both improve community relations and educate volunteers about the value of environmental activities. Public affairs and investor relations departments can assist environmental professionals in developing cases studies and articles which recognize environmental programs and achievements.

**INFORM CUSTOMER SERVICE.** Provide customer service representatives with reference materials to answer environmental-related questions from customers when they call or write the organization.

**MAKE YOUR WEB SITE A BIG HIT.** Use your company's web site to communicate your environmental goals and success stories. Successful web sites are graphically interesting, informative (include specific examples, not just vague policy statements), and are updated regularly.

### Suppliers

Increasingly, external stakeholders are concerned not only with your company's environmental performance but the performance of the companies who supply the raw materials and components for your products and services. Implementing aggressive environmental supplier programs can reduce your company's risks and liabilities and improve the life cycle environmental performance of your products and services. One consumer products company found that by convening regular supplier meetings, they could set group environmental goals and share best practices on how to achieve them. As suppliers improve their environmental records and decrease liabilities, the cost of inputs may also decrease — creating value for your company. To harvest these potential benefits, you will have to work with the purchasing department to engage suppliers in your programs and commitments.

### Financial Community

Members of the financial community—including stock analysts, portfolio managers, investors, insurers, and lenders—evaluate the performance, profitability, and growth of publicly traded companies to maximize investment returns. Typically, these groups are concerned with corporate environmental performance in cases where there is a significant negative impact on the company's earnings per share, such as through contaminated site remediation, litigation, or non-compliance penalties. More proactive environmental activities, such as pollution prevention, eco-efficiency and energy efficiency, currently receive limited attention in company valuations. However, according to a survey of financial analysts, the influence of environmental performance on corporate financial analysis is likely to grow in the coming decade.<sup>11</sup> Whether environment becomes a significant factor in company analysis depends largely on whether companies can demonstrate the importance of environmental activities to their future performance, profitability, and growth.

Numbers alone, however, do not always tell the story. While financial analysts depend on quantitative factors (e.g., earnings, costs, return on equity) to assess future growth and profitability, qualitative factors also

<sup>11</sup> Linda Descano and Bradford S. Gentry, 'How to Communicate Environmental Performance to the Capital Markets,' CMA News (April 1998) p. 35.



weigh heavily in financial decisions. Corporate reputation, business strategy, quality of management, and brand loyalty sway many decisions in the financial community. Proactive environmental activities, coupled with documented results, case studies and examples, can provide excellent stories—evidence that these larger qualitative factors are a core (and practiced) part of the company's fundamentals. For many financial analysts, the salient fact is not that a company saved \$50 million through a pollution prevention program. Rather, the value is that the company has a program that will: (1) reduce future pollution and waste treatment costs; (2) continually seek improvements in process efficiencies; and (3) safeguard against future risk and liabilities. Even though environmental professionals rarely have an occasion to communicate directly with members of the financial community, they can affect the availability and credibility of environmental stories.

**PROVIDE EXECUTIVES WITH YOUR STORY.** CFOs and other executives responsible for investor relations infrequently discuss the business rationale for and impact of corporate environmental activities with stock analysts, portfolio managers, and shareholders. Environmental professionals can provide executives with information they need to present a consistent and credible story regarding environmental initiatives. All senior managers, whether in finance, legal, operations, marketing, or R&D, should be versed in how the company's environmental strategy and initiatives reduce risks and create competitive advantage. Avoid 'greenwash'—environmental claims must be credible, or your message and reputation will be discounted.

**PREPARE EXECUTIVES FOR SHAREHOLDER MEETINGS.** For shareholder meetings, provide the CEO and CFO with talking points on environmental objectives, initiatives, and performance. Even if the executives choose not to proactively address environmental issues at shareholder meetings, they will be prepared to address any questions or shareholders initiatives. For example, at one company's annual shareholder meeting, an initiative based on the CERES principles was put to a vote. Although the initiative was defeated, the CEO took the opportunity to reinforce the company's environmental commitment. Environmental professionals can further influence investor relations by publishing annual environmental reports, including environmental informa-

tion in corporate annual reports, or by supplying investor relations or external affairs department staff with environmental 'talking points.'

**LEVERAGE INFORMATION DISCLOSURE.** Through the Internet, information on corporate environmental performance is available to the public, allowing unprecedented access and analysis. Government agencies, such as the U.S. EPA, have taken significant steps to disclose corporate environmental data electronically. Numerous environmental organizations have launched web-based ratings of corporate environmental performance. Several non-governmental organizations evaluate corporate environmental performance specifically for use by investors and financial analysts. By monitoring these sources, an environmental manager can be better prepared to: (1) correct errors in disclosures; (2) use disclosures to win support or leverage action within the company; and (3) provide sources with better data about the outcomes and value of environmental initiatives.

