CHAPTER - 1

INTRODUCTION AND BACKGROUND
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1.1 Introduction to the Topic
1.2 Concept and Evolution of green marketing
1.3 Remarkable green marketing practices in other than automobile sector
   a. Banking
   b. FMCG(Fast Moving Consumer Goods)
   c. Oil and Gas
   d. Electronics
   e. IT(Information Technology)
   f. Pharmaceutical
   g. Telecommunication
1.4 Need of the Study
1.5 Automobile Industry and Environmental Problems their interrelations
1.6 Reasons to select area for research

1.1 Introduction to the Topic
‘Global warming’, ‘Greenpeace’ and ‘Ozone Layer Depletion’ are the terms almost everyone is quite familiar now. As society becomes more concerned with the natural environment, businesses have begun to modify their practices in an attempt to address society's "new" concerns. Some businesses have been quick to accept concepts like environmental management systems and waste minimization, and have integrated environmental issues into all organizational activities Polonsky (1994). The industries who claim that they are environment friendly and have concern for the society are known as green industries, their marketing philosophy is termed as green marketing and their environment friendly products are called as green products. Saxena , Khandelwal (2010).

In the last three decades worldwide environmental consciousness has increased dramatically. Sustainable development, recycling, ecology, green marketing these have really become buzzwords. Today every other industry had started showing awareness regarding environment rather it would be better to say that, like a product life cycle, many leading industries in India are moving from awareness phase(i.e. introduction stage) to concern and implementation stage ( i.e. growth stage ).
There is one business area where environmental issues have received a great deal of discussion in the popular and professional press is marketing. Various terms like "Green Marketing" and "Environmental Marketing" appear repeatedly in the popular press. Many governments around the world have become so concerned about green marketing activities that they have attempted to regulate them Polonsky(1994a). For example, in the United States (US) the Federal Trade Commission and the National Association of Attorneys-General have developed extensive documents examining green marketing issues (FTC 1991, NAAG 1990).

1.2 Concept and Evolution of Green Marketing

Though various environmental issues influence on day-to-day activities of human life, little attempt has been made by academic disciplines to integrate green issues into their literature. Some evidence of this is the development of journals such as "Business Strategy and the Environment" and "Greener Management International," which are specifically designed to disseminate research relating to business' environmental behaviour. (Polonsky, 1994). One of the biggest problems with the green marketing area is that there has been little attempt to academically examine environmental or green marketing. While some literature does exist, it comes from divergent perspectives. (Carlson, Grove and Kangun 1993, Davis 1992, Davis 1993)

A lot of different and various definitions of the marketing are available but they all tend to put the customer into focus: “Marketing is the delivery of customer satisfaction with profit” (Kotler et al quoted by Nervi 2008, p19); “Marketing is the whole business seen from its final result, which is from the customer’s point of view” (Charter et al quoted by Nervi 2008, p19). However, the concept of marketing has changed over the years and there is, in general little reference to environmental, social and ethical perspectives in the traditional definitions (Kotler et al, 2001; Polonsky, 1994; Charter et al, 2002). The “old school” focuses on concepts of mass consumption and company compartmentalization as mass sales, mass marketing, standardized products... (Kotler et al, 2001). The “new school” (modern marketing) adopts partially the concept of globalization, showing a less generalized and customized perspective focusing on concepts such as consumers satisfaction, selected marketing segments, customized products or services(Kotler et al, 2001). There are no signs of green considerations in all those definitions. It is only the description of green marketing that we can find some green perspectives.
The concept of green marketing seems to take its foundations into the concept of traditional marketing itself (Polonsky, 1994; Charter et al, 2002). According to Prakash (2002), the relationship between the marketing discipline, the public policy process and the natural environment is important. This relationship is described by many terms such as environmental marketing (Coddington, 1993), ecological marketing (Fisk, 1974; Henion and Kinnear, 1976), green marketing (Peattie, 1995; Ottman, 1992), sustainable marketing (Fuller, 1999) and greener marketing (Charter and Polonsky, 1999). Polonsky (1994) notices that unfortunately a majority of people believes that green marketing refers solely to the promotion or advertising of products with environmental characteristics. The failure of some green marketing strategies happens frequently since companies used the environment as an additional promotional dimension without any attempts to analyze or modify the underlying product itself and its environmental impact (King, 1985).

Polonsky (1994) also claims that the green marketing incorporates a broad range of activities, including product modification, changes to the production, packaging changes, as well as modifying advertising. Yet defining green marketing is not an easy task. The first book on green marketing entitled “Ecological Marketing” by Hennion and Kinnear was published in 1976. Since that time a number of other books on the topic have been published.

**The Emergence of Green Marketing**

The beginning of environmentalism can be referred to the 1960s and early 1970s with increasing concern about the impact of production and consumption patterns on the environment due to debates on health effects and the impact of economic and population growth (Cohen, 2001). However, despite some attention during this time the real idea of green marketing emerged in the late 1980s with an increase in green consumerism. Environmental awareness, increasing interest of consumers in green products and the willingness to pay for green features encouraged the companies to show interest in green marketing.(Peattie and Crane, 2005). Green was ‘in’ during the 1990 and the green market was growing remarkably (Menon and Menon, 1997). In spite of the optimism, there was a significant gap between concern and actual purchasing has been identified. Many companies launched their own green product ranges, but the substance was missing and many of those early green products failed because they were expensive, hard to find and lacked functionality (Grant, 2007).
This reduced the demand for green products, being displayed by the decline of green marketing and pessimism about green products, claims and the companies behind them.

With the above view companies had to rethink in order to concentrate more on sustainable issues and not only on taking advantage of green agendas for commercial ends. The marketing philosophy and process is completely built around the customer and the relationship between the company and the customer (Peattie and Crane, 2005). If the relationship is characterized by distrust and pessimism, companies will not be able to acquire customers through the changes required to shift towards sustainability (Grant, 2007, Peattie and Crane, 2005). This old marketing approach could be seen as “image-washing” of companies, constructing brands for industrialized manufacturing businesses by three components, adding attractive cultural images, personalities and descriptions. Active customer engagement as well as knowing the products desired by the consumers is necessary, also the price-performance trade-offs they are willing to accept and what marketing approach they will respond to.

Companies have to establish a significant market presence in the long-term. They should understand and educate their customers in order to build brands, products and services helping green things to find mainstream acceptance (Peattie and Crane, 2005, Grant, 2007). As there are many redundant, inefficient, wasteful and harmful products and processes in everyday life, there is quite ample space for improvement in order to meet customer’s actual needs, with less harmful impact on environment. Therefore, business success depends on the ability of marketing to make green alternatives appear normal and acceptable and to innovate in different ways (Grant, 2007, ). Customer requirements and needs can often be effectively met when creating environmental improvements by innovations in market structures and in supporting services (Peattie and Crane, 2005, p. 365). The importance of customer focus also is on green marketing activities becomes crucial. This is an orientation that was mostly not addressed before.

