

ECOCENTERING STRATEGIC MANAGEMENT

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Ecological problems caused by corporate products and production systems have become wide spread and serious. Consequently companies are facing new customer demands, public pressures, and government regulations, for environmental protection. In traditional Strategic Management theories and practices, ecological problems are treated as “externalities” of production, that should be addressed through government regulations and public policies. Management researchers and practitioners, have failed to seriously incorporate ecological variables into firm strategies and management decisions. This weakness of Strategic Management needs to be remedied because ecological issues are rising to strategic importance globally, and domestically.

To understand the strategic significance of ecological issues, consider four important trends linking corporations and ecology. First, *the rise of environmentalism is changing the nature of competition in industries that are resource intensive, energy intensive or pollution intensive*. Environmentalism has tilted consumer expectations and preference toward environment friendly products (Ottman, 1992; Gallup International 1992). New environmental protection regulations are changing the cost of doing business. Just the 1992 Clean Air Act (revision) alone, will require an additional \$50 billion new investment into cleaner production, pollution control and waste management technologies (Smart, 1992; Smith, 1992).

Second, ecological variables are increasingly being used to establish competitive advantage. Companies are using “green” products and packaging to create product differentiation and win customer loyalty. They are saving costs through waste minimization and recycling, and energy and material conservation (Stead and Stead, 1992; Shrivastava and Hart, 1994; Smith, 1992). They are reducing environmental risks and product liabilities through product integrity and stewardship programs. Environmental product markets offer major market opportunities and are expected to be over \$200 billion per year in this decade (EPA, 1990).

Third, it is now widely acknowledged that *to ensure ecological stability, the world economy will have to pursue ecologically sustainable economic development*. Past and current patterns of economic development are ecologically unsustainable. Energy intensive, natural resource intensive, pollution intensive, and urban biased industrialization has spawned numerous ecological crises. Examples include, global warming, ozone depletion, depletion of natural resource,

decline in biodiversity, toxic wastes, nuclear radiation, major industrial accidents, and widespread air and water pollution (Brown, et al. 1991; Constanza, 1992; Daly and Cobb, 1989).

In the next 35 years world population will double to 11 billion people. World wide total of GNP currently at \$20 Trillion, will have to increase five to thirty times to provide basic amenities to this increased population. This level of economic production with existing technologies, is ecologically unsustainable. If economic, industrial and corporate strategies of the past are continued into the future, they will threaten the survival of ecosystems, destabilize economies and nations, and make corporations unviable. Industrial products, production systems, and waste management practices, are at the root of ecological threats. Averting global ecological disaster will require fundamental transformation in these products and systems (Commoner, 1990; Gore, 1992; Daly and Cobb, 1989; Graedel and Crutzen, 1989).

Finally, corporations as owners of industrial facilities face enormous expansion of technological and environmental risks. They are liable for damages emanating from products, manufacturing facilities, and storage and transportation. The public is alarmed by these risks. Through the NIMBY (Not-in-my-backyard) movement, communities are resisting the influx of new technologically and environmentally risky activities at over 7,000 locations around the United States (Brion, 1992; Portney, 1992). If these risks are not managed effectively, corporations risk expanding protests, bad publicity, loss of business, and perhaps delegitimation (Beck, 1992).

These trends raise important analytical questions about how to build more competitive corporations in the ecology-sensitive social and political environments of the future. They challenge the long term feasibility of existing corporate missions, strategies, production systems and waste/pollution management practices. They suggest the need reorienting Strategic Management to address ecological problems. In this paper suggestions for such reorientation are developed by examining the limitations of our assumptions about Strategic Management, and strategies of ecologically leading companies.

The purpose of this paper is to analyze how corporations can develop strategic postures more consistent with ecological trends. The next section examines the limitations of traditional Strategic Management assumptions in dealing with ecological issues. This is followed by two mini cases of companies that are attempting to make ecology the cornerstone of their strategies. Grounded in the experiences of these and other companies, the next section proposes an *ecocentric approach to Strategic Management*. The paper ends with a discussion of research and practical implications of ecocentric strategic management.

Limiting Assumptions of Strategic Management

Strategic Management is the study of firms in relation to their environments. It deals with issues of defining the firm's missions, product/business portfolio,

its markets, its identity, its competitive strategies, and resource allocations. It involves formulation and implementation of strategies to achieve competitive success and societal legitimacy (Hofer and Schendel, 1978; Galbraith and Kazanjian, 1986; Schendel and Hofer, 1979).

Today, the central theoretical problematic of the field is *management of the total enterprise effectively, in relation to its changing environments*. The enterprises of concern to this paper, are private corporations operating in quasi free market economies (Andrews, 1970; Ansoff, 1979; Bower, 1967; Chandler, 1962). Schendel and Hofer (1979) articulated a synthetic Strategic Management paradigm. They defined the field in terms of tasks involved in formulating and implementing strategies for corporations. The central organizing concept is that of *strategy*. Strategy is a statement of *ends* (goals) and *means* for achieving these ends. Strategies consist of a set of goals, strategic programs for achieving goals, and resource allocations for implementing strategic programs. Through strategies firms align their internal resources with environmental demands to ensure long term effectiveness (Chandler, 1962; Porter, 1985; Prahalad and Hamel, 1990).

