

Green Marketing and Sustainable Development— A Case of TERI University

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Abstract

The paper aims at highlighting the importance of green marketing using Teri University as a case study. It is the first of its kind in India working towards sustainability

1. Introduction

According to the American Marketing Association, “Green marketing is the marketing of products that are presumed to be environmentally safe.” Thus green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising.

"Green Marketing" refers to holistic marketing concept wherein the production, marketing consumption and disposal of products and services happen in a manner that is less detrimental to the environment with growing awareness about the implications of global warming, non-biodegradable solid waste, harmful impact of pollutants etc., both marketers and consumers are becoming increasingly sensitive to the need for switch in to green products and services. An average green company can be described by using the models and experiences reported by John Elkington, Peter Knight and Julia Hailes in their book *The Green Business Guide* (Elkington et al., 1992). A green company is based on its corporate vision that includes environmental concerns as the company's functioning. This simply means that the company realizes the needs of the ecosystem with which it interacts. Green marketing might be a result of pragmatic policy, referring to the changes of preferences of the customers and /or to follow the mainstream development of the industry. However, there are companies, which are really centered on green values and try to realize their ecological worldview in their business activities (e.g. the Body Shop, Ben and Jerry's, Tom's of Main, Interface). Polonsky (1994) defines green marketing as all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment. Corporations such as McDonald's, Wal-Mart, Procter & Gamble, and Du Pont acknowledge that the environment must be protected and enhanced for economic growth to take place, and have taken action towards that goal. McDonald's has made a \$100 million commitment to its consumers for recycling purposes. Wall-Mart encourages the purchase of environmentally friendly products and reports that the green labeling program that they initiated in 1989 contributed to an overall 25% increase in sales for the year. Procter & Gamble has pledged to spend \$20 million per year to develop a composting infrastructure. (Lodge and Rayport, 1991).

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As per Mr. J. Polonsky, Green Marketing can be defined as, "All activities designed to generate and facilitate any exchange intended to satisfy human needs or wants such that satisfying of these needs and wants occur with minimal detrimental input on the national environment.

Emergence of green marketing Green marketing was given prominence in the late 1980s and 1990s after the proceedings of the first workshop on Ecological marketing held in Austin, Texas (US), in 1975. Several books on green marketing began to be published thereafter. According to the Joel makeover (a writer, speaker and strategist on clean technology and green marketing), green marketing faces a lot of challenges because of lack of standards and public consensus to what constitutes "Green". The green marketing has evolved over a period of time. According to Peattie (2001), the evolution of green marketing has three phases. First phase was termed as "Ecological" green marketing, and during this period all marketing activities were concerned to help environment problems and provide remedies for environmental problems. Second phase was "Environmental" green marketing and the focus shifted on clean technology that involved designing of innovative new products, which take care of pollution and waste issues. Third phase was "Sustainable" green marketing. It came into prominence in the late 1990s and early 2000.

Benefits of green marketing Today's consumers are becoming increasingly conscious about the environment and social responsibility. Some of the advantages of green marketing are

- It ensures sustained long-term growth along with profitability.
- It saves money in the long run, though initially the cost is more.
- It helps companies market their products and services keeping the environment aspects in mind.
- It helps in accessing the new markets and enjoying competitive advantage.
- Most of the employees also feel proud and responsible to be working for an environmentally responsible company.

1.2 Green Marketing and Sustainable Development

Economy and society are constrained by environmental limits. Our economical and social activities should be framed for optimal utilization of natural resources and keeping the environment safe. All the different cultures of the world have always taught us to love our nature. Now days we are not utilizing our natural resources for fulfilling our needs but for fulfilling our greed. Due to this there are many social, economical and environmental problems have become deterrent for our life. The solution to these existing problems can be rectified if we go for sustainable development. Sustainable development as per the "Report of the World Commission on Environment and Development (United Nations, 1987)" can be viewed as a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but in the indefinite future. Sustainable development is the form of development which aims at sustainable consumption and sustainable economic growth and tries to protect the environment. The field of sustainable development can be conceptually broken into three constituent parts: environmental sustainability, sociopolitical sustainability and economic sustainability. The two terms sustainable development and sustainable consumption are the two facets of the same coin. Sustainable development refers to maintaining long-term economic, social and environmental capital. While sustainable consumption becomes the way of life. Sustainable consumption is

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using resources in a way that minimizes harm to the environment while supporting the well-being of people.