1.2.1 Evolution of Green Marketing:

Theory of Management has firmly rooted in an economic and technical systems perspective which concentrates on exchanges, products, production and profits. Over time it has evolved to become more ‘human’, with the emergence of disciplines like
organizational behaviour, human resource management, business ethics and societal marketing. (Kenn Peattie and Martin Charter, 2003) The fact that businesses are physical systems which exist within a finite and vulnerable physical environment has, until recently, largely been ignored as a management and marketing issue. During the 1990s, the marketing discipline began to seriously discuss the physical implications and sustainability of marketing (O’Hara, 1995; Van Dam and Apeldoorn, 1996). The roots of green marketing can be traced back to the wave of environmental concern of the 1970s which spawned the ‘ecological marketing’ concept (Henion and Kinnear, 1976). This was largely concerned with those industries with the most severe environmental impacts, and with developing new technologies to alleviate particular environmental problems. However, there are some important differences between the environmental movement of the 1970s and the green movement of today, which are summarized in Table below:
Table 1.1 The Evolution of Environment Concern

<table>
<thead>
<tr>
<th>Factor</th>
<th>1970s Environmentalism</th>
<th>1990s Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis</td>
<td>On ‘environmental’ problems</td>
<td>On the underlying problems with our social, economic, technical or legal systems</td>
</tr>
<tr>
<td>Geographic focus</td>
<td>On local problems (e.g. pollution)</td>
<td>On global issues (e.g. global warming)</td>
</tr>
<tr>
<td>Identity</td>
<td>Closely linked to other anti-establishment causes</td>
<td>A separate movement embraced by many elements of ‘the establishment’</td>
</tr>
<tr>
<td>Source of support</td>
<td>An intellectual elite, and those at the fringes of society</td>
<td>A broad base</td>
</tr>
<tr>
<td>Basis of campaigns</td>
<td>Used forecasts of exponential growth to predict future environmental problems (e.g. limits to growth)</td>
<td>Uses evidence of current environmental degradation (e.g. the hole in the ozone layer)</td>
</tr>
<tr>
<td>Attitude to businesses</td>
<td>Business is the problem. Generally adversarial</td>
<td>Businesses seen as part of the solution. More partnerships formed</td>
</tr>
<tr>
<td>Attitude to growth</td>
<td>Desire for zero growth</td>
<td>Desire for sustainable growth</td>
</tr>
<tr>
<td>View of environment/busines interaction</td>
<td>Focused on negative effects of business activity on the environment</td>
<td>Focuses on the dynamic interrelationship between business, society and the environment</td>
</tr>
</tbody>
</table>

Source: Kenn Peattie and Martin Charter, 2003:728

The green marketing has evolved over a period of time. According to Peattie (2001), the evolution of green marketing can be broken down into three distinct phases: They have been described below:
First Phase:
The first phase was termed as "Ecological" green marketing. This concept was developed in the 1970s. Henion and Kinnear (1976) conceptualized that green marketing were concerned to all marketing activities, which have served to help environment problems and provide remedies for environmental problems. It dealt with the positive and negative aspects of marketing activities on pollution control and energy depletion.” (Henion and Kinnear quoted by Polonsky 1994, p2) The characteristics features of this phase of green marketing are: It focused only on environmental problems like air, water, soil pollution, oil spillovers etc. It targeted the companies or units that were causing the environmental problems. (Sanjit kumar roy 2006).

Second Phase:
The second phase was "Environmental" green marketing. It emerged during the late 1980. The focus of this phase was on the potential dangers to the environment and human life rising on it. A series of events/Bhopal Gas tragedy (1984), the Chernobyl(1986) and the oil spill at Exxon Valdez(1989), led this phase to come in to prominence. The most significant thinking in the green thought was sustainability. The characteristic feature of this phase was following:
1. Focus on clean technology that involved designing of innovative new products, which take care of pollution and waste issues.
2. Green consumers were concerned about the impact of their consumption and purchasing habits on the environment.
3. It considered the issues relating to physical environment, society and economy.
4. It held a global perspective by recognizing unsustainable production and consumption system as the causes for most of the environmental problems.

Third Phase:
The third phase of green marketing was "Sustainable" green marketing. It came into prominence in the late 1990s and early 2000. It emphasized on progress towards greater sustainability. Fuller (1999) defines sustainable green marketing as “the process of planning, implementing and controlling the development, pricing, promotion and distribution of the products in a manner that satisfies the criteria of sustainability.
This was the result of the term sustainable development which is defined as "meeting the needs of the present without compromising the ability of future generations to meet their own needs."

1.3 Remarkable green marketing practices in other than automobile sector

Though focus of this study is mainly on green marketing practices in automobile industry it is essential to understand green initiatives taken by other than automobile industries. Any business focus of a particular financial year would be to get ‘increasing market share', 'sharpening competitive edge', 'coping with change' or 'achieving quality standards’. Very rarely will 'strategic environmental management' feature on this list. However environmental strategy formation and implementation are slowly making it to the priority lists of Indian corporate. Following are few examples of the various Indian industries which have an environmental strategy in place and its implementation through the 'green' initiatives.
1. Banking: Green Initiatives by Banking Sector

The supreme reality of our time is ...the vulnerability of our planet." -John F. Kennedy. Green Banking is creating a buzz in the financial world. It is a form of banking taking into account the social and environmental impacts and its...
main motive is to protect and preserve environment (Deccan Hearld). Although this is a new phenomenon, some leading banks in India like ICICI, HDFC have adopted it successfully in their day to day financial activities.

It was observed by the researcher that, these banks are aware of its responsibility towards the environment and are undertaking various initiatives to reduce the environmental impact of their operations, they also believe that every small 'GREEN' step taken today would go a long way in building a greener future and that each one of us can work towards a better global environment. ‘Go Green’ is an organisation wide initiative that moves beyond its processes and customers.

ICICI and HDFC India’s first and second largest lenders respectively. Their green initiatives aimed at customers are driven by the objective of collaborating with each of their customers and making ‘green’ a part of everybody’s lives. These initiatives range from green offerings/ incentives, green engagement to green communication to their customers. ICICI and HDFC have succeeded in reducing their emissions through a number of green initiatives. Some of these measures are as follows:

**ICICI Bank Green Initiatives**

Green Product and Services: Bank has various environment friendly products those are mentioned below:

a. ‘Instabanking’: It is the platform that brings together all their alternate channels under one umbrella and gives the customer convenience of banking anytime anywhere through internet banking, i-Mobile banking, IVR Banking. This reduces the carbon footprint of the customers by ensuring they do not have to resort to physical statements or travel to their branches.

b. Vehicle Finance: As an initiative towards more environment friendly way of life, auto loans offers customers 50% waiver on processing fee on car models which uses alternate mode of energy. The models identified for the purpose are, Maruti’s LPG version of Maruti 800, Omni and Versa, Hyundai’s Santro Eco, Civic Hybrid of Honda, Reva electric cars, Tata Indica CNG and Mahindra Logan CNG versions.

c. Home Finance- ICICI home finance offers reduced processing fees to customers who purchase homes in ‘Leadership in Energy and Environmental Design’ (LEED) certified buildings

Green Communications: ICICI bank has extensively capitalized on the existing internal media- statements, inserts, and credit card charge slips- to reach out to the
customers and seek their collaboration in the ‘Go Green’ movement. The communication on online bill pay, online funds transfer and subscribing to e-statements are aimed at migrating customers to ‘paperless’ and ‘commute-free’ mode of conducting some of their banking transactions.