The functional tasks of strategic management include analysis of the environment, creating organizational goals, formulating strategies at corporate and business levels, designing organizations to implement strategies, and strategy evaluation, monitoring and control. In the past decade, strategic management research and teaching has revolved around studying these tasks conceptually and empirically (Shrivastava, Huff, and Dutton, 1992; 1993).

While “environment” is a concept central to the field, strategy theory and practice have ignored “ecology” or “natural” or “biophysical” aspects of corporate environments. The reasons for this are four limiting assumptions underlying the strategy field.

1. *The Firm as an Economic Entity*

Strategic Management borrows its view of the firm from neo-classical economics. The firm is treated as an essentially economic entity, operated by rational humans (*homo economicus*), for wealth/profit maximization, within free markets. In this view the main purpose of corporations is to produce goods/services and maximize financial performance, within a framework of market and regulatory forces.

This view of the firm denies the substantially social, cultural and ecological nature of firms suggested in ecological economics (Constanza, 1992). It adheres to “rational actor” assumptions in the face of contrary evidence that indicates the social, emotional, and cultural influences on decision making (Trice and Beyer, 1993). It adheres to “free market” assumptions, in the face of frequently contrived, partially regulated, and historically determined nature of markets (Daly and Cobb, 1989). It under emphasizes the multiple and often conflicting demands of organizational stakeholders (Freeman, 1984).

2. *Investor/Growth Biased*

The traditional strategy approach favors the interests of investors, over other stakeholders of the firm. It seeks to create organizations that maximize the value of the firm for its owners. This is consistent with traditional neoclassical economics model. But it becomes problematic under communitarian and ecologically oriented models of economics and society (Etzioni, 1988; Constanza, 1991). Such models recognize the legitimacy and primacy of non-investor stakeholders, particularly of the community and ecology.

This is not to say that Strategic Management completely ignores other (non investor) stakeholders. It does acknowledge the need to meet changing demands of society. The stakeholder approach to strategic management explicitly acknowledges customers, suppliers, government, business associates, the public, and communities as important stakeholders (Freeman, 1984; Preston, 1985; Quinn and Rohrbaugh, 1983). However, non-investor stakeholders are given a secondary status. Moreover, ecological problems become strategic issues only if they affect some social constituency of the firm (Mintzberg, 1991). In this translation, the most fundamental ecological problem—"the commons dilemma" (how to protect unowned, common use, natural resources, such as air, water, etc.) becomes a non issue.

The stakeholder view of the firm is instrumentalist. It acknowledges stakes in nature for the purpose of the firm's survival. Only that part of nature that is useful for the firm, receives attention. Accordingly, energy and oil companies are concerned about depletion of oil, forest product companies about deforestation, and marine product companies about over fishing and marine pollution. Their concerns are self motivated, and have little to do with conservation of nature or ecological sustainability.

3. *Denatured View of the Environment*

Strategic Management has historically used a concept of "organizational environment" which emphasizes the political, social, technological, and above all, economic aspects of the environment. It ignores the natural biophysical environment.

Organizational environment is portrayed as abstract, disembodied, ahistorical, external influence on the organization. Environment is seen as a resource to be used by organizations. The emphasis is on understanding how environments influence organizations, as well as how organizations can procure, exploit or compete for environmental resources. The reverse relationship—how organizations impact their natural environment—however, has received very little attention (Shrivastava, 1993, Throop, Starik, and Rand, 1993).

To address ecological issues the field needs a concept of environment that includes the biophysical world. The relevant environment of firms, is an *economic biosphere*, which includes not only economic, social, and political elements but also biological, geological, and atmospheric ones. The environment relevant to corporations consists of 1) the ecology of the planet Earth; 2) the

world economic, social, and political order; and 3) the immediate market, technological, and socio-political context of organizations.

4. *Anthropocentrism*

Like much of social science today, traditional Strategic Management is anthropocentric. It is based on the assumption that human and social welfare is the sole purpose of social institutions, including corporations. In this view nature is subservient to human welfare. It is seen to exist only to further the interests of humans. Corporations as human agencies thus have a right to exploit nature without any real concern for maintaining its integrity. Preservation of nature is meaningful only as a condition of human self-interest. That means nature may be protected and conserved so that humans may maximize their use of it, now and in the future (Pauchant and Fortier, 1990).

In recent years anthropocentrism has been widely criticized. It is argued that nature has a right to exist for its own sake, not just for human welfare (Nash, 1989; Naess, 1987). This argument creates a new ethical demand on humans and corporations. It establishes a moral responsibility for preserving the integrity of natural systems. It places humans and corporations in a stewardship relation with nature (Shrivastava, 1993; Stead and Stead, 1992).