Just a decade ago, the term green marketing or green business strategy evoked visions of fringe environmentalism and adding cost to existing normal goods. Most of the industries had the perception that consumers are willing to buy products at best competitive prices and associate no value for environmentally friendly products. They felt that the pressure for making business environment green and behaving in a more responsible manner especially comes from Government and its legislations and consumers have nothing to do with it. But, now that old perception of companies is changing, they have started realizing the changes in consumer perceptions and their behavior. Therefore, these day concepts of green marketing is taking shape as one of the key business strategies of the companies for gaining the competitive advantage, ensuring sustainable consumption of their products in the markets and enjoying sustainable development in future. Marketers must realize now that green marketing is not purely altruistic, it can be a profitable endeavor for sustainable development. Green marketing is an attempt to characterize a product as being environmental friendly (eco friendly). It holds the view that marketing which is a part of business not only has to satisfy customers in particular, but also has to take into account the interests of society in general.

Green Marketing can be viewed both as a type of marketing and a marketing philosophy. As a type of marketing it is like industrial or service marketing, and is concerned with marketing of green products and positioning them as green brands. As a philosophy, green marketing runs parallel to the societal marketing concept and espouses the view that satisfying customers is not enough and marketers should take into account ecological interests of the society as a whole. Green marketing concept emerges from societal marketing (Kotler, Keller, Koshy, & Jha, 2009). It is a part of Corporate Social Responsibility (CSR). “Green marketing” is not merely a catchphrase; it is a marketing strategy that can help to get more customers and to make more money. Marketers should analyze the changing consumer attitudes while recognizing the role that companies can play in protecting the environment to ensure societies well being. By practicing the Philosophy of Green Marketing, Industries can contribute to economic growth, social prosperity and environment protection. Through green marketing they will support in resolving the conflict between the various competing goals and the simultaneous pursuit of economic prosperity, environmental quality and social equity, the three dimensions of Sustainability

1.3 Green Building

A green building depletes the natural resources to a minimum during its construction and operation. The aim of a green building design is to minimize the demand on non-renewable resources, maximize the utilization efficiency of these resources when in use, and maximize the reuse, recycling, and utilization of renewable resources. It maximizes the use of efficient building materials and construction practices; optimizes the use of on-site sources and sinks by bioclimatic architectural practices; uses minimum energy to power itself; uses efficient equipment to meet its lighting, air conditioning, and other needs; maximizes the use of renewable sources of energy; uses efficient waste and water management practices; and provides comfortable and hygienic indoor working conditions. It is evolved through a design process that requires input from all concerned—the architect; landscape designer; and the air conditioning, electrical, plumbing, and energy consultants—to work as a team to address all aspects of building and system planning, designing, construction, and operation. They

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critically evaluate the impacts of each design decision and arrive at viable design solutions to minimize the negative impacts and enhance the positive impacts on the environment. In sum, the following aspects of a green building design are looked into in an integrated way.

- Site planning
- Building envelope design
- Building system design (HVAC [heating ventilation and air conditioning], lighting, electrical, and water heating)
- Integration of renewable energy sources to generate energy on-site
- Water and waste management
- Selection of ecologically sustainable materials (with high recycled content, rapidly renewable resources with low emission potential, and so on)
- Indoor environmental quality (maintain indoor thermal and visual comfort and air quality)

