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### What are Environmental Audits and are They Good for Business?

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This starred paper submitted by Wayne Jewett in partial fulfillment of the requirements for the Degree of Master of Science at St. Cloud State University is hereby approved by the final evaluation committee.

ARE THEY GOOD FOR BUSINESS

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The explosive growth of interest in environmental issues among the public at large, and the media in particular, has focused concerns on the environmental image of company projects, and its actual operations. This renewed focus on the environment has many business leaders questioning their companies' environmental responsibilities.

This report will address several of these questions by introducing the concept of the environmental audit (EA). Further, explanations and examples will demonstrate how using an EA can help companies gain a competitive advantage.

Environmental issues have a significant impact on a company's operations. Regulatory compliance, employees' health and safety, cost savings and image in the community are just a few of the reasons why management should be concerned about the environment.

In addition, governments worldwide are strengthening legislation for pollution, wastage and corporate responsibility. All these concerns have prompted many firms to consider conducting environmental audits.



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## ENVIRONMENTAL AUDITS

What is an EA? The Environmental Protection Agency (EPA) defines an EA as a systematic, documented, periodic and objective review by regulated entities of facility operations and practices related to meeting environmental requirements (EPA, 1995). An EA can be used by companies to show compliance with environmental standards or to gain a competitive edge. This competitive edge can be gained in several ways:

- (1) Safeguarding the environment, which preserves future goodwill in the eyes of the public and minimizes lawsuit risk.
- (2) Identifying potential cost savings, such as from waste minimization.
- (3) Pricing products more effectively by accurate measurement of environmental costs.
- (4) Providing a safer, healthier work environment, thus improving the morale and productivity of their workers.
- (5) Improving the image of the company in the eyes of so called "green" investors, which are investors who will only support environmentally conscious concerns.
- (6) Allowing a company to compete on a global scale by ensuring compliance with international environmental

regulations such as International Standards Organization 14000. (ISO 14000)

### EA Costs

EAs can be expensive. One audit firm estimates EA costs range from \$25,000 to \$175,000 depending on the size and complexity of the operation (Olson, 1995). In addition, the EA costs are often only a prelude to clean-up and remediation costs. Another daunting concern for companies contemplating an EA is the risk from self-disclosure.

### Self-Disclosure

In the past, EAs have been somewhat of a "Catch-22" for many companies. Environmentally responsible operations often conducted internal self-audits to determine if they were in compliance with EPA issued mandates. However, if the EPA were to see these internally generated documents, it could use the information against the company in a lawsuit. This policy discouraged the practice of self-auditing. After much discussion and review, the EPA developed and released a new interim policy.

#### EPA'S NEW POLICY

In March, 1995, EPA administrator, Carol Browner, announced a major new policy involving EAs. The EPA has proposed an interim policy that offers greatly



reduced penalties and amnesty from criminal prosecution to facilities that voluntarily disclose and promptly correct violations that are identified through self-policing. Except in cases involving serious harm to the environment or to the public, the punitive component of most infractions will be dropped if companies comply with several conditions the EPA has set forth. This policy partially eliminates a deterrent to voluntary EAs. The conditions for reducing civil penalties and not making criminal referrals in accordance with the EPA's new interim policy are as follows:

- (1) Voluntary self-policing. The regulated company must discover the violation through their own self-audit.
- (2) Voluntary disclosure. The regulated entity fully and voluntarily discloses the violation in writing to all appropriate federal, state and local agencies as soon as it discovers the violation and before a third party makes notice.
- (3) Prompt correction. The regulated entity corrects the violation either within 60 days of discovery or as expeditiously as practicable.
- (4) Remediation of imminent and substantial endangerment. The regulated entity expeditiously

poll remedies any condition that has created or may create an imminent and substantial endangerment to human health or the environment.

(5) Remediation of harm and prevention of repeat violations. The regulated entity implements appropriate measures to remedy any environmental harm due to the violation and to prevent a recurrence of the violation.

(6) No lack of appropriate preventive measures.

The violation does not indicate that the regulated entity has failed to take appropriate steps to avoid repeat or recurring violations.

(7) Cooperation. The regulated entity cooperates as required by EPA and provides such necessary information that is required by EPA to determine applicability of this policy (EPA, 1995).

The EPA hopes that this policy will bring about candid and thorough self-policing by the regulated entities. It is crafted to give companies predictability and rewards environmentally responsible actions without unduly compromising the safety of the public and the environment.

For some industries--particularly in low-tech, high-pollution sectors such as oil and gas, pulp and paper, mining, and toxic chemicals--this new EPA

policy alone should prompt serious consideration of an EA. However, other, less overtly polluting industries can also benefit from an EA. By using the information an EA uncovers, managers can more effectively price their products. In the competitive, global business community, customers demand quality at a lower price. Managers continually strive to develop operational improvements that will decrease costs and improve the company's bottom line. Business organizations today have the added burden of dealing with environmental expenses.