To summarize, traditional Strategic Management working under the neo-classical economics paradigm, under emphasizes ecological issues and their implications for corporations. It views environmental impacts of corporate activities as an “externalities,” suitable for regulatory and public policy actions. It overlooks how these issues shape the competitive dynamics of industries. It relegates social and ecological performance to secondary status and focuses predominantly on financial performance of firms.

While theory lags, practice suggests some new models of management that seek to overcome the above limitations. Several corporations are pursuing ecology-sensitive corporate and competitive strategies. In the next section, two mini cases of Procter and Gamble (PG) and The Body Shop (BS) are presented. These cases will be used to ground a model for ecocentering Strategic Management in the following section. The purpose of these mini cases is limited to introducing some strategic ecological practices to illustrate the practical feasibility of ecocentric Strategic Management. These cases were selected not because they are representative of industry practices, but instead because they represent “strategic” examples of the ecocentric model that this paper seeks to articulate. These companies are not completely ecocentric yet, but are reorienting themselves in that direction.

Mini Case Studies

Both PG and BS are consumer products companies with significant business in personal care products. Both are publicly owned companies traded on international stock exchanges. Both are successful by conventional market and accounting

measures. Both are market leaders in their product-market categories, and have had greater than industry par profits and sales growth for the past four years.

Data for the cases was collected from published media and company sources, and personal interviews with company managers. Due to their unusual environmental and social policies, these companies have been extensively reported on in the media (Shrivastava, 1996). They have also produced a large number of internal documents explaining these policies. Anita Roddick has published her autobiography and company history in *Body and Soul* (Roddick, 1991).

The fact that both companies are in the same industry limits the generalizability of their experiences to other industries. However, the purpose of offering these examples is *not generalizability, but rather establishing feasibility* of ecocentric management practices.

Procter and Gamble

PG is an excellent example of a large main line company that has made environmentalism a basic tenet of its strategy. It operates in 52 countries including the United States. It employs over 106,000 people worldwide, and its products are found in almost every household in the United States. It manufactures personal care and health care products, food and beverage products, laundry and cleaning agents, and chemicals. It also provides commercial supply services in these product areas. Financial summary for the past five years is presented below.

PROCTER & GAMBLE FINANCIAL SUMMARY

Year	Sales	Net Income	EPS
1993	30.43	-0.65	-1.11
1992	29.36	1.87	.62
1991	27.02	1.77	2.46
1990	24.08	1.60	2.25
1989	21.39	1.20	1.78

Sales and Net Income in \$ billions, EPS = Earnings per share in \$

The 1993 net income (loss) resulted from one-time special restructuring charges together with mandatory non-cash accounting changes. Without these unusual charges net earnings would have been 11% higher than previous year.

At PG environmental responsiveness is critical to the company's central mission of satisfying consumer needs. Its greening efforts began as a response to consumer demands for environmentally safe packaging. This is no surprise for a company that spends over \$1.4 billion in packaging per year.

Its success in redesigning product and packaging to help environmental problems was widely appreciated at all levels. Middle management was very enthusiastic about being environmentally responsive. On their initiative, and with the blessing of the then CEO John Smale, PG adopted an Environmental Quality Policy. This policy brought environmental responsiveness to center stage at PG:

Procter & Gamble is committed to providing products of superior quality and value that best fill the needs of the world's consumers. As part of this, PG continually strives to improve the environmental quality of its products, packaging and operations around the world.

The Environmental Quality Policy and Mission Statement of the company provided the guiding framework for corporate wide greening. Having green products and packaging was not enough. To be credible with consumers, it was important to make environmental responsiveness the cornerstone of the company's strategy. It did so by making ecology a central variable in its brand management strategy. Each brand manager is responsible for all aspects of his/her brand's performance, including ecological performance.

The company strongly believes in "doing the right thing." "Right" is judged by scientific and technological knowledge standards. The company makes enormous efforts to develop scientifically grounded environmental solutions. For example, in the 1970s it spent \$130 million to research and develop low phosphate detergents.

PG is a well managed company, with highly developed systems and routines for all environmental activities. It uses a "systems approach" to establishing environmental programs. It does periodic environmental audits, needs assessments, environmental impact assessments, risk/benefit analyses, project planning, environmental pilot programs. There is a "matrix" structure for environmental activities, ensuring both line and functional oversight over them.

The centerpiece of its environmental strategy is the Total Quality Environmental Management Program that includes energy conservation, resource reduction, pollution elimination, waste reduction, recycling, and composting. The program systematically and comprehensively deals with ecological issues in an integrated manner.

TQEM seeks to conserve materials and energy. PG restricts the use of controversial materials where alternatives are available. It also encourages the use of recycled inputs where possible. In choosing environmentally sound designs and materials. It developed a technology that replaced a significant amount of the wood pulp in diapers with a super-absorbent gel. This enabled the company to reduce the use of wood pulp. The resulting diapers weigh less, cost less to transport, and require less landfill space.