2. Literature Review

Nandhini Rangarajan¹, Dianne Rahm Texas State University, San Marcos, TX, USA (2011). How have environmental initiatives and “going green” permeated the human resources realm? This article, through a nationwide survey, examines the extent to which cities have incorporated environmentally friendly human resource practices. Results reveal that income, education, environmental awareness and presence of pre-existing successful environmental programs have an impact on technical and strategic human resource practices in U.S. cities. This article discusses the implications for public administration. **Samir K. Srivastava² (2007)** There is a growing need for integrating environmentally sound choices into supply-chain management research and practice. Perusal of the literature shows that a broad frame of reference for green supply-chain management (GrSCM) is not adequately developed. Regulatory bodies that formulate regulations to meet societal and ecological concerns to facilitate growth of business and economy also suffer from its absence. A succinct classification to help academicians, researchers and practitioners in understanding integrated GrSCM from a wider perspective is needed. Further, sufficient literature is available to warrant such classification. This paper takes an integrated and fresh look into the area of GrSCM. The literature on GrSCM is covered exhaustively from its conceptualization, primarily taking a ‘reverse logistics angle’. Using the rich body of available literature, including earlier reviews that had relatively limited perspectives, the literature on GrSCM is classified on the basis of the problem context in supply chain's major influential areas. It is also classified on the basis of methodology and approach adopted. Various mathematical tools/techniques used in literature *vis-à-vis* the contexts of GrSCM are mapped. A timeline indicating relevant papers is also provided as a ready reference. Finally, the findings and interpretations are summarized, and the main research issues and opportunities are highlighted. **Pratima Bansal³ and Kendall Roth (2000)**, the authors conducted a qualitative study of the motivations and contextual factors that induce corporate ecological responsiveness. Analytic induction applied to data collected from 53 firms in the United Kingdom and Japan revealed three motivations: competitiveness, legitimation, and ecological responsibility. These motivations were influenced by three contextual conditions: field cohesion, issue salience, and individual concern. In this article, the authors also identify the conditions that likely lead to high corporate ecological responsiveness. **Michael Jay Polonsky⁴, (1995)** Discusses stakeholder theory (ST) in the context of developing environmental marketing strategy. ST has

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not been utilized extensively in the marketing literature. Discusses how environmental marketing strategy can be improved by following the four-step stakeholder management process. This process involves: identifying the relevant stakeholder groups; determining the stake of each group; determining how effectively the “expectations” of each group are met; and developing corporate objectives and priorities that consider the stakeholder's interests. Through understanding and attempting to socialize key stakeholders, environmental marketing strategy can be made more effective. Provides some examples of the stakeholder socialization process. **Bodo B. Schlegelmilch⁵, Greg M. Bohlen, Adamantios Diamantopoulos,(1996)**, a review of the literature suggests that traditional segmentation variables (socio-demographics) and personality indicators are of limited use for characterizing the green consumer. Explores the extent to which variables, specific to environmental consciousness, are better able to explain consumers’ pro-environmental purchasing behaviour. Two conceptualizations of the purchasing domain are addressed, namely general green purchasing behaviour and specific purchasing habits relating to five green product categories. Two data sets are used in the analysis, namely marketing students and members of the United Kingdom general public. Suggests that measures of environmental consciousness are closely linked to environmentally-responsible purchasing behaviour, although the strength of the relationships varies according to sample type, the conceptualization of the purchasing domain and the particular product category at issue. **Frank-Martin Belz, Birte Schmidt-Riediger(2010)**, investigate characteristics and drivers of sustainability marketing strategies. Based on an empirical study in the food industry, we identify four sustainability marketing strategy types with distinctive characteristics (performers, followers, indecisives and passives). Consumers are one of the main drivers of sustainability marketing strategies. Depending on the sensitization of consumers to socio-ecological problems, the perceptibility of socio-ecological qualities, the individually perceived net benefits and the availability of sustainable alternatives, we argue that the typology and drivers apply to non-food industries as well. Furthermore, we find that the incorporation of social and ecological aspects into marketing strategies also depends on the market segment in which the company competes: companies that are positioned in the premium or quality segment are more inclined to take an active stance on sustainability marketing than companies that compete in the price segment. **Andreas Chatzidakis(2012)**, addresses consumers' attitudes towards consumption, the extent to which excessive consumption is perceived as an environmental problem and what consumers perceive as their personal responsibility vs. that of marketing for this consumption. Findings from a focus group and a survey administered to lecturers of a university in Portugal are reported. A critical reflection upon the findings reveals that participants view consumption as excessive and mostly due to marketing, but do not associate high levels of consumption with environmental damage. The consumers surveyed did not accept personal responsibility for excessive consumption, and many of them do not perceive their actions to have a significant impact on the environment. The high educational level of our sample makes these findings of particular concern. This paper feeds the debate on sustainable marketing and expresses the need to address consumers', as well as marketing's, place in sustainability. Implications of this study are drawn and directions for future research are suggested. **Seongho Kang, Won-Moo Hur (2012)**, proposed five novel constructs—green satisfaction, green affect, green trust, green brand loyalty, and green brand equity—and explored the positive relationships between these constructs. Electronics products in South Korea were the focus of this research. This empirical study was carried out by the one-to-one interview method using a structured questionnaire.