Green Partners: ICICI bank is working on and looking forward to partnerships with national and international ‘Green’ organisations and NGOs. In the past ICICI Bank has been associated with BNHS[(Bombay Natural History Society) BNHS-India, a pan-India wildlife research organization, has been promoting the cause of nature conservation for the past 131 years, since 1883.] and has also partnered the Green Governance Awards set up by BNHS to recognise and appreciate the participant organisation's efforts beyond meeting the statutory compliance for protection and conservation of the environment. As the first step towards going Green, ICICI looked at their day to day functioning to identify and implement ‘Green’ measures. These measures ranged from reduction in consumption of energy and paper to employee engagement.

Energy Conservation: Encouraging turning off and/or unplugging all lights and electronic equipment (computers, monitors, photocopiers, cell phone chargers, printers, radios, etc.) when not in use, and fully utilizing power-saving settings when in use, recycling and refilling ink cartridges for the printers, replacing incandescent bulbs with CFLs when they need to be replaced, internally and externally, utilising online "Webinars" for shorter meetings that involve people who might otherwise have to travel a long distance, encouraging use of carpool and use public transportation.

Saving Paper: Upgrading to a higher percentage post-consumer waste recycled paper internally (copy and printer paper) and externally (brochures, etc.), shredding and recycling all papers internally ,sharing electronic files, voice mail and e-mail instead of paper memos, deplaning (two-sided printing) when possible as well as limiting printed materials/e-mails/memos to only what is necessary.

**HDFC Green Initiatives**

HDFC Managing Environmental impact through internal initiatives: HDFC have been measuring its carbon footprint since 2010 and have been disclosing the same to the Carbon Disclosure Project (CDP). HDFC is one amongst 16 companies in India to make it to the Carbon Disclosure Leadership Index (CDLI) in 2012 with a score of 71.
HDFC has estimated their footprint for FY 2012-13 to be 299,150 MT CO2-e. Some more initiatives are:

Managing Waste: The Bank has made a tie-up with vendors for recycling of paper and plastic, IT policy to dispose IT assets due for retirement in a controlled manner.

Green Procurement: Bank is purchasing diesel gensets and air conditioners that are compliant with the norms of the Central Pollution Control Board (CPCB), purchasing energy star rated electronic gadgets.

**State Bank of India Green Initiatives**

**Green It@Sbi** : Best Green IT Project:

It can be observed that by using eco and power friendly equipment in its 10,000 new ATMs, the banking giant has not only saved power costs and earned carbon credits, but also set the right example for others to follow. SBI has also entered into green service known as “Green Channel Counter”. SBI is providing many services like; paper less banking, no deposit slip, no withdrawal form, no checks, no money transactions form all these transaction are done through SBI shopping & ATM cards.

State Bank of India turns to wind energy to reduce emissions: The State Bank of India became the first Indian bank to harness wind energy through a 15-megawatt wind farm developed by Suzlon Energy. The wind farm located in Coimbatore uses 10 Suzlon wind turbines, each with a capacity of 1.5 MW. The wind farm is spread across three states – Tamil Nadu, with 4.5 MW of wind capacity; Maharashtra, with 9 MW; and Gujarat, with 1.5 MW. The wind project is the first step in the State Bank of India's green banking program dedicated to the reduction of its carbon footprint and promotion of energy efficient processes, especially among the bank's clients.

**2. FMCG: Green Initiatives by FMCG Sector**

**HUL (Hindustan Uniliver Limited) Green Initiatives**

We found that Recycling and Packaging is the major green initiative taken by FMCG sector as follows: Working in the partnership with industry, governments and NGOs, HUL aims to increase recycling and recovery rates on average by 5% by 2015 and by 15% by 2020 in their top 14 countries. For some this means doubling or even tripling existing recycling rates. HUL has made it easier for their consumers to recycle its packaging by using materials that best fit the end-of-life treatment facilities available in their countries.
By 2020 HUL will increase the recycled material content in its packaging to maximum possible levels. This will act as a catalyst to increase recycling rates. Recycling and recovery rates has been increased by 3.5% over the 2010 average recycling and recovery index (RRI), averaged across its top 14 countries. Some of this increase resulted from improved data 3,126 tonnes of post-consumer recycled materials incorporated into rigid plastic packaging. Reduce Packaging: By 2020 HUL will reduce the weight of packaging that they use by one third through: light weighting materials, optimising structural and material design, developing concentrated versions of the products, eliminating unnecessary packaging, an estimated 9.5% reduction in weight per consumer use over 2011-12 compared to 2010, achieved through a combination of light weighting and material design optimisation.

Greenhouse Gases: Greenhouse gas impact per consumer use has reduced by around 6% since 2010, HUL have made particularly good progress in reducing greenhouse gas emissions from transport and manufacturing by increasing efficiency and using more renewable energy.

Addressing HUL’s water use: Company made particular progress in reducing water abstracted by the manufacturing sites. Since 2008 company has saved the equivalent of around 1.5 litres of water for every person on the planet. The water used by consumers in washing and cleaning is more than seven times greater than the water embedded in the agricultural raw materials company buy. In emerging countries, washing clothes can take up one-third of a household’s water supply.

Unilever sustainable living plan: The Unilever Sustainable Living Plan (USLP) sets out to decouple its growth from environmental impact, while at the same time increasing company’s positive social impact. It has three big goals to achieve by 2020 – to improve health and well-being, reduce environmental impact and source 100% of our agricultural raw materials sustainably and enhance the livelihoods of people across their value chain. Supporting these goals are seven commitments underpinned by targets spanning of company’s social, environmental and economic performance across the value chain – from the sourcing of raw materials all the way through to the use of the products in the home.
Procter & Gamble (P&G) Green Initiatives

Another giant in FMCG sector is (P&G) its environment policy includes a commitment to reduce, or prevent environmental impacts of its product and packaging in their design, manufacturing, distribution, use and disposal whenever possible. The company tracks material closely to maximise efficient use of raw materials.