Since the oil crisis in the 1970s, PG has established many energy conservation programs. It encourages the use energy efficient buildings. It does preventive maintenance of light fixtures and electric equipment. Its energy conservation programs have targeted two of its most energy intensive products—paper and dry detergents. Waste pulp from paper mills is converted into pellets and burned as fuel. In another effort to conserve energy, PG uses co-generation. It generates energy and reuses the steam for heating. Burning waste products is another source of energy for several PG plants. These programs have reduced energy costs from 4% to 2% of production costs.

Plant Level Environmental Programs are central to TQEM. TQEM guides the analysis of waste water content, treatment options, and opportunities for using recovered products. The company recovers clean water and reusable heat by using simple technologies of heat absorbers, filtration, and sedimentation.

PG emphasizes its transferring "best practices" to plants world wide. For example, one soap plant in Venezuela devised a zero-discharge production process, to deal with water shortage in an arid environment. There was not enough water pressure in the municipal water supply lines to get it up the hill where the plant was located. And, there were no sewers to discharge the waste water. So the plant operators devised a zero-discharge water recycling system to conserve water. Their techniques were shared by PG plants around the world.

TQEM also focuses on greening outputs of products, packaging and wastes. Products/packages are designed to pre-established ecological standards. Market pre-testing provides additional data for modifying designs before introducing the products into markets. Product specifications are finalized after several iterations of design, prototype development, and pre-testing. Before launch, products are tested by peer groups for safety and environmental concerns.

PG's environmental vision includes reducing waste to an absolute minimum through the cooperation of all stakeholders. It has an integrated solid waste management policy that combines recycling, reuse, and composting. Landfilling is regarded only as a last resort.

Taking cues from successful European programs, Procter and Gamble promotes composting as an important part of any municipal solid waste program. It educates the public about the benefits of composting. The main benefit is that up to 60% of materials in landfills can be composted. At the beginning of 1993, there were 20 municipal composting facilities in the United States. Another 200 facilities are in various stages of planning.

PG pledged \$20 million to solid waste composting projects. With these funds, it is helping develop the infrastructure that will make composting feasible for communities. PG is involved in end use research for composted materials. With the U.S. Bureau of Mines, PG is investigating the uses of compost as a means of recovering stripped lands.

As part of its integrated waste management program, PG has focused on source reduction. To minimize garbage, PG offers products in refill pouches. It has enlisted the help of bottle makers to develop an international labeling system for recyclable bottles.

Waste management at production plants is part of the TQEM program. Each facility is responsible for minimizing polluting emissions and wastes. Continuous surveillance is maintained through the monthly reports that are sent to the corporate environmental department.

People are a key ingredient of success in PG's environmental activities. The company hires the brightest and the best. Through a decentralized organizational structure it gives them responsibility and authority to act on ecological issues. Middle managers initiate most of the environmental programs. They analyze programs and discuss them in committees before implementing them.

Top management acts as a benign patron for innovative environmental programs. It does not dictate them. But when top management hears of good ideas it nurtures them, sanctions resources for them, and gets out of the way of implementors.

Top managers set a good example by committing their own time to environmental activities. For example, John Smale lead Cincinnati's effort to rebuild the city's infrastructure and urban environment. Top management commitment for the environment is reflected in the appointment of top management people to environmental issues - VP Environmental Affairs, and Director Environmental Engineering & Quality Programs.

PG builds partnerships with its stakeholders to implement environmental programs. It cooperates with local partners such as city government, schools, suppliers, retailers, customers, and legislators to establish environmental projects. It financially supports partnerships such as the Solid Waste Composting Council. It works with existing groups such as the Conference of North East Governors. It pioneered the Global Environmental Management Initiative. This is a partnership among twenty leading companies for business-to-business exchange of best environmental management practices.

These activities reflect a serious commitment to improving its environmental performance. However, P&G is by no means a perfect ecocentric company. It lags in many areas and has much scope for improvement in all aspects of its functioning. It still produces many ecologically unjustifiable products (e.g., disposable diapers), in ecologically unhealthy packaging (e.g., plastic bottles and boxes), and has ecologically harmful (e.g., pollution into rivers) production practices.

The Body Shop

Anita Roddick, opened the first branch of The Body Shop on March 27, 1976 in Brighton, England. The company sells all natural personal care products in environmentally and socially conscious ways. By 1992, The Body Shop International PLC was operating in thirty nine countries, with six hundred stores worldwide, and six thousand employees. Its 1991 revenues were \$208 million and profits \$36 million. Its revenues, profits, and earnings per share grew at over 30% per year for the past three years.

The company's sells only *environmentally safe natural products*. It makes products that cleanse, polish, and protect the skin and hair. Natural ingredients are at the heart of every product. Ingredients include traditional plants, herbs, fruits, flowers, seeds, nuts, oils, soils, water, and juices. All ingredients come from renewable resources. This has given it a unique position in the cosmetics industry.