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The results showed that green brand satisfaction has a positive effect on green trust, affect, and loyalty. In addition, the results revealed that green brand, trust, and affect have a significantly positive influence on green brand loyalty. Furthermore, we found that green brand loyalty has a strongly positive influence on green brand equity. This study suggests that in addition to the perceived green trust arising from eco-friendly attributes, green affect characterized by positive emotional consumption plays an important role in building green loyalty and green brand equity for sustainable development. **Michael R. Galbreth, Bikram Ghosh (2013)**, gave a broad concept that includes numerous environmental and social dimensions, has emerged as an important product evaluation criterion for consumers. We suggest the impact of sustainability on consumer behavior depends on two factors—each individual consumer's unique level of *concern* about sustainability, and the general level of *awareness* regarding the sustainability of competing products—that together determine the level of heterogeneity among consumer attitudes toward sustainability. We incorporate sustainability concern and awareness into a model of horizontal competition in a duopoly, where one firm's product is more sustainable than the other's. Our results suggest that marginal increases in awareness can benefit all firms, including the less sustainable one, when awareness is sufficiently high (the explicit goal of recent sustainability labeling initiatives). In several model extensions, we provide additional insights for the following cases: the sustainable firm controls the extent of its sustainability advantage, the sustainable firm can directly influence the general level of awareness, and the distribution of sustainability concern across consumers is non uniform. Our results enable us to suggest several new insights for managers, both those whose products enjoy a sustainability advantage and those whose products do not.

2.1 Case Study

TERI University was established on 19th August 1998 and recognized by the University Grants Commission (UGC) as a deemed to be University in 1999. Set-up as the TERI School of Advanced Studies in 1998, the institution was subsequently renamed the TERI University. In the period since its inception, the University has developed and evolved as a research university exploring the frontiers of knowledge in areas of major significance to human endeavour. TERI University is the first of its kind in India to dedicate itself to the study of environment, energy and natural sciences for sustainable development.

The foundation of TERI University came about as an extension to the, consultancy and environment-related activities that were carried out by TERI, its parent body, which happens to be a prominent non profit organisation devoted to environmental causes.

Energy-Efficient buildings: Harnessing traditional architecture and modern science

If the techniques and the approach developed by TERI for energy-efficient buildings are applied to just 10% of the buildings constructed in cities every year, India can expect enough savings to light 20 million rural households. A conference facility including accommodation with a built-up area of 3000 square metres reduced its energy requirements from 280 kilowatts to 96 kilowatts by employing the principles of energy-efficient building design.

2.2 A self-contained island

When the Financial Express wrote about RETREAT (Resource-Efficient TERI Retreat for Environmental Awareness and Training), the paper described the facility as a self-contained island. The building employs an array of techniques—a 'combination of modern science and traditional knowledge' to quote former Prime Minister Vajpayee's words when he inaugurated

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the facility—including solar chimneys and earth air tunnels, fully integrated solar photovoltaic systems, water recycling, and a gasifier that uses firewood, dried leaves and twigs, and similar waste material to achieve not only considerable savings in energy consumption but also to reduce its ‘ecological footprint’. Here are a few more details and highlights of the innovations.