Parle Green Initiatives

Parle Products had launched its "Parle My Green Planet” campaign in October 6, 2009 (Business Standard) with an intention to create environmental awareness among school children. The campaign involves over 5000 schools and environmentalists from all over India through My Green Planet, Parle had contributed in its own way by taking up various initiatives like planting more trees, conserving water, power and recycling waste. Company has tied up with “Give India”, a NGO, to encourage schools to participate in the campaign. A holistic campaign aimed at reducing wastage of plastic, increasing environmental awareness and conserving the ecosystem rather than just complaining about it.

3. Oil and Gas Industry Green Initiatives

Indian Oil Corporation Limited (IOCL) Green Initiatives

Being an active partner of the Global Compact Programme of the United Nations, Indian Oil is fully focused on “sustainable development.” The corporation recognizes protection of environment as a core commitment of its business.

IOCL’ Environment CSR activities include:

Commitment to clean energy: IOCL is committed to environmental quality and thus has set up a 21 MW wind power project in Gujarat, which has been in operation since January 2009. This has been registered as a CDM project in May 2011.

Nationwide promotion for cultivation of Jatropha: Indian oil has promoted cultivation of Jatropha, an energy crop for production of biodiesel throughout India by joint ventures with state energy agencies and private companies.

Indian Oil and Chhattisgarh Renewable Energy Development Authority (CREDA) have formed a JV called the Indian Oil-CREDA Biofuels Ltd, undertaken nearly 6000 ha plantations of Jatropha curcas in different districts of Chhattisgarh.

Setting solar PV (photovoltaic) systems at retail outlets: Solar PV systems have been installed at IOCL’ retail outlets to minimize the use of diesel generators for dispensing units and lighting loads, thereby reducing carbon emissions.
Conversion of wastes to valuables, IOCL: IOCL has adopted environment friendly organic waste converters at its locations in India to transform kitchen/horticultural organic wastes into value

**Hindustan Petroleum Corporation Limited (HPCL) Green Initiatives**

Hindustan Petroleum Corporation Limited (HPCL) is an Indian state-owned oil and natural gas company based at Mumbai, Maharashtra. The Corporation is committed to conduct its operation compatible with environment and economic development of the community and aims to create an awareness and respect for the environment, by ensuring healthy operating practices, philosophy and training. We found that following were the green efforts taken by this company

Rain water harvest arrangement for Mumbai refinery: Hindustan Petroleum plans to augment the rain water harvest from the hills adjoining its refinery plant at Mumbai. It would enable the oil firm to regulate its municipal water intake for plant operations. During 2011-12, it has harvested 60,000 KL of rain water from this site.

Exploitation of renewable energy in marketing units: Hindustan Petroleum has made use of renewable energy for lighting at its marketing locations in India. In Tamilnadu at Ennore Oil Terminus, the company has installed solar street lights for peripheral activities.

Energy conservation measures for refineries: HPCL’ refineries at Mumbai and Visakh have implemented in total 24 energy conservation initiatives that save 0.99 million GJ of energy annually. The firm has developed a LEED certified green building at Visakh terminal which functions on natural light by sky light installations.

Improved conveyor systems to save energy: In the process of identifying defective cylinders, HPCL has replaced its conventional correction loop conveyor with an automated conveyor belt, resulted in reduction of hours of operation from 16 to 2 and saved net energy of 62,664 units of power in a single conveyor belt per annum in bottling plants.

**4. Electronics Sector Green Initiatives:**

The consumer electronics sector provides room for using green marketing to attract new customers. One example of this is HP's promise to cut its global energy use 20 percent by the year 2010. To accomplish this reduction below 2005 levels, The
Hewlett-Packard company announced plans to deliver energy-efficient products and services and institute energy-efficient operating practices in its facilities worldwide.

**Videocon Green Initiatives**

E- waste recycling policy: Under the guidelines from Govt. of India MoEF (Ministry of Environment & Forest), for End of life Cycle (EOL) product recycling program applicable from 1st May 2012 onwards, the company has initiated various activities Videocon will further promote E-Waste recycling activities in the following areas:- Manufacturing facilities: Control, storage & disposal of e-waste through authorized recyclers. Suppliers: recycle & disposal through authorized recyclers. End Customers – As per guidelines lay down below. Consumers could contribute to resource conservation and prevent potential environmental problems by a simple action — the proper depositing of their old products. Electronic waste is to be collected separately from the general waste stream via designated collection facilities appointed by the government or the local authorities as per the said draft rules.EOL (End of Life) Product Recycling Guidelines: The service can be facilitated through Videocon service centres by calling them.

1. Product Category: CTV / LCD / LED / REF / WM / AC / MWO / DVD / Coolers / & other home appliances
2. Collection Centres: Govt. Authorized Recyclers / Videocon service centres.

**Samsung India Green Initiatives**

Recycling is the first step towards environment protection. Samsung Electronics is actively doing recycling program for end of life electronic appliances. Samsung’s Commitment: In India E waste (Management and handling rule 2011) have been notified. Samsung stands committed to implement E-waste rules. We found that following were the green efforts taken by this company

1. Reuse, Reduce, Recycle: To create a recycling-based society where discarded products are reused as resources for manufacturing thereby reducing the environmental impact of improper disposal.
2. STAR Program: STAR (Samsung take back and recycling) is Samsung India Electronics PVT Ltd’s convenient and comprehensive commitment to recycling of consumer electronics throughout India.

Samsung is the leader in delivering innovative eco-friendly products to consumers and are committed to products stewardship throughout the entire life cycle of its
products. Everything they do is guided by their focus on the “greening” of management, products, processes, workplaces and communities. Company’s green management policy guides and supports the continuous enhancement of greener environment through all of their business activities including product design, manufacturing process and workplace operations.

**Figure 1.2 Eco-Management Framework:**

![Eco-Management Framework](image)

**Figure 1.3 What is “Planet First”?**

![Planet First](image)

Planet First is a commitment, a mindset, and a fundamental approach that Samsung believes is critically important as consumers seek to balance their desire for cutting edge technology while pursuing a greener way of life. Planet first means always considering companies impact on the environment first as they continue to work, develop, engineer and design innovative products and solutions to inspire and satisfy the customers. Samsung is committed to providing a better green experience through
eco-friendly products, solutions and technologies that benefit customers’ lives, affirm shared values, and respect our planet.

**Philips Green Initiatives**

Longstanding Commitment: Guided by the precautionary principle, philosophy of the company is “prevention is better than cure.” Philips has been working to minimize the environmental impacts of its products, processes and services since 1970. It prevents threats of serious or irreversible damage to the environment and/or health. Based on scientific evidence and stakeholder consultation, policies can be developed that may go beyond legislative compliance. Decisions for alternatives take into account the level of concern and the availability and technical feasibility of those alternatives.


**Figure 1.4 Green Products**

Enabling consumers to make simple choices about the products they buy and its impact in the entire life cycle on the environment.

Chemical Management: Eliminating and minimizing hazardous substances in products and production processes has long been a priority.

Product Recycling Services: Find out how company can best recycle customers old appliances.