The company goes against the grain of every basic tenet of the cosmetics industry. Its products are all-natural in an industry dominated by chemical concoctions. The company made its entry with a single store, and no financial backing, into an industry full of giant firms. It has never spent a single cent on advertising in an industry that spends nearly twenty five cents on the dollar on

advertising. Unlike most cosmetics companies, The Body Shop does not do animal testing of its products. It actively opposes and campaigns against animal testing, because it believes that animals should not suffer for human vanity.

Its basic business strategy is to supply what is natural and healthful, to people who want it, in quantities they need. The company makes business choices on moral grounds. The core business lies in the idea of fair and honest trading. Trading in which both partners benefit. Trade that continually seeks new partners among needy groups. Trade that makes these groups self-supporting. Roddick's two basic values of *work* and *love* guide the company. These values have fostered a strong sense of commitment to employees, customers, suppliers, the natural environment and humanity.

The company believes that the main products of the cosmetics industry are packaging and waste. It goes in the opposite direction by eliminating all unnecessary packaging. It refills or recycles what cannot be eliminated. Package designs follow three criteria—product compatibility, strength over useful life, and safety. It encourages customers to refill supplies by offering a twenty five cent discount on each refill.

The Body Shop is primarily a retailing and trading company, and manufactures only some goods it sells. Therefore, it does not face the traditional pollution problems associated with heavy manufacturing businesses. What it manufactures, it does with a social purpose and with simple and small scale technologies.

The company's plants are energy efficient, and aim at zero discharge. Its energy conservation objective is to use zero energy from fossil fuels. But since it draws power from the traditional electrical utilities, it has decided to "return" the electricity from natural sources. It has established wind energy farms in Scotland (where it does not have a plant, but has excellent wind) to generate wind energy. This energy is fed back to the electrical grid

The company aggressively promotes recycling and environmental education through its stores. It makes recycling of containers convenient for customers, and gives financial incentives in the form of purchase discounts and deposits on returned containers. The stores carry educational brochures on environmental problems and campaigns. Store personnel politely encourage customers to get involved in environmental programs.

Perhaps the most outstanding feature of the company's environmental programs is the empowerment of employees to take environmental actions. This empowerment is institutionalized in the job contract. The contract requires each employee to doing environmental projects within the company or in their respective communities. Formalizing environmentalism in the contract sends a very strong message about the desirability of environmental actions.

The Body Shop has woven together a unique vision, an unusual culture, exceptional employees and creative environmental products into an environmentally responsible competitive strategy. It has a vision of being not just a business, but a business with a social purpose. Its social, ecological, and developmental activities are as important as (perhaps more important than) its financial profitability.

There are many areas in both PG and BS, that can be improved. These mini cases do not imply that these companies are perfect. In fact, to my knowledge no company fulfills the ideal of ecocentrism. The purpose here was to show the many ecocentric actions that companies can take, and that these actions do not necessarily conflict with profitability and competitiveness.

These cases serve as a basis for articulating a model of strategic management that centers on ecological performance. Such a model both raises important research questions for the field and can serve as a guide for practical changes.

Ecocentric Strategic Management

As the term implies, ecocentric strategic management places ecology at the center of corporate and management concerns, rather than at their periphery. This type of management seeks to achieve growth and profits. But growth that is ecologically sustainable. And, profits that are ethically defensible. Ecological sustainability here refers to growth that is mindful of the finite and limited natural resources available on earth. It is development that moderates the pace of industrialization and resource consumption. It seeks to fulfill needs of the current population, without jeopardizing the needs of future generations (Schmidheiny, 1992; World Commission on Environment and Development, 1987).

This section presents an ecocentric approach to strategic management. This is done in two parts. First, I identify the value creating potential of ecological variables. Then I contrast ecocentric strategic management with traditional strategic management on critical organizational dimensions.

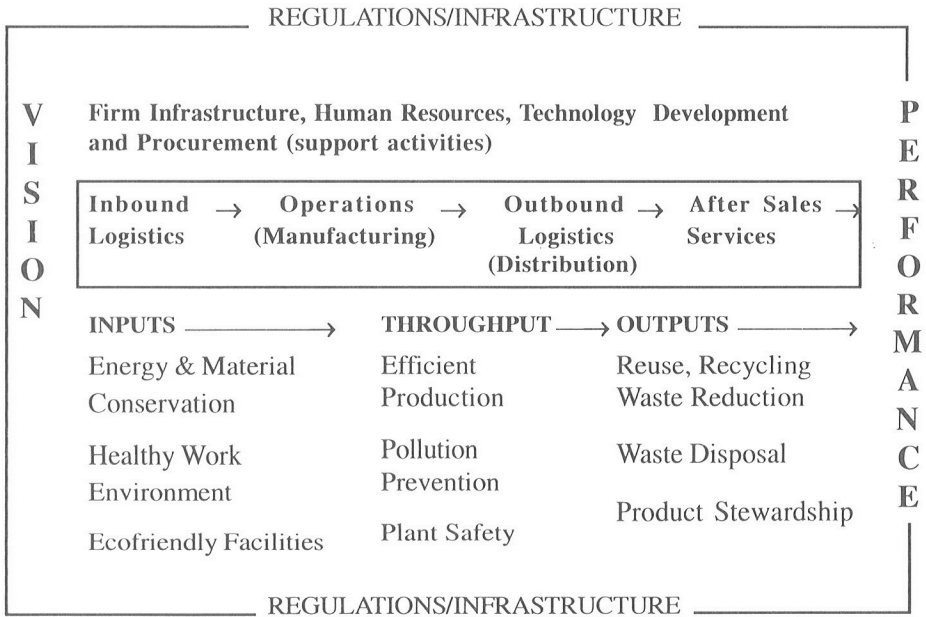
Value Creating Potential Of Ecological Variables