**GET INVOLVED IN THE DEBATE.** Many financial and corporate managers perceive environment as a non-financial issue. While several initiatives have recently been launched to highlight and explore ways in which environmental activities add value to business, discussion of the links between environmental and financial performance are only beginning. Conferences and studies sponsored by GEMI, the Aspen Institute, the EPA Green Markets Committee, among others, are beginning to focus attention on these issues. By engaging in such initiatives, environmental professionals can broaden the debate. Write articles and op-eds for magazines, newspapers, and journals that reach the financial community. Speak to students at a local business school regarding the links between corporate environmental performance and financial performance.

**PLUG BACK INTO THE BUSINESS.** At the core of 'advancing' the topic of environment value to business—and more importantly, environmental initiatives within the organization—is communication. What communication does for us is plug us into the business, creating partners within and external to our organizations who understand our business needs, our stakeholders' needs, and how to help us address those needs. This is our link back to Chapter 1 and another pass along the Plan-Do-Check-Advance cycle.

# Conclusion

**Changing business realities** are shifting the focus of environmental departments from managing consequences to managing resources. Focusing on the business value of environmental management systems has become a high priority for environmental professionals. But how much do environmental activities actually contribute to the bottom line? Historically, most executives believed that environmental activities had little bearing on corporate financial performance, except in higher-risk industries. There are signs, however, that attitudes are shifting. Executives from leader companies are increasingly speaking out about the operational and strategic value of environmental activities. As Vernon R. Loucks Jr., Chairman and CEO of Baxter International Inc., states:

'At Baxter, we've found that corporate environmental programs, as well as those in the health and safety area, produce important financial benefits. Our experience makes a powerful bottom-line argument for EHS-responsible corporate behavior that should appeal even to companies that haven't yet made EHS issues

<sup>12</sup> *Baxter International Inc. Annual Environmental, Health & Safety Performance Report, 1997.* a priority. For example, Baxter's environmental initiatives over the past seven years yielded more than \$100 million in savings.<sup>12</sup>

While many companies have documented the direct benefits of corporate environmental activities, the question remains: Do these benefits ultimately result in improved profits and higher stock prices? The link to

reduced operating costs has been demonstrated many times. However, there has been limited analysis to evaluate the link between corporate environmental performance and improvements in firm sales, earnings, competitive position, investment risk profile, or market value. A few recent studies suggest a positive correlation between environmental performance and financial performance. In a survey of 300 of the largest public companies, an ICF Kaiser study found that those firms that improve their environmental management

<sup>13</sup> *Stanley J. Feldman, Peter A. Soyka, and Paul Ameer, Does Improving a Firm's Environmental Management System and Environmental Performance Result in a Higher Stock Price? ICF Kaiser International: November 1996.*

<sup>14</sup> *Mathew J. Kiernan and Jonathan Levinson, 'Environment Drives Financial Performance: The Jury is In.' Environmental Quality Management (Winter 1997).*

systems and environmental outcomes experienced an increase in their stock price by as much as five percent.<sup>13</sup> Another study found that a diversified portfolio of eco-efficient companies can be expected on average to outperform less efficient competitors between 240 and 290 basis points per annum.<sup>14</sup>

Environmental performance can contribute to corporate profits in the following areas: (1) compliance; (2) operations; (3) risk management; (4) marketing; (5) capital investments; (6) strategic direction

◀ (See Chapter 1.) The primary ways that corporate environmental activities impact stock prices are by reducing the risk of the firm and enhancing brand value. Risk is a critical factor for investors making

investment decisions. Some financial professionals also believe that proactive environmental management provides a leading indicator of good general management practices within a company. Firms that systematically seek to optimize resource efficiency and minimize wastes often integrate environmental activities into core business processes and focus on continuous improvement—factors essential to long-term innovation and value creation. Despite increased recognition of environmental contributions to financial performance, (according to a recent United Nations Development Program (UNDP) study), there remains

<sup>15</sup> Ann Thayer, 'Green Wall on Wall Street.' C&EN, 4 May 1998, p. 31. a 'green wall on Wall Street.'<sup>15</sup> Many stock analysts still do not consider environmental performance an important factor in determining the value of a corporation. This may be due to the fact that analysts rely on information from annual reports and corporate officers which rarely reveal much about environmental initiatives. At the same time, corporate CEOs and CFOs believe they are effectively communicating their commitment to the environment and their environmental success stories.

One reason for this disconnect may be that most corporate environmental communication is directed towards stakeholders such as environmental groups, plant communities, regulators, and customers, and are not written in a language that analysts find useful or even understand.

The continuing debate among corporate executives and Wall Street analysts emphasizes the need for environmental managers to measure the contributions of environmental activities to the bottom-line of their companies and to effectively communicate the connection. The role of the corporate environmental professional is changing from that of technical specialist to cross-functional consultant, process optimizer, and business problem-solver. By integrating the ideas and tips contained in this primer into corporate environmental management systems, environmental managers can better realize and communicate environment's value to business.