Philips understands that healthy ecosystems are the very foundations for healthy lives.

**Sustainability:** Sustainability at Philips is all about improving the health and well-being of individuals through meaningful solutions. Company is committed to
developing, promoting and marketing more energy efficient solutions for people in all markets. Company address this challenge with its green products and focus on green innovation.

In 2012, sales from Green Products increased to EUR 11,238 million, contributing significantly to the total revenue stream. As a percentage of the group total, green product sales rose to 45%, up from 39% in 2011, and on track to reach the new target of 50% in 2015. And to ensure company’s green pipeline remains well stocked, it has invested some EUR 569 million in Green Innovation in 2012.

ECO-Design: Across its product range, company is driving sustainability in all aspects of product creation through its Eco-Design process. Introduced in 1994, company’s Eco-Design procedures deal with all phases of product development to create products that offer better environmental performance. Through Eco-Design, company offers products that can help reduce costs, energy consumption and CO2 emissions. Eco-Design considers the following Philips

Figure 1.6 Green Focal Areas

Figure 1.7 Philips Green Logo

Company helps to make those choices easier when consumers shop, thanks to the Philips Green logo, which clearly identifies products that have a significantly better environmental performance than their competitors or predecessors.
Along with making products more ecologically efficient, company also focuses on reducing the environmental impact in their operations. In 2010, the company decided to group all activities related to improving the environmental performance of its manufacturing facilities (including chemicals management) under the Green Manufacturing 2015 program which renamed to Green Operations. The program focuses on most contributors to climate change, but also addresses water issues, recycling of waste and chemical substances.

Carbon footprint and energy efficiency: At all levels of its operations company continue to monitor and minimize the CO2 emissions resulting from their activities. In 2012, the independent not-for-profit organization Carbon Disclosure Project (CDP) awarded Philips the top score of 98 (out of 100) for carbon disclosure.

In 2012, company achieved its Eco-Vision for carbon reduction target as their operational CO2 emissions decreased 25% compared to 2007, the baseline year. They were able to achieve this significant reduction for a number of reasons, including their ongoing energy efficiency improvement program, green logistics, their changing industrial footprint, and the increase in purchased electricity from renewable sources.

These were, however, partly offset by increased CO2 emissions from manufacturing, due to a significant increase in reporting sites (acquisitions). In 2012, CO2 emissions from non-industrial sites decreased partly because of continued focus on the most efficient use of facility space. Company continued to promote video conferencing as an alternative to travel; as a result air travel is down, saving a total of 38 kiloton CO2 emissions. Company’s operational energy efficiency improved 7%, from 1.24 terajoules per million euro sales in 2011 to 1.15 terajoules per million
22 euro sales in 2012 as a result of a lower carbon footprint and higher sales.

Waste in manufacturing: Company aims to separate out all re-usable content from its production waste. Total waste decreased 7% to 88 kilotons in 2012 from 94 kilotons in 2011. The reduction was due to the divestment of the television activities and organizational changes in all sectors. Total waste consists of waste that is delivered for landfill, incineration or recycling. Materials delivered for recycling via an external contractor comprised 69 kilotons, which equated to 76% of total waste as its new acquisitions have lower recycling rates.

Chemicals management in manufacturing processes: With the Green Operations program company continued to focus on a selection of the most important substances in the processes. Use of chemicals in production processes has always closely been monitored, and the uses of substances, with a possible interact between man and/ or nature, is subject to strict procedures. Emissions of restricted substances totalled 55 kilos in 2012, a decrease of 50% versus 2011 mainly as a result of the successful phase-out of benzene in Lighting.

ISO 14001 certification: In 2012, 71% of reporting manufacturing sites were certified. This decrease compared to the previous year is attributable to new acquisitions being included in the reporting for the first time, but not being certified yet. The sectors have programs in place to address this.

Carbon emissions in supply chain: In 2011, a study performed to quantify the CO2 emissions of total supply chain, which allows them to target their carbon reduction actions. Total emissions in the supply chain were estimated at 5.6 million tons, which is almost six times scope 1 and 2 emissions. In 2012, company invited a selection of its key suppliers to join the Carbon Disclosure Project Supply Chain initiative.

5. IT Sector Green Initiatives

Infosys Green Initiatives

Eco-friendly practices begin at home: Infosys is taking proactive action to manage the resources of the planet more responsibly. Employees are becoming change agents and fostering eco-friendly practices through Green Connect, the environmental sustainability unit of the ‘Voice of Youth’ program. Under the mentorship of Chairman, N.R. Narayana Murthy, Green Connect partners with the Bangalore Electronic City Industries Association (ELCIA), the Departments of Horticulture
Forests, and the Government of Karnataka to spread the message and take coordinated action. Green Connect is divided into several subgroups or Wings based on the area of specialization:

Biodiversity Wing: Develops sustainable solutions to nurture bee hives and rare species of butterflies at the Infosys Bangalore Development Centre (DC).

4R Wing: Coordinates projects related to the ‘4R’ principle: Refuse – Reduce – Reuse – Recycle banned the use of polythene bags on the campus.

Tree Plantation Wing: Plants and maintaining saplings across medians on the Bangalore Expressway. Supports a Green Village model of agro-forestry to supplement the livelihood of people in rural areas.

Energy Wing: Developed a novel pop up reminder for employees to switch off their PCs at the end of the day.

Car Pooling Wing: Developed a car pool application that enables employees to form car pools and commute to work reserves parking space for car pools at the Bangalore DC.

Branding and Engagements Wing: Creates awareness about environmental sustainability conducts activities including debates, documentary films and photography contests, and Infy Rocks, an inter-college rock festival.

Web Wing: Updates information about activities and moderates the discussion board of the Green Connect portal.

Infosys has been actively working towards creating Tomorrow’s Global Company to identify specific ways in which companies can fulfil this role.

**Wipro Green Initiatives**

Wipro is striving for sustainable tomorrow - reduce costs, reduce carbon footprints and become more efficient - all while saving the environment.

Wipro's Green Machines (In India Only): Wipro Infotech was India's first company to launch environment friendly computer peripherals. For the Indian market, Wipro has launched a new range of desktops and laptops called Wipro Greenware. These products are RoHS (Restriction of Hazardous Substances) compliant, thus reducing e-waste in the environment.
6. Indian Pharma Sector Green Initiatives

Indian Pharma industry have an environmental strategy in place which it has implemented through its 'green' initiatives. Environment management is vital to pharma companies as the final products, medicines, have to be of the highest purity. Therefore pharma manufacturing facilities have stringent quality control norms governing internal cleanliness. This is done with equipment like clean rooms, HEPA filters and water purification techniques like ion exchange systems, etc.

It follows that since pharma companies are in the business of safeguarding life, they are as keen to safeguard the external environment while conducting business. This is even more necessary as the pharma industry is considered a waste-intensive industry; the ratio of waste to product is often 10:1. While it's true that newer technologies across industries aim to be 'cleaner' technologies and are geared towards pollution prevention rather than treatment, it often comes down to implementation of laws and norms.