Strategy theorists have pointed out the importance of the economic value chain and core competencies for creating competitive advantage (Porter, 1980; 1985). Ecological variables affect virtually all elements of the firm's economic value chain, and consequently its profitability and competitiveness.

Figure 1 (p. 34) adapts Porter's (1985) description of the value chain consisting of inbound logistics, operations, outbound logistics and after sales activities plus support activities. These are overlaid on a systems model of organizations consisting of **V**ision, **I**nputs, **T**hroughputs, and **O**utputs (VITO). Organizations represent groups of individuals united by common **vision** and objectives, converting **inputs** (resources, energy, labor) into **outputs** (products, packaging and wastes) using a **throughput** system (manufacturing, transportation, storage, administrative systems, etc.). The lower part of the figure depicts the ecological benefits that can be derived at each stage of the value chain. Organizations operate within economic, social and political environments manifested in regulations.

FIGURE I

Value Creating Potential of Ecological Variables



Both competitiveness and profitability, are a function of costs and revenues. Costs include all types of inputs,—raw material, energy, labor, transportation, logistics, and administration. These input costs are influenced by several ecological considerations. Raw material costs are affected by scarcity of non-renewable resources. Cost of waste disposal is affected by the overall capacity of ecosystems within a bioregion to serve as sinks for waste. Additional costs may be imposed by environmental protection regulations. Companies may also incur indirect costs by paying for health effects (on employees and the public) of ecological degradation.

Cost savings can be obtained by managing inputs, throughputs and outputs in an ecologically efficient manner. Such efficiencies are derived by conserving energy and materials, providing healthy working conditions, adopting cleaner production, minimizing transportation, reducing wastes, recycling resources, and eliminating pollution (Schmidheiny, 1992).

Revenues are a function of price, demand, and market shares. With the “greening” of consumers, ecological considerations can be used to manage all these determinants of revenues. Consumers are willing to pay higher prices for eco-friendly products and less packaging (which reduces disposal costs) (Gallup International 1992). Recovering resources after products are discarded through disassembly and recycling can be a source of revenues.

In the next century, environment and energy related products will displace defense products as the largest sector of the world economy. They will constitute nearly 40% of world economic production, opening up dozens of new markets (MITI, 1992).

Both on cost and revenue sides, the strategic potential of ecological issues is vast. However, the motivation to exploit this potential depends to some extent on regulations and infrastructure of environmental services. The time required to exploit ecology related opportunities is very long—often beyond conventional strategic planning horizons. It involves development of new technologies, and new market infrastructures. The pay-back periods for such investments are much longer than considered normal by capital markets. Consequently, companies are unwilling to make such investments and take the long term risks. Conventional strategic planning with its 5 year planning horizon, is inadequate for addressing longer term ecological issues. Consequently, companies deal with ecological issues reactively, in response to regulations. The quarterly and annual profit pressures from investors, compounds the tendency for short term thinking (Shrivastava, 1996).

Companies need incentives and supporting infrastructures that will make long term ecologically sensitive strategies feasible. Government economic and industrial policies play a key role in providing this support system. Companies may need to find new ways of relating to government regulations to facilitate creation of enabling regulations. Interorganizational cooperative strategies may be necessary for creating these regulations.

Japan provides an example of how such a system may be organized. The government (Ministry of International Trade and Industry, and Ministry of Finance) plans for longer (50 to 100 year) time horizons. MITI sponsors dozens of corporate consortia, joint ventures, and research institutes, to develop energy and environmental technologies for the next century. Without such state facilitation, US and European companies remain at a competitive disadvantage.

Ecocentric v/s Traditional Strategic Management

In all the critical organizational elements of vision, inputs, throughputs and outputs (VITO) traditional strategic management differs from ecocentric strategic management. Table 1 (p. 36) is an attempt to depict these differences and their implications for business strategies.