## Appendix: Financial Tools

The following financial tools are useful in planning, analyzing and communicating the economic value of environmental projects.

### **PAYBACK PERIOD**

The payback period of a project is the number of years (or months) until the benefits you receive from a project cover the money you have invested. If you apply the payback rule to investment decisions, you will undertake only projects which cover their initial investment within some pre-determined period.

#### **Advantages**

Simple to calculate, allowing managers to quickly conduct preliminary evaluations or triage projects. Payback is often useful for the myriad of minor investment decisions managers face.

Easy device for communicating investment projects. Managers can casually discuss 'quick payback' projects.

Assists in managerial control. Senior management will know within a period of a few years if a manager calculated the payback period correctly and made the correct decision to go forward with a project.

#### **Disadvantages**

Managers must make an arbitrary decision as to what is an acceptable payback period. If a company uses the same cutoff date regardless of project life, it will tend to accept too many short lived projects and too few long ones.

Cash flows are not typically discounted, so the time value of money is not taken into account. In addition, all possible cash flows after the payback period are not included in the calculation.

For projects where managerial control is less important and making the right investment decision is very important, you should consider using more accurate financial tools such as net present value.

### **RETURN ON INVESTMENT (ROI)**

Return on Investment (ROI) compares how much you invest in a project today with the benefits that you will see in the future from the project. It is calculated by dividing an accounting measure of income by an accounting measure of investment. This ratio should then be compared against the rate of return for the company as a whole or against some external yardstick.

ROI = income/investment

Some firms use operating income in the numerator, others use net income. Some estimate total assets for the denominator, others measure total assets minus liabilities.

#### **Advantages**

Combines all components of profitability (revenues, costs, and capital investments) into a single number.

Can be compared with the rate of return on other potential projects elsewhere (both inside and outside the organization).

#### **Disadvantages**

Covers only a specific time period. May not account for large cash flows in the longer term.

Considers only the average return on investment and ignores the time value of money.

Emphasizes short-run performance rather than long-term profitability. To maintain a high ROI, managers may reject otherwise profitable investment opportunities.

### **RESIDUAL INCOME (RI)**

Residual Income is the net operating income that a project is able to earn above a pre-determined minimum return. RI is calculated by subtracting the required dollar return on the investment from the income received.

RI = income – (required rate of return x investment)

#### **Advantages**

Easy to compute, and often leads to the same conclusions as Economic Value Added (EVA) techniques.

Encourages managers to make profitable investments which may be rejected when using the ROI formula. Using RI, you could justify a project that has a return greater than the minimum required, since it will add value to the organization as a whole.

Managers focus on maximizing a dollar amount rather than a percentage (as in ROI).

#### **Disadvantages**

The cash flows are not discounted, so the time value of money is not taken into account.

### **NET PRESENT VALUE (NPV)**

Net Present Value (NPV) is the present value of future cash returns of a project, discounted at the appropriate market interest rate, minus the present value of the cost of the investment. An investment is worth making if it has a positive NPV. If an investment's NPV is negative, it should be rejected.

$$NPV = -C_0 + \frac{C_1}{(1+r)^1} + \frac{C_2}{(1+r)^2} + \dots$$

where C is the cash flows (costs – benefits) in each year and r is the discount rate.

#### **Advantages**

NPV incorporates all the cash flows of a project (other approaches, such as payback period, ignore cash flows beyond a particular date).

A dollar today is worth more than a dollar tomorrow. NPV reflects the time value of money and discounts the cash flows properly.

The discount rate (r) can be adjusted to reflect risk.

#### **Disadvantages**

Involves more sophisticated calculations and analysis.

Is more difficult to effectively communicate.

Managers must make arbitrary decisions about the true opportunity costs of capital to employ (i.e. discount rates).

### **INTERNAL RATE OF RETURN (IRR)**

The Internal Rate of Return (IRR) is an important alternative to NPV. IRR is the rate of discount which makes the Net Present Value (NPV) equal zero. Projects should be accepted if the IRR is greater than the opportunity costs of capital (the discount rate).

$$NPV = C_0 + \frac{C_1}{(1+IRR)^1} + \frac{C_2}{(1+IRR)^2} + \dots = 0$$

where C is the cash flows (costs – benefits) in each year.

#### **Advantages**

The IRR number is intrinsic to the project and does not depend on anything except the cash flows.

#### **Disadvantages**

Involves more sophisticated calculations and analysis.

Is more difficult to effectively communicate.

If a project has cash inflows followed by one more or outflows, the IRR decision rule changes: managers should accept projects if the IRR is below the discount rate.

Some projects have a number of changes of sign in cash flows over time. If this is the case, there will be multiple internal rates of return, and NPV must be used instead.

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