Dr. Reddy Green Initiatives

Market leaders like Dr Reddy's Laboratories (DRL) have taken a proactive stance. DRL is one of the few, and the only Indian Pharma company to release an annual report, called the Sustainability Report. This is a voluntary information sharing exercise, meant for both internal and external audiences. The scope of the report, available on the company's website, is to not just discuss health, environment and safety issues, but also social, ethical and economic topics of importance across the given financial year.

Green dividends: Company believes that the environment and economy are twin partners in the pursuit of quality existence. These efforts are now showing results, not just in a greener environment, but also in a corresponding number of saved 'greenbacks'. Company has experience that initiatives taken to improve the environmental impact of a given process, has a positive impact, most of the time, on the cost economics of the given process. In view of this, company continuously review its manufacturing processes to make them environmentally as harmless as possible and cost-effective. The company has also taken up an 'eco-restoration' project as a 'long-term' investment.
Ranbaxy Green Initiatives
The two core values of Ranbaxy's environmental philosophy are "to be a Responsible corporate citizen" and "to manage operations with a high concern for safety and the environment". This philosophy is embedded in its Corporate Environment Health Safety (EHS) Policy and is evident in the rigour of the ISO14001 certification of manufacturing sites. "Employees are encouraged to actively participate in the ISO14001 Environmental Management System and follow the Corporate EHS Guidelines on Employee Involvement. Such activities extensively define the employee's roles in implementing the environmental management system, effectively

Indoco Remedies Green Initiatives
Indoco Remedies has its own strong policy wherein each production unit is equipped with effluent treatment plan which is designed by industrial consultant by keeping in mind of waste generated at the end of operations. "For air pollution company has installed Prefilter, Hepa filters (with 0.3 microns) where dust gets totally filtered and clean air goes into atmosphere. The company has got its own well equipped laboratory to check, all the parameters like COD, BOD, pH etc., while treating the waste water and after treatment clear water we store in tanks and using it for gardening. Company conducts training programmes and seminars on environmental policies by industrial experts, and all employees take an active part in the same. The company also conducts environment audits to evaluate how good the company's environmental system is and in case of any improvement same is taken up immediately. Records of mock drills, submission of environmental statement / reports etc. are also maintained.

7. Telecom Sector Green Initiatives
Telecom services are recognized world-over as an important tool for the socio-economic development of a nation. This sector has been an intrinsic part of India’s growth story bringing 1.2% of GDP growth with every 10% increase in mobile penetration. It is one of the prime support services essential for rapid growth and modernization of various sectors of the economy. In India too, the telecommunication sector has revolutionized the way we communicate and share information, thereby helping over 800 million Indians stay connected, over the last two decades.
**Idea Green Initiatives**

The telecom industry globally is cognizant of the fact that it needs to lighten its carbon footprint. And, in the Indian telecom sector, Idea is leading the search for green energy options. As part of a socially responsible corporate group, Idea has and continues to adopt policies, and business strategies to effectively integrate emerging environmental, social and economic considerations. Whether it’s through conserving energy, recycling, or finding innovative solutions to environmental and social challenges, Idea is committed to being a respectful, responsible and positive influence on the environment and the society in which it operates. Efficient power management, infrastructure sharing, use of eco-friendly renewable energy sources, leveraging the latest in technology to reach out to a large audience in most energy efficient manner such as video and teleconferencing, smart logistics, etc. are some of the best practices in its network infrastructure and day-to-day business operations, to ensure a clean and green environment.

Network Infrastructure initiatives: In order to reduce the collective carbon foot print of the telecom sector in India, Idea pioneered the concept of ‘Shared Telecom Infrastructure’ services, along with a few other industry leaders in the wireless space. This initiative is committed towards continuous innovation endeavours; optimization of future tower rollouts; and enhanced operational efficiencies leading to a substantial reduction of carbon foot print.

Communication initiatives: With a subscriber base of nearly 10 crore, company has an opportunity to influence a large mass of people by promoting green initiatives through our various communication programs and customer service initiatives. It was Idea which germinated the thought of ‘Use Mobile, Save Paper’ in the minds of millions of mobile users in India, with its aggressive yet thought provoking campaign. Idea designed the campaign to highlight numerous ways of saving paper, and thereby saving the green cover necessary for the health of the planet, by using a range of mobile based value added services in day-to-day activities to replace paper. Idea was amongst the first mobile operators in India to promote v-Top up recharges for prepaid users, in a major way. Soon, this led to the virtual phasing out of paper-based recharge vouchers, which has ultimately resulted in saving tonnes of paper which would have otherwise been used in making recharges available to millions of mobile users across the country.
Another recent and ongoing initiative is e-Bill which is being consistently promoted by Idea to ensure that more and more users opt for this service, and contribute towards saving paper.

Employee based initiatives: Idea’s HR operations have all been enabled online for its over 7,000 employees, to ensure that there is minimal paper documentation. This has again helped company to save tonnes of paper that would have been used in day-to-day HR related transactions and communication. Company uses smart ICT solutions such as teleconferencing, videoconferencing, web chats etc. for internal communication amongst employees to minimize travel.

Driven by its socially conscious parent group, Idea stays committed to the cause of giving back to the environment. Company will continue to drive its efforts towards environment sustainability by reducing carbon footprint and energy consumption.

**Bharti Airtel: Green Initiatives**

To minimize environmental impact, all operators first use battery power and when these run out, switch to diesel generators which increases the cost of operation by three or four times and adds to operational complexities. Despite all challenges and constraints, Bharti Infratel has taken proactive and bold steps to mitigate and improve operations to provide 24x7 network service uptime. Its pioneering Green Towers P7 initiative is a comprehensive energy efficiency and alternate energy programme covering seven high impact initiatives, which are aimed at reducing diesel usage and therefore the carbon footprint.

These initiatives include: Alternate energy sources like solar etc. – these are clean energy solutions and have today proven their case as a strong alternate to conventional sources of energy. Having already deployed these at around 1050 sites (inclusive of 500 nos. of Indus Towers), which has saved 6.9 mn litres of diesel and around Rs. 280 mn. Energy efficiency measures like Integrated Power Management System (IPMS) and variable speed DC generators (DCDG) – this has reduced diesel consumption by 1.2 mn litres and already saved Rs. 47 mn across almost 900 sites where this has been implemented. Demand side management like Free Cooling Units (FCU) instead of air conditioners etc. substantially reducing the electrical load requirement. This has already been implemented across 3400+ sites, saving consumption of 4.1 mn litres of diesel.
Bharti Infratel, today, is the only telecom tower company, which has installed almost 3 MWT of solar capacity on its network, generating more than 5 mn units of electricity every year. All this has been creditably achieved despite absence of subsidies on solar unit installations – a move contemplated widely by various agencies and the MNRE for a while now, without any significant action or policy being announced.