The two ideal types depicted in the Table 1, are not meant as opposing polarities. No company that I know lies at these polar extremes. The ideal types are an analytical device that highlights the diverse approaches to dealing with ecological issues. The two types of approaches reflect complex, dialectical and dynamic expressions of constitutive organizational dimensions. An organization can be traditional on some dimensions and ecocentric on others. Organizations continually struggle to adjust and balance each dimension to the demands of their stakeholders.

TABLE 1

TRADITIONAL VERSUS ECOCENTRIC STRATEGIC MANAGEMENT

*Traditional Strategic Management**Ecocentric Strategic Management*

VISION/VALUES

Economic Growth & Profits
Shareholder Wealth
Anthropocentric
Rationality
Patriarchal Values

Sustainability and Quality of Life
Stakeholder Welfare
Ecocentric
Intuition
Feminist Values

INPUTS

Exploit Raw Materials Markets
Energy Intensive Technologies
Labor Productivity Improvement

Renew Raw Material
Energy Conserving Technologies
Meaningful Work and Human Asset
Development

THROUGHPUTS

Technologically Efficient Manufacturing

Environmentally Conscious Manufacturing

Organization

Hierarchical Structure
Top-down Decision Making
Centralized Authority
High Income Differentials

Non-hierarchical Structure
Participative
Decentralized
Low Income Differentials

Environment

Domination Over Nature
Environment Managed as a Resource
Pollution and Waste are Externalities

Harmony with Nature
Resources Regarded as Strictly Finite
Pollution/waste are Management
Responsibility

OUTPUTS

Products

Designed for Function, Style and Price
Safety for Reducing Liability
Functional and Market
Friendly Packaging

Designs for the Environment
Designs for Safety
Eco-friendly Packaging

Waste & Pollution

Pollution Control
Waste Disposal
Compliance with Regulations

Pollution Prevention
Waste Recycling
Cost Reduction, Preserve Environmental
Quality

STRATEGY

Corporate Strategy

Business Portfolio for Market and Financial Growth
 Maximize Shareholder Wealth, and Satisfice Stakeholders

Business Portfolio for Ecological Sustainability
 Profits Moderated by Stakeholders' (plus Nature's) Concerns

Business Strategy

Industry is a Venue for Hostile Competition
 Win Competitive Rivalry for Market Share
 Maximize Labor, Production and Distribution Efficiencies

Industry as a Venue for Ecological Cooperation
 Cooperate for Minimizing Environmental Impacts
 Focus on Eco-efficiencies in Resource and Energy Use

The vision and central goal guiding ecocentric management is long term "ecological sustainability" of the corporations and economies. This goal emerges from the fundamental value of ecocentrism, that views humans and their institutions as integral part of the biosphere. Accordingly, ecocentric management strives to broadly improve quality of life of its communities, rather than narrowly pursuing financial profits and growth. Striving for such a broad goal is assisted by going beyond rationality and patriarchal values, to intuition and feminist values (Porritt, 1984).

This fundamentally different value orientation shapes corporate approach to its inputs, throughputs, outputs, and strategies. Inputs are managed on the principle of *sustainable resource use and conservation*. The basis for this principle is recognition that the earth's resources are finite and that economic growth based upon material consumption is limited by this fact. Corporations cannot indefinitely use natural resources without providing for their renewal.

Ecocentric management seeks to minimize the use of virgin materials and non-renewable energy by 1) conserving energy and materials use; 2) recycling, reusing, and renewing materials and energy; or 3) off-setting consumption with replenishment. Human labor is another key input. Labor is not treated simply as a factor of production, whose productivity is to be maximized. Rather it is an asset to be nurtured and developed (Shrivastava and Hart, 1994).

In the ecocentric paradigm, *the throughput system is geared to minimizing the impact of productive activities on nature and fostering a harmonious organizational-nature relationship.* The throughput system is viewed as an open system continually interacting with its natural and social environments. During production, ecologically undesirable emissions and effluents are released into the environment. Poor maintenance, reliability, or system malfunctions lead to spills,

accidents, or unintended harm. Poorly designed throughput processes also lead to occupational and public health risks as well as inefficient use of material and human resources. Ecocentric management seeks to eliminate emissions, effluents, and accidents by using cleaner and safer technologies, and eliminating pollution at source. Pollution management is not guided by the aim of remaining in regulatory compliance. Instead it aims to implement technologically advanced environmentally superior solutions that can give long term competitive advantage (Kleiner, 1991; Hunt and Auster, 1990).

Ecocentric management seeks to make its outputs environment friendly. Products and packaging are designed for the environment and safety, and not just for function and market appeal. The objective is to minimize the life cycle cost of products and services. Life-cycle costing attaches a monetary figure to every impact of a product—disposal costs, legal fees, liability for product harm, loss of environmental quality, etc. Product development decisions are based not only upon projected cash flows, but also projected future costs associated with each product design.

Ecocentric strategies incorporate ecological criteria in choosing business portfolio. They seek to minimize environmentally hazardous businesses and product liability. They actively seek cooperation with other firms to improve ecological performance of the entire industry or networks of firms within a region. Through technological innovations they extract eco-efficiencies, which are designed to minimize environmental impacts (Buzzelli, 1991; Davis, 1991).

