



STUDENT ASSIGNMENT #4: Eco-Integrated Portfolio Analysis

Most companies are portfolios of businesses or products, each with its own potential. Rather than being monoliths, companies are composed of quasi-independent parts, each of which has internal strengths and weaknesses and external attractiveness.

A favorable external context usually means that a company is in an attractive industry where growth rates are high. If internal forces are positive, the company should be able to capture a large relative market share. In a simple matrix, external attractiveness is seen as a function of the industry's market growth, while internal strength is viewed as a function of relative market share (see figure in Hax and Majluf, p. 132).

Thus, a firm's businesses or products can be aligned as:

- "stars" with high industry growth rates and high relative market share;
- "cash cows" with low industry growth rates and high relative market share;
- "dogs" with low industry growth rates and low relative market share; and
- "question marks" with high industry growth rates but low market share.

Dogs should be divested. Resources should move from the "cash cows" to the "stars"; if warranted, investments should be made in the "question marks."

Ilinitch and Schalteger have proposed using a modified business portfolio approach for doing "eco-integrated" analysis. They compare pounds of pollution, units of pollution (pounds times the indexing factor), pounds per \$1,000 in sales, and units per \$1,000 in sales for six major world-wide chemical manufacturers (pp. 32-35). All of the steps in the process are difficult, including determining how many kilograms of pollution are emitted, but weighing the environmental harm is especially problematic. The hard part is getting at the

environmental impact, the pollution per unit of product. The conversion factors Ilinitch and Schalteger use for chemicals come from the U.S. Environmental Protection Agency's Toxic Release Inventory (TRI). They are based on U.S. standards (p. 29). Alternative conversion factors could be used. Another indexing methodology, provided by Pratt et al. (1993) orders the harmfulness of these toxic chemicals slightly differently.

Obviously, the information contained in the DuPont case doesn't provide enough background for conducting the vigorous type of analysis proposed by Ilinitch and Schalteger. Rather, you can divide up DuPont's business segments and roughly calculate the business promise of each and the environmental harm that they cause, especially in light of the likely passage of the Clean Air Act. Then, try placing each of DuPont's business segments into one of four quadrants: "green star," "green question mark," "black cash cow," and "black dog." Based on this placement, you should be able to begin to think about which segments should be discarded, if possible, and which deserve investment, which segments have little or no future, and which can be improved either from an environmental or business perspective.

BACKGROUND ON OZONE DEPLETION

Chlorofluorocarbons (CFCs) were invented by Thomas Midgley, Jr. in 1930 as cooling agents for the Frigidaire Division of General Motors. CFCs are chemically stable, low in toxicity, and nonflammable. For many years they were believed to be completely safe, and hundreds of applications for them were found. Sold under trademarks such as Freon (made by DuPont), CFCs are used as aerosol propellants; coolants in refrigerators and air conditioners; cleaning solvents for electronic components; and foaming agents in the manufacture of furniture and mattresses, styrofoam, and building insulation. Despite the fact that the U.S.

banned CFC use for aerosol propellants, about one third of all CFCs in global use are produced and consumed in the U.S.

Substantial evidence indicates that CFCs are harming the ozone layer of the stratosphere, the upper atmosphere 15–30 miles above the earth. Stratospheric ozone, which acts as a shield by absorbing radiation from the sun, allows only safe levels of ultraviolet rays to reach the earth's surface. Although estimates of ozone depletion caused by CFCs vary, even conservative estimates raise serious concerns about increased levels of surface radiation as the earth's protective shield is reduced. Estimates range from a low of about 4% to a high of more than 31% depletion. A 5–7% increase in skin cancer is expected for each percentage decrease in ozone. Other potential destructive effects are likely to be increased incidence of cataract formation, reduction in crop yields, weakening of the marine life food chain, and weakening of materials such as plastics.

The Montreal Protocol called for a freeze at 1986 levels of the most harmful types of CFCs. The aim was to achieve a 50% reduction in 10 years. The 1989 London agreement superseded the Montreal Protocol and called for a total ban of CFCs by the year 2000. A \$200 billion fund was established to help developing nations adjust.

The impact of ozone depletion is global in nature, and, therefore, unpredictable as to its full implications. Because our understanding of global ecology is still so limited, environmental effects on a global scale, such as CFC emissions and the greenhouse gas buildup can result in unforeseen and perhaps discontinuous consequences that could put large populations on the planet at risk.

Assignment

Read "DuPont and the Clean Air Act of 1990" (M. Jankus, in *Business and Society: Strategy, Ethics, and the Global Economy*, ed. A. Marcus; Chicago: Irwin, 1996; 94–105.

Questions

Using the concept of eco-integrated portfolio analysis, analyze the challenges that DuPont faces. How should it respond to the likely passage of the Clean Air Act?

1. What challenges will the Act's passage pose?
2. To what extent are these challenges threats?
3. To what extent are they opportunities?
4. What businesses should DuPont consider entering? What businesses should it consider exiting? Where should it invest? How? Where should it stop investing?
5. What strategies should it have for the businesses it enters?
6. What can DuPont do to convert the challenges posed by the Clean Air Act into opportunities for business gain?

SOURCES

Ilinitich, Anne, and Stefan Schaltegger. "Developing a Green Business Portfolio." *Long-Range Planning*, no. 2 (April 1995): 29–38.

Hax, Arnoldo, and Nicolas Majluf. *Strategic Management: An Integrative Perspective*. Englewood Cliffs, NJ: Prentice Hall, 1984.

Marcus, Alfred, ed. *Business and Society: Strategy, Ethics, and the Global Economy*, ed. A. Marcus; Chicago: Irwin, 1996; 94–105.

Pratt, Gregory, Paul Gerbec, et al. "An Indexing System for Comparing Toxic Air Pollutants Based Upon Their Potential Environmental Impacts." *Chemosphere* 27, no. 8 (1993): 1,359–1,379.

Sturm, Andreas, and Stefan Schaltegger. "Eco-Controlling for Environmental Management." From the United Nations' *Proceedings of the 1995 Seminar on Environmentalist Business Management*; available on the Web at inetserv.ait.ac.th/AIT/som/as/ec/index.html