- a) Solar water heaters Twenty-four solar water-heating panels provide up to 2000 litres of hot (65 °C) water every day.
- b) Integrated photovoltaic systems The energy captured by the photovoltaic panels is fed into a battery bank, which is the main source of power at night. A number of panels, each measuring 1.1 by 1.2 metres, are joined and form an integral part of the roof of the building. The panels can generate up to 10.7 kilowatts peak of energy, which is fed into a 900 ampere-hour/240 volt battery bank.
- c) Biomass gasifier Firewood, dried leaves and twigs, the stubble left in the field after a crop is harvested, and such other forms of biomass fuel the 50-kilowatt gasifier, which is the source of power for the building during the day. The gasifier runs a generator, the diesel requirements of which have been cut down to 30% after appropriate modifications; the rest of the fuel comes from the gasifier in the form of ‘producer gas’.
- d) Subterranean air tunnels Effective insulation, shade provided by trees, and a network of underground earth air tunnels circulating cool subterranean air throughout the residential block ensure that the temperature in the complex remains more or less even all year round. The system has been augmented by adding chillers for dehumidification and additional cooling during rainy days.
- e) Day lighting Specially designed skylights, energy-efficient lights, and a sophisticated system of monitoring and controlling the consumption of electricity illuminate the complex. The conference rooms enjoy glare-free daylight through strategically placed skylights. A master control system switches off the lights automatically whenever it senses that daylight alone is enough to maintain the desired level of illumination. In the living rooms, strategically placed light points and specially designed swivels make it possible to use the light at a study table as well as for bedside reading.
- f) Recycling waste water a bed of reed plants (Phragmites) clarifies 5000 litres of water from the toilets and kitchen every day; the recycled water is used for irrigation. Sewage is collected initially in a settling tank (an Imhoff tank) that allows sludge to settle to the bottom. Part of the waste is decomposed at this stage by microbes. Then, the water is passed through a bed of soil, which also supports specially selected reeds well adapted to waterlogged soils. The roots of these plants act as living filters: they absorb and remove many of the toxic substances from waste water.

3. Replicating the success and spreading the message

RETREAT provides ample evidence that sustainable habitats can make not only ecological but also commercial sense, and TERI’s advice is increasingly sought for a wide variety of projects ranging from single buildings to housing complexes. A partial list of clients includes :

- a) Indian Institute of Technology, Kanpur (for the biological sciences building)
- b) National Thermal Power Corporation (office buildings in Simhadri and Koldam)
- c) Manipur State Technology Council, Imphal P Bangalore International Airport.

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3.1 Energy saved is Energy Generated

- a) Features of building design itself, such as appropriate orientation, insulation, and shading—what is referred to as ‘passive solar architecture’—can reduce energy requirements by about 10% and day-lighting, control systems, and energy-efficient lamps can bring them down by another 25%.
- b) A TERI study of 18 premier hotels in India found that energy conservation measures can lower electricity bills by 15% to 20%.

3.2 Applications/benefits

TERI can provide innovative solutions similar to those described here to promote energy efficiency in any building or group of buildings—old, new, or yet to be constructed. Energy-efficient buildings require a higher investment of 29 500 rupees per square metre, as compared with 19 000 rupees per square metre for a non-energy efficient building, but offer substantial savings in energy consumption. For a 10 000-squaremetre hotel building with a life-expectancy of 30 years, an energy-efficient building will consume energy to the tune of 300 kWh/m² [kilowatts per hour per square metre]) as compared with a non-energy-efficient building that will need 500 kWh/m² of energy. The net present value is calculated to be positive at 8.1 million rupees, with an electricity tariff rate of 6 rupees/kWh, and a discount rate of 10%.

3.3 Few Awards of TERI

- TERI University wins the '**Greenest University and Research Institution**' award for 2013.
- TERI wins the **Project Management Institute's (PMI) Project of Year (2013)** award in the NGO category.
- On 27 January 2012, TERI University was awarded with the '**Most Innovative Curriculum**' award
- Dr R K Pachauri conferred with the **GQ Global Indian of the Year Award 2009**
- Dr R K Pachauri conferred with '**Padma Vibhushan**', second highest civilian honour, in 2008 for his services in the field of Science and Engineering.
- Dr Pachauri led IPCC and former US Vice-President Arnold Al Gore shared **Nobel Peace Prize**.
- Dr R K Pachauri receives '**Officier de la Legion d' Honneur**' in 2006 from the Government of France.

TERI has been recognized as the Asia hub for the ‘Global Energy Network for the Urban Settlements’ (GENUS), a network established by UN-HABITAT. The focus area for Asia under GENUS is ‘Urban mobility for poor’.

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