#### ABC

Activity-based costing (ABC) is a tool that helps managers identify what elements of their business are contributing the most to these expenses. Armed with this information, managers are better able to decide which products to terminate, what processes to change and how to lessen the overall negative impact of the organization on the environment. When managers have accurate and timely information, they can effectively identify and assign more of the implicit and explicit environmental costs and, therefore, make informed strategic decisions. When traditional cost systems developed, the major product cost in most manufacturing companies was labor. Further, "fixed" costs were minimal. Updating cost

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## USING AN EA FOR COMPETITIVE ADVANTAGE

important areas like environmental compliance and In the competitive, global business community, customers demand quality at a lower price. Managers continually strive to develop operational improvements that will decrease costs and improve the company's bottom line. Business organizations today have the added burden of dealing with environmental expenses.

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systems by incorporating the factors relating to business in the 1990s is essential for competitiveness. Now, companies must account for costs relating to increasingly important areas like environmental compliance and remediation, distribution, marketing, factory support and engineering costs. Many companies struggle to quantify the amounts they spend on the environment. Traditional accounting systems and standard audits are inadequate to the job of providing accurate environmental costs. An ABC system, coupled with information from an EA, allows managers to accurately address environmental costs.

#### Applying ABC

When using an EA to identify the activities and costs associated with environmental issues, it is important to remember that there are both explicit and implicit costs. ABC works best when all the costs are identified and assigned to the proper cost drivers. Some examples of explicit costs identified in an EA would be: disposal costs, technology modifications, and monetary fines. Implicit costs are more difficult to quantify. For example, education and training costs, legal fees, and executive time spent on environmental issues. The possession of this accurate cost information allows management to correctly apportion expenses to products.



### An Illustration

Consider a hypothetical furniture company, Just Chairs. Just Chairs produces two lines of chairs: unfinished (UFIN) and finished (FIN). Management at Just Chairs is disappointed with recent sales numbers and is considering discontinuing the UFIN line. An EA uncovered the following information about the manufacturing process at Just Chairs. The manufacturing process for the UFIN furniture results in very little waste that has environmental consequences, sawdust and residual glue. The process for the FIN furniture, however, involves paints, stains, solvents, and other toxic adhesives, in addition to sawdust and residual glue. Currently, the overhead is distributed based on direct labor hours. Forty five percent of this overhead is attributable to environmental costs. The traditional costing system does not distinguish between the two products and their effects on the environment. The UFIN division triggers few environmental costs, while the FIN division is responsible for the majority of them. Because the system now in place evenly distributes the overhead costs, management at Just Chairs receives inaccurate information regarding the profitability of each division. After applying the ABC method, Just Chair's management determined that the finished furniture line was actually

more costly to produce than originally calculated under the traditional costing method. With this new information, management may have to consider a new pricing structure.

#### New Technology Costs

Management is often confronted with the question of where to assign the costs of new technology. Many times environmental regulations require companies to make significant technological modifications to meet compliance requirements. Returning to the Just Chairs example, in order to avoid violating the Clean Air Act, management must install air emissions control equipment for the finished furniture paint spray booths. When deciding where to assign this new expense management has to avoid allocating the cost as a period cost, or worse, as part of general overhead. It is important for accurate decision making to assign the cost only to the finished goods division.

#### Scrap, Recycle or Reuse

With the information gathered in an EA, management can find products ready for recycling or reuse. Management must be creative when finding markets for their scrap and reusable refuse. For example, coal-burning electric utilities have found that there is a growing market for

fly ash. Fly ash is a noncombustible residual that results from burning coal. The chemical makeup of fly ash is quite similar to that of sand and is a good substitute for cement when making concrete. In response to this, electric utilities have tapped into the construction industry by marketing fly ash to contractors building bridges, roads, highways, and buildings. Costs and benefits are driven by the number of recyclable or reusable products, the quantity of the products, and the strength of the resale market. The cost or benefit may actually reduce a company's product costs. At Just Chairs, management could have chosen to employ a solvent recovery system that treats the used solvents and removes the paint byproducts. This system reduces hazardous waste disposal volumes so only residual wastes are hauled away. This results in a double savings: (1) Just Chairs saves on raw material costs as solvent is reused; and (2) waste removal costs are reduced. These costs savings are the result of an ABC system used in conjunction with an EA.