The Green Towers P7 programme is scoped for 22,000 tower sites, (primarily rural areas having low or no Grid Power availability) out of which 5,500 sites have already been implemented in the first year as part of this 3-year programme. Once completed, the initiative will reduce diesel consumption by 66 mn litres per year; with a significant carbon-di-oxide reduction of around 1.5 lacs MT per year. Additionally, the drive of sending e-bills to the post-paid customers is helping save 12,840 trees annually. Within its campus, the ‘Secure Print’ solution - an automated queue management based secured printing solution that has led to an annualized saving of about 8 metric tonnes of paper.

**Conclusion:** Researcher has observed that there are numerous remarkable practices in some companies other than automobile sector. These companies are taking intense efforts through various green initiatives. Though India ranks low on Yale's Environmental Performance Index, enforcement of environmental laws is generally thought to be uneven. So, it could be assumed that sophisticated sustainability efforts would be found in the local operations of multinationals (MNCs), and possibly suppliers to them under pressure to be "green". Based on Yale’s Environmental Performance Index one could have presumption that most Indian firms would be focused on short-term growth rather than sustainability. However, a significant number of India-based businesses do have sophisticated sustainability efforts.

It is also noticed that these initiatives are designed by the companies' own experts and driven by each company's local needs and opportunities, not by pressure from MNCs. The MNCs had sustainability efforts of their own, but there was little evidence that they were influencing their local suppliers.

The above companies have various green initiatives which include (a) greening company operations, (b) developing greener or socially-beneficial products, and (c) making energy-efficient products with extremely-low-GHG. Companies have "greened" its operations to make maximum reuse of discarded materials, minimise
energy and water use, and cut GHG emissions by switching from diesel to biomass fuel. From the above examples of various sectors, it has been concluded that environmental strategy formation and implementation are slowly making it to the priority lists of Indian corporate.

1.4 Need of the Study

Environmental sustainability is not simply a matter of compliance or risk management. Businesses are increasingly recognizing the many competitive advantages and business opportunities to be gained from eco-sustainability and green business practices. World-wide evidence indicates people are concerned about the environment and are changing their behaviour accordingly.

As we are well aware that resources are limited and human wants are unlimited, it is important for the marketers to utilize the resources efficiently without waste and have to find other alternatives in order to sustain in the business. So green marketing is inevitable. The types of businesses that exist, the products they produce and their approaches to business are changing. Eco-marketing, today, has come to acquire a significant place in industry. The corporate, who are today being called upon to maintain the ecological balance by ensuring that their products are biodegradable or they do not involve indiscriminate use of scarce natural resources, have increased substantially. As a result there is a growing market for sustainable and socially responsible products and services.

Greenhouse effect is one of the rising global concerns and needs to be addressed immediately and the greenhouse gas emissions are to be controlled as soon as possible. Developed nations like Germany, US etc. have controlled these emissions through technology but developing countries like India is still lagging due to expensive technology. The transport sector has an overwhelming dependence on fossil fuels – oil alone accounts for 81 per cent of its energy use – and of the total CO2 emissions from an average car, 76 per cent are from fuel usage. The automobile greenhouse gas burden is also evident from the fact that it is the second largest contributor to global warming emissions from the transport sector (after road freight). This extent of CO2 emissions from automobiles has transformed transport in general, and cars in particular, from a local to a global issue.

In concern with greenhouse effect, the environmental activism has led to legislations and hence firms are now required to comply with the regulatory mechanism. Thus
ecological marketing, also called “green marketing”, has today come of age and a marketing student needs to understand its nuance. This is because of the significant stress created by an increasing population on our eco-systems and the desire of more individual and families to adopt a resource-intensive lifestyle.

By adopting sustainable practices, companies can gain competitive edge, increase their market share, and boost shareholder value. In academics this subject is neglected, this research will help academician as well as society to become more responsible towards our mother earth. Research provides the basis for government policies in our economic system. The study will provide guidance to environmental committees to reach to companies to solve problem faced by them. Environmental activism will has led to legislations and hence firms are now required to comply with the regulatory mechanism so green marketing has become “Need of the Hour”.

1.5 Automobile Industry and Environmental Problems -Their Interrelations

Globally, automotive industry is passing through a paradigm shift. The past century has been the era of internal combustion engine (ICE) primarily on account of the ease of use, availability and low cost of fossil fuels. The shift to electric mobility has become necessary on account of fast depletion of fossil fuels, rapid increase in energy costs, impact of transportation on the environment and concerns over climate change.

There are many challenges in initiating and implementing green marketing in auto industry. India’s electric auto industry is really very small. The only manufacturer in India that produces Electric Vehicle is Mahindra REVA. There are a few makers in the two wheeler segment such as Yo Bykes, Hero Electric, Ampere and Lohia Auto. The biggest challenge to the manufacturers is to convince an Indian consumer to pay a premium to go electric, CNG or alternative fuel other than conventional. On the other hand, the biggest challenge to the government will be to provide the necessary infrastructure to support EVs like charging stations that are spread across the country. As per IEA report of 2009, fossil fuel based transportation is the second largest source of CO2 emissions globally. From 2006 to 2030, the global energy consumption is likely to rise by 53% and about three quarters of the projected increase in oil demand will come from transportation. World over these concerns are driving Governments and automotive industries alike to invest heavily towards developing vehicles based on alternate propulsion systems including electric mobility. For emerging economies like India, the urgency to find viable alternatives for sustainable mobility is also
accentuated by rapid economic development which is accelerating the demand for transportation. As a result of sustained high GDP growth, primary energy consumption is expected to increase by 70% in the next ten years. Below are some environmental challenges which will make impact on automobile industry.

Global Warming: A rapid increase in the consumption of fossil fuels such as oil and coal seen after the industrial revolution has resulted a rise in temperature, which exerts an influence over the ecosystem and increases wind and water damage. The emission of CO2, which represents a typical greenhouse gas, has been increasing since fiscal 1990, in ordinary households and in the transportation sector.

Resource Depletion: Resources used for automobiles are roughly divided into oil and metal resources. For oil, which has been supporting the automobile society, the time remaining before depletion is being prolonged, but in view of increasing consumption, the absolute amount may decrease. For mineral resources, it is said that the amount presently mined per month greatly exceeds the total consumption of mineral resources before the beginning of the industrial revolution!

Ozone Depletion: The ozone layer surrounding the earth absorbs most ultraviolet rays in the sunlight and thus protects the living creatures on the earth. The use of CFC-12 for automotive air conditioners, which destroys the ozone layer, was fully discontinued in 1995 but there is still a problem of how to collect and completely destroy CFC-12 from end-of-life air conditioners

Air Pollution: Air pollution is caused by carbon monoxide (CO), hydrocarbons (HC), nitrogen oxides (NOx), and suspended particulate matters (SPMs), and the emission of these sub-stances should be reduced. In recent years, the emission from a single automobile has been remarkably reduced, thanks to the development of exhaust gas cleaning technologies, but total emissions have remained on the same level due to an increase in the overall number of automobiles through the progress of motorization. For example, approximately 30% of areas do not meet the NOx emission standards according to data obtained from pollution monitoring stations located on roadsides.