In moving toward ecocentric management companies can benefit by adopting Total Quality Environmental Management (TQEM) and Life Cycle Analysis (LCA) orientation (President's Commission on Environmental Quality, 1993). TQEM seeks continuous improvement in environmental performance in all aspects of the company. It recognizes the systemic interconnections between environmental, economic, and organizational issues. At each step of the value chain or life cycle of products and services, there is a linkage between the natural environment and the organization. TQEM involves dealing with these links from a total systems perspective.

Simultaneously focusing on inputs, throughputs and outputs, helps prevent the shifting of impacts from one medium to another (e.g., from air to solid waste). Life Cycle Analysis (LCA) can prevent the transfer of environmental impacts and health risks between the different stages in a product's or service's life by extending the system boundaries to include all aspects of product development, production, use, and retirement. Thus, TQEM and LCA facilitate the integrated examination of product choice, product design, production process, and waste management practices with the goal being to minimize use of raw material and non-renewable energy inputs, throughput waste, and life cycle costs (President's Commission on Environmental Quality, 1993; Shrivastava and Hart, 1994).

Ecocentric strategic management also expands the scope of corporate concerns from traditional concerns about profits and growth, to large human concern for ecological sustainability. It legitimizes the engagement and pursuit of variables that affect long term ecological sustainability. Thus, from an ecocentric strategic perspective, it is desirable for corporations to pay attention to social and cultural problems of poverty, hunger, disease, population explosion, wars, and oppression. Finding socially acceptable and productive ways of engaging these problems is part of the challenge of ecocentric management.

Conclusion and Future Research

The financial and competitive success of companies such as the Body Shop and Procter and Gamble, who have adopted ecological strategies, suggests that environmental expenditures need not financially detrimental for companies. If environmental investments are made within a coherent ecocentric strategic framework, they can lead to competitive success. Such a framework reconceptualizes our most basic concepts of, *corporations, goals, strategies, and performance*. It suggests that corporations are not simply rational systems of production. They are also systems of destruction. They destroy environmental value, perhaps currently unmeasurable in conventional market terms.

Hence, ecocentric Strategic Management must simultaneously seek to improve productivity, while reducing destructivity of firms. Corporate goals cannot simply be to improve profits, and growth. They must address renewal of natural resources, and move companies toward ecologically sustainable economic growth.

Corporate strategies must not simply deal with choosing product market domains, and being competitive within industries. They must choose business portfolios that are resistant to technological and environmental risks. Business strategies must seek competitiveness that enhances ecological performance of firms. Firm performance itself cannot be measured simply in terms of financial and market measures alone. It must include ecological performance and ecological sustainability.

Future research should focus on both theoretical elaboration of ecocentric strategic management, and empirically test the effects of ecocentric strategies. One of the first theoretical elaboration needed, is concepts and mechanisms that can overcome the commodification of nature as a "consumable commodity," which is inherent in current strategy and business theories.

Current theories treat environmental degradation as "externalities". Theories are also needed to accommodate ecological expenditures as internal costs. Externalizing ecological variables is not strategically desirable, because they can be bases of cost reduction and revenue enhancement.

Empirically we need to examine which industries in particular, offer more scope for ecocentric approaches. Are natural resource and energy intensive industries more amenable to ecological efficiencies? Can companies gain competitive advantage by moving faster on ecological issues, than mandated by

regulations? Will the ecocentric approach work better in some contexts than in others? Does it provide additional advantages to global firms that operate in multiple ecological contexts?

The exploratory analysis presented here is too preliminary to develop formal hypotheses. Instead, I suggest some more general propositions that derive from the ecocentric strategic management model (Figure 1) consisting of vision, inputs, throughputs, outputs and regulations.

Vision

1. Ecocentric strategic management brings new external and internal variables and longer time frames under the purview of strategy, and thereby allows better understanding of market, regulatory, and ecological uncertainties.
2. Within a coherent ecocentric framework, investments for improving ecological performance will be cost effective.

Inputs and Throughputs

3. It is easier to exploit ecological efficiencies in natural resource, energy, and pollution, intensive industries, than in other industries.
4. Companies in pollution prone industries (such as chemicals, paper, nuclear power, automobiles, mining, heavy manufacturing etc.) can gain strategic and regulatory advantage by pursuing ecocentric production strategies.

Outputs

5. The risks associated with corporate business portfolios can be reduced by screening businesses on ecological and technological risk criteria, in addition to the traditional market growth rate and market share criteria.
6. Ecocentric business unit competitive strategies can be viable in most industries. Most industries have segments of "green consumers" who are seeking environment friendly products.

Regulations

7. Implementation feasibility of ecocentric strategic management will depend on complementary changes at the individual, institutional, and community levels.

Clearly, these are only preliminary suggestions for developing a more nature-grounded theory of strategy capable of addressing the ecological dilemma facing the world today.

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