#### Green Investors

In a company's drive for profits, environmental concerns are often forgotten or ignored. Historically, the objections of the public were muted as they were also shareholders, just as interested in a healthy profit as

management was. Many firms are beginning to realize that they can be environmentally concerned and still earn a profit. In fact, it may prove immensely advantageous to be perceived as environmentally conscious when trying to attract investors. Nationwide, socially responsible investments (SRIs) now total \$65 billion, up from \$40 billion in 1984 (Walbert, 1992). For investors of conscience, environmental issues have surpassed South Africa and weapons as the most compelling issue when deciding where to put their money. But the environment is one of the hardest areas for which to get reliable information. Many emerging "environmentalist" mutual funds rely on EAs when deciding where to put their clients' monies. According to this investment philosophy, companies that avoid pollution problems also limit their risk of profit-sapping lawsuits and clean-up costs. And smaller companies that invent new environmental technologies offer the promise of rapid growth if the products are successful. Says John Schultz, director of the Social Investment Forum, an association of social investment advisors and managers, "If after reviewing a company's EA, we find a poor environmental record, we seriously consider shifting our assets to a more environment-friendly source" (Stern, 1993, p. 63). Schultz maintains that most of the environmentally



conscious investment funds that he tracks are keeping pace with, if not out-performing the more traditional funds. But it is the individual investor that firms should be most concerned with. As the baby boomers age, prosper and procreate, the ideas planted in their heads back in the seventies begin to reassert themselves. Leaving the planet a better place does not seem like such a bad idea when individuals are watching their own children grow. There are a significant number of options available for the socially conscious investor. Firms interested in attracting investment dollars from this new class of socially aware investor, will do well to have a clean environmental record, and the EA in place to prove it.

#### Sick Building Syndrome

A Caution Sick building syndrome is a collection of cold-like

To be sure, there will always be companies that put profit ahead of the environment. Just as there will always be individuals and communities willing to look the other way in order to preserve jobs and earnings. Fortunately, strengthening domestic regulations, coupled with the emergence of international standards, has made it increasingly difficult for companies to use other countries as a dumping ground for their unclean processes. these contaminants and this over-sight is costing businesses money in the following ways:



### Healthier and Safer Workplace

Despite upper managements' fascination and reverence for technology, labor remains an organization's most valuable asset. Protecting its employees from the ravages of the modern day work-place is essential to the profitability of any business. The more obvious dangers of industry, such as asbestos and nuclear waste, have been documented ad nauseam. In addition to these obvious work place hazards are some insidious pollutants from sources such as building materials and office equipment. A specially designed EA would pick out these contaminants and thus save a company, and its employees, the costs inherent in curing a "sick" building (Naj, 1995).

### Sick Building Syndrome

Sick building syndrome is a collection of cold-like symptoms that develop among people working in office buildings with sealed windows. It is caused by excessive outgassing of toxins from construction materials and modern office equipment coupled with energy-efficient, air-tight buildings (Naj, 1995). Scientists identified more than 1,500 bacterial and chemical indoor-air pollutants from such sources as carpet adhesives and fax machines. Buildings are not designed to effectively eliminate these contaminants and this oversight is costing businesses money in the following ways:

- (1) employee absenteeism,
- (2) worker's compensation claims,
- (3) lower productivity due to poor employee morale,
- (4) employee lawsuits.

The most common indoor air pollutants are carbon monoxide and nitrogen oxides. The more obvious sources of these toxins are from machines that did not exist 20 years ago:

- \*Ink/bubble jet printers--hydrocarbons, ozone.
- \*Laser printers--hydrocarbons, respirable particulates and ozone.
- \*Fax machines--ozone, volatile organic compounds (Naj, 1995).

The World Health Organization estimates that some 30 percent of all buildings have experienced sick building syndrome (Naj, 1995). The Occupational Safety and Health Administration (OSHA) has proposed a new law mandating strict ventilation guidelines to alleviate indoor air pollution. Industry needs to take a proactive stance in the face of this new call for regulation by OSHA.

### Changing Attitudes

To win the battle against toxins in the workplace, it will be necessary to change the American mind-set, which has historically focused on short-term profits rather than long-term consequences. Businesses need

to spend a little more money now to save money in the long-run. Some examples are:

- \* When buying paint, spend \$1 more a gallon and get paint that is less toxic.

- \* Explore purchasing new air-filtration and circulation systems.

- \* Put pressure on the developers of office equipment to come up with environmentally safe products.

Through an EA, management and the employees of a firm can gain a better awareness and understanding of the environmental issues inherent in their organization. With this insight will come the application of health and safety measures to improve the quality of the workplace.

#### EMAS

In addition to ISO 14000, the European Community (EC) has adopted an Environmental Management and Audit Scheme (EMAS) which aims to promote continuous improvement in the environmental records of industry in the EC (Sissell, 1995). Under EMAS, companies must implement environmental policies, programs and management systems at site level. To verify compliance with EMAS standards, the plan calls for periodic, systematic and objective evaluation by

independent auditors. These third-party verifiers will issue "green" report cards to interested parties.