Air Water Soil Pollution: In the high economic growth period, it was required to take measures against dust and sulphur oxides (SOx) generated from fuels combusted in metal casting furnaces and against water pollutants contained in waste-water. Most of these pollutants have been considerably reduced, thanks to the development of pollution prevention technologies. It is now required to reduce the environmental
impacts caused by our production activities by reducing the use of volatile organic compounds (VOCs) for drying paints for parts, properly managing the transfer of chemical substances used, and by reducing landfill waste.

Waste Problem: In recent years, the leaching of harmful substances from landfill sites has become a problem and people are increasingly demanding advanced waste disposal measures and opposing the construction of new landfill sites. On the other hand, waste disposal costs are rising, causing the illegal disposal of waste. Presently, approximately 5 million vehicles are wasted every year as end-of-life vehicles, around 70 to 80% of which are recycled. The remaining 20% or so are shredded and such shredder residue also needs to be reduced.

Energy and environmental concerns: Energy and environmental concerns are also driving changes in automotive manufacturing processes. Carmakers are increasingly optimizing the energy use in production facilities. What if the energy usage of the production processes can be predicted and optimized before installing the assembly lines.

1.6 Reasons to Select the Area for Research
India is the fourth largest economy in terms of GDP. It is amongst the top twenty exporters in the world. Today, the automobile sector in India is aptly described as the next sun rise sector of the Indian economy. Going by the current trends, India would be amongst the top automobile manufacturers in the world by 2020. (ACMA, 2013). It is Significant Manufacturing base of OEMs – Indian & Global, as shown in figure below.
At present India has 19 manufacturers of passenger cars & multi utility vehicles, 14 manufacturers of commercial vehicles, 16 of 2/3 wheelers and 12 for tractors besides 5 manufacturers of engines in India. This includes virtually all the major global OEMs (Original Equipment Manufacturers) as well as home grown companies. In 2010-11, India surpassed France, UK and Italy to become the 6th largest vehicle manufacturer globally. Today, it is the largest manufacturer of tractors, second largest manufacturer of two wheelers, 5th largest manufacturer of commercial vehicles and the 4th largest passenger car market in Asia. During 2011-12, India exported 2.9 million vehicles to more than 40 countries which included 0.5 million passenger cars and 1.94 million two wheelers. Today, the automobile industry in India provides direct and indirect employment to 13.1 million people. The production of vehicles and exports is given in Table below:
Table 1.2- Production of vehicles (in numbers)

<table>
<thead>
<tr>
<th>Category</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>5-yr. CA GR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Vehicles</td>
<td>1,545,223</td>
<td>1,777,583</td>
<td>1,838,593</td>
<td>2,357,411</td>
<td>2,982,772</td>
<td>3,123,528</td>
<td>15.1</td>
</tr>
<tr>
<td>Commercial Vehicles</td>
<td>519,982</td>
<td>549,006</td>
<td>416,870</td>
<td>567,556</td>
<td>760,735</td>
<td>911,574</td>
<td>11.8</td>
</tr>
<tr>
<td>Two Wheelers</td>
<td>8,466,666</td>
<td>8,026,681</td>
<td>8,419,792</td>
<td>10,512,903</td>
<td>13,349,349</td>
<td>15,453,619</td>
<td>12.7</td>
</tr>
<tr>
<td>Three Wheelers</td>
<td>556,126</td>
<td>500,660</td>
<td>497,020</td>
<td>619,194</td>
<td>799,553</td>
<td>877,711</td>
<td>9.56</td>
</tr>
<tr>
<td>Grand Total</td>
<td>11,087,997</td>
<td>10,853,930</td>
<td>11,172,275</td>
<td>14,057,064</td>
<td>17,892,409</td>
<td>20,366,432</td>
<td>12.9</td>
</tr>
</tbody>
</table>

Source: SIAM data.

Table 1.3- Export of Vehicles (in numbers)

<table>
<thead>
<tr>
<th>Category</th>
<th>2006-07</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>5-yr. CAGR (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Vehicles</td>
<td>198,452</td>
<td>218,401</td>
<td>335,729</td>
<td>446,145</td>
<td>444,326</td>
<td>507,318</td>
<td>20.65%</td>
</tr>
<tr>
<td>Commercial Vehicles</td>
<td>49,537</td>
<td>58,994</td>
<td>42,625</td>
<td>45,009</td>
<td>74,043</td>
<td>92,663</td>
<td>13.34%</td>
</tr>
<tr>
<td>Two Wheelers</td>
<td>619,644</td>
<td>819,713</td>
<td>1,004,174</td>
<td>1,140,058</td>
<td>1,531,619</td>
<td>1,947,198</td>
<td>25.73%</td>
</tr>
<tr>
<td>Three Wheelers</td>
<td>143,896</td>
<td>141,225</td>
<td>148,066</td>
<td>173,214</td>
<td>269,968</td>
<td>362,876</td>
<td>20.32%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>1,011,529</td>
<td>1,238,334</td>
<td>1,530,594</td>
<td>1,804,426</td>
<td>2,319,956</td>
<td>2,910,055</td>
<td>23.53%</td>
</tr>
</tbody>
</table>

Source: SIAM data.
Reason to Select Pune City and Area around Pune for This Research Study

Pune is one of India’s largest cities with a metro area population of over 5 million people. After Mumbai, Pune is the second largest city in the state of Maharashtra. It is located about 100 Miles away from Mumbai, a coastal city.

Many big players in Automobile Giants are located in and around Pune and Pimpari Chinchwad Municipal Corporation. It has become a automobile hub of western Indian. The players are: Bajaj Auto, Fiat, Force Motors, Kinetic Motors, John Deere, Mahindra, Mercedes Benz, Tata Motors, and Volkswagen. Along with these giants a huge group of tier1 suppliers and tier 2 suppliers have established in this region.

This sector has been growing at a CAGR, in excess of 15% over the last 5-7 years. In fact, in the last ten years, the volumes, exports and turnover have increased by 3.8, 19.6 and 6 times respectively. The contribution of this sector to the National GDP has risen from 2.77% in 1992-93 to close to 6% in 2012. At present, the installed capacity of the four wheeler industry (comprising passenger vehicles and commercial vehicles) is over 4 million units and two & three wheeler industry is over 15 million units with an investment of over Rs 80,000 cores. The industry has developed in clusters which have large number of companies with their vendor base.(NEMM2020)

Also presence of all major tier1 and tier 2 suppliers ensure right mix of respondents as needed for the study.
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