

EDUCATING BUSINESS MANAGERS IN ENVIRONMENTAL CHOICES

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NARRATIVE SUMMARY

INTRODUCTION

This series of workshops presented a management perspective on ISO 14000, economics, accounting, and regulatory issues, all leading to a “Strategic Environmental Management” model of doing business. Presenters were faculty from the College of Business and Economics at New Mexico State University (NMSU), the Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), and environmental law specialists from the law firm Baker & McKenzie. The audience consisted of *maquiladora* managers from Ciudad Juárez. The workshops were held at the ITESM campus.

The purpose of Strategic Environmental Management is to minimize the inevitable negative effects of living and doing business while “putting the green back” or restoring the damaged and consumed resources to make them available for future generations. The goal of these efforts is to create economically and environmentally sustainable businesses. The term “sustainable” refers to processes which can continue into the foreseeable future with no apparent end. Some have called this “treading lightly upon the earth.” This seminar will address ways to tread lightly (to make businesses “green”) to benefit both businesses and the natural environment. In this way, children will have the opportunity to enjoy the same benefits which their parents have today.

RELATIVITY IN THINKING

It is not possible to live without having some destructive impact upon the earth. There are no absolutes in this process. There are costs and benefits to each action, each organizational strategy. The purpose of this session is to gain a better understanding of estimating the true costs of natural resources, the risks of environmental depletion, and the benefits of sustainable business practices.

PRODUCTION AND CONSUMPTION

The current problems of tremendous population growth are compounded by the greatly increased rate of resource consumption in modern society. The Industrial Revolution of the late 1800s brought an 800 percent increase in the amount of trade. Also, each person now uses 80 times as much energy and 36 times as much water as each person used only 100 years ago (Stead & Stead 1996).

WASTE

For solid waste alone, each person in the U.S. generates about one ton per year. Industrial solid waste is generated in the U.S. at a rate of one ton per citizen each month (Stead & Stead 1996). Landfills are reaching capacity and being closed at an alarming rate. The “greenhouse gas” carbon dioxide (CO₂) is emitted into the air faster than the earth’s processes can absorb it, contributing to global warming. The average U.S. citizen causes the release of five tons of CO₂ per person per year, a rate which is five times higher than the rest of the world’s rate of emissions (Stead & Stead 1996). The 10 warmest years ever recorded have all occurred since 1980 (Stead & Stead 1996). Half of the waterways in the U.S. are considered polluted. The New River, which flows through northern Baja California and Southern California, is considered among the most polluted river in North America (Stead & Stead 1996).

HEALTH HAZARDS IN THE WORKPLACE

One study found that workers in the oil, chemical, and nuclear industries die 10 years sooner than the average U.S. citizen (Stead & Stead 1996).

RESEARCH METHODOLOGY/APPROACHES

As firms progress beyond simple pollution prevention strategies, they may engage in “Life Cycle Analysis.” The six steps in a Life Cycle Analysis are:

1. Assess impacts of acquiring the raw materials and energy needed for production.
2. Assess impacts of the manufacturing process at all stages.
3. Assess the transportation system for getting products to market: distances, fuel, etc.
4. Assess consequences of product use: energy efficiency, durability, and polluting potential.
5. Assess the product’s potential for reuse or recyclability.
6. Assess the ultimate disposal of the product: toxicity, volume, and biodegradability.

FOUR TYPES OF INFORMATION NEEDED TO COMPLETE A LIFE CYCLE ANALYSIS

The Life Cycle Analysis is the most desirable method for making environmentally sound business decisions. This analysis incorporates the following four sources of information:

1. ENVIRONMENTAL MANAGEMENT INFORMATION SYSTEMS (EMIS)

- (a) Environmental data bases (government standards, the Toxic Release Inventory “TRI”).
- (b) Information processing capability (e.g., LEXIS) for computer modeling to assess environmental trade-offs.

2. FULL COST ACCOUNTING

- (a) Costs of treating contamination, including costs of toxin removal, neutralization, and prevention.
- (b) Externalities, (i.e., for a car, costs of potential air pollution, resource depletion, traffic congestion, and traffic deaths and injuries).

3. ENVIRONMENTAL AUDITING

- (a) An addition to financial audit.
- (b) Document progress on meeting environmental objectives and regulatory requirements; avoid financial liabilities; track benefits and costs of environmental programs; establish accountability; document good “corporate citizenship.”
- (c) Incorporate full cost accounting, cost-benefit analysis, economic feasibility analysis, technological assessments, and consumer surveys.

4. ENVIRONMENTAL REPORTING

- (a) Mandated reports such as the Toxic Release Inventory in the U.S.
- (b) Reports for stakeholder groups, covering problems as well as progress.

TOTAL QUALITY ENVIRONMENTAL MANAGEMENT (TQEM)

Based upon Total Quality Management (TQM), Total Quality Environmental Management (TQEM) builds upon the same basic principles as TQM. Both programs require broad involvement of workers in all areas of the firm, extending down to the lowest levels. One “total quality team” will typically include members from several departments and include line workers, supervisors, and management.

CASE EXAMPLE: AT&T AND TQEM

In 1990, AT&T adopted its Total Quality Environmental Management program. Some of the results of this TQEM effort were the development of BIOACT, a citrus-fruit product which AT&T was able to use instead of the toxic solvents it formerly used to clean electronic equipment and the development of a “low solid fluxer” so they could stop using CFCs in the production of their circuit boards.

DESIGN FOR ENVIRONMENT (DFE)

Designing for the environment implies that all environmental considerations are incorporated into the company's product design processes. Barvarian Motor Vehicles (BMW) currently recycles over 80 percent of the weight of their cars. One of their innovations is the substitution of solder and glue with fasteners so that bumpers may be recycled. BMW has a goal of 95 percent recyclability of its automobiles.

ENVIRONMENTAL MARKETING: PRODUCT STEWARDSHIP

Selling a product's environmental features can be a great appeal in today's market. This strategy is called "product stewardship." One example is Patagonia, which has a clothing line made entirely of recycled plastic pop bottles. Research suggests these environmental marketing strategies do make money for companies. Of 167 industrial firms surveyed, 60 percent said such marketing strategies had a positive effect on revenues while only eight percent said they had a negative effect on revenue.

ENVIRONMENTAL MANAGEMENT STANDARDS

By becoming certified through one of the voluntary standard setting programs, companies show their adherence to stricter environmental standards, insuring their shareholders and customers alike that their environmental management practices meet and exceed expectations. A listing of some of these standard setting organizations (ISO 14000 and others) is available from the Principal Investigator.