INTERNATIONAL POLICIES

review. Although this policy is still voluntary, it has

In the spring of 1996, the Geneva, Switzerland-based International Standards Organization (ISO) will adopt ISO 14000. ISO 14000 contains a list of voluntary standards that integrate environmental responsibility into everyday corporate management (Powers, 1995).

It is hoped that these specifications and guidelines will ensure a uniform approach to environmental compliance by all kinds of companies worldwide.

Firms must eventually adopt such standards to win a critical ISO certification that will enable them to do business multinationally.

EMAS

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To verify compliance with EMAS standards, the plan calls for periodic, systematic and objective evaluation by



independent auditors. These third-party verifiers will issue "green" report cards to interested parties, detailing the results of their environmental review. Although this policy is still voluntary, it has found a broad depth of acceptance in the European business community. One reason suggested for this widespread use is that companies, for competitive reasons, have no choice but to comply with EMAS. If a company chooses not to follow the voluntary standards, they may lose market share to companies that have a green report card (Maxwell, 1990).

#### The Future of EC Business

As the business community continues to progress toward a truly global market, rules and regulations are no longer the specific concerns of each isolated country. Increasingly, there is an international set of rules by which all participants must adhere. It is vitally important that Americans be viewed as environmentally concerned if they wish to continue doing business in Europe. The EC is a force to be reckoned with. They are also ever on the look-out for ways to limit American businesses' influence in European markets. By assembling and acting on the information garnered in an EA, American companies can be prepared, environmentally, to do business anywhere in the world.



(6) Finance Department: Is environmental impact taken into account in all investment decisions?

(7) Production: AN EA PRIMER  
non-polluting alternatives considered?

When embarking on an EA, there is as much work done before the audit as during. Determining the scope of the audit is essential. Management must decide whether a limited or comprehensive approach is more appropriate. Also, they must prioritize issues such as compliance concerns or health and safety measures. Here are the main issues to consider when undertaking an EA:

(1) Preaudit Decisions: Decide the resources that will be needed and establish the training involved for those who will participate.

(2) Objectives: Define goals--What are we doing? Can we improve? Can we do more? Can we do it at a lower cost?

(3) Ascertain relevant regulations: Get in touch with local and federal regulatory bodies and find out what the laws are.

(4) Select Audit Team: Form an interdisciplinary team which can handle the issues involved.

(5) Documentation: Data needs to be collected in a common format. Keep working papers on everything that is done.

auditing service, it is just a matter of verifying the

- (6) Finance Department: Is environmental impact taken into account in all investment decisions?
- (7) Production: When replacing equipment, are non-polluting alternatives considered?
- (8) Operational Factors: Are the processes in compliance with area regulations? Is recycling and reuse in place?
- (9) Occupational Health and Safety: Does the company practice injury and accident prevention?
- (10) Reporting: As soon as they are identified, significant defects need to be reported.
- (11) Implementation: The decisions now become part of corporate policy (Vinten, 1991).

### Big Six and EA

At present, Coopers & Lybrand (C&L) is the only big six accounting firm to perform environmental reviews. It recently queried some 1,200 corporations, mostly in Western Pennsylvania, and had 60 companies respond favorably to the idea of environmental reviews. To review a company's environmental, health and safety report, C&L's auditors primarily interview key personnel and review their processes for collecting and presenting data (Olson, 1995). The director of this new service, Phillip Brooks, claims that it is much like any other auditing service, it is just a matter of verifying the

data. They have several engineers and scientists on staff at C&L which helps when reviewing the more technical aspects of some operations.

According to Brooks, almost every major corporation has begun issuing some kind of environment and/or health and safety report. EAs and environmental reviews are vital, new, market-driven attestation services that auditing firms should be prepared to offer if they wish to stay competitive.

Following is a partial list of the possible cost benefits from the proper use of the information

gathered in an EA:

- (1) More accurate assignments of costs to products.
- (2) Avoidance of regulatory fines.
- (3) Recycling, reuse and scrap savings.
- (4) Generate goodwill in the community.
- (5) Happy, healthy, productive work force.
- (6) The ability to compete on a global stage.

With all the advantages inherent in an EA the question is not can companies afford an EA but, rather, can companies afford not to have an EA.

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CONCLUSION

Clearly the interaction between the environment and business is a significant issue for companies of all sizes. From EPA regulatory compliance to global competitiveness the usefulness of EAs are obvious. Following is a partial list of the possible costs and benefits from the proper use of the information gathered in an EA:

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