CHAPTER - IV

HISTORY OF AUTOMOBILE INDUSTRY

This chapter highlights history of Automobile Industry of the world and in India. The present position of this Industry in the world and India is studied. The scope of Automobile Industry in the near future is also explained. Finally all players in Automobile Industry of India are enumerated in this chapter.

4-1) HISTORY OF THE WORLD’S AUTOMOBILE INDUSTRY

The automobile as we know, it was not invented in a single day by a single inventor. The history of the automobile reflects an evolution that took place worldwide. It is estimated that over 100,000 patents created the modern automobile. However, we can point to the many firsts that occurred along the way.

Several Italians recorded designs for wind driven vehicles. The first was Guido da Vigevano in 1335. Vaturio designed a similar vehicle, which was also never built. Later Leonardo da Vinci designed clockwork driven tricycle with tiller steering and a differential mechanism between the rear wheels.

A Catholic priest named Father Ferdinand Verbiest has been said to have built a steam powered vehicle for the Chinese Emporer Chien Lung in about 1678. Since James Watt didn't invent the steam engine until 1705 it is guessed that this was possibly a model vehicle powered by a mechanism like Hero's steam engine, a spinning wheel with jets on the periphery.

The first vehicle to move under its own power for which there is a record was designed by Nicholas Joseph Cugnot and constructed by M. Brezin in 1769. A second unit was built in 1770, which weighed 8000 pounds and had a top speed on 2 miles per hour.
and on the cobble stone streets of Paris this was probably as fast as anyone wanted to go it.

The early steam powered vehicles were so heavy that they were only practical on a perfectly flat surface as strong as iron. A road thus made out of iron rails became the norm for the next hundred and twenty-five years. The vehicles got bigger and heavier and more powerful and as such they were eventually capable of pulling a train of many cars filled with freight and passengers.

Many attempts were being made in England by the 1830's to develop a practical vehicle that didn't need rails. A series of accidents and propaganda from the established railroads caused a flurry of restrictive legislation to be passed and the development of the automobile bypassed England. Several commercial vehicles were built but they were more like trains without tracks.

The development of the internal combustion engine had to wait until a fuel was available to combust internally. Gunpowder was tried but didn't work out. Gunpowder carburetors are still hard to find. The first gas really did use gas. They used coal gas generated by heating coal in a pressure vessel or boiler. A Frenchman named Etienne Lenoir patented the first practical gas engine in Paris in 1860 and drove a car based on the design from Paris to Joinville in 1862. His one-half horsepower engine had a bore of 5 inches and a 24-inch stroke. It was big and heavy and turned 100 rpm.

Lenoir had a separate mechanism to compress the gas before combustion. In 1862, Alphonse Bear de Rochas figured out how to compress the gas in the same cylinder in which it was to burn, which is the way we still do it. This process of bringing the gas into the cylinder, compressing it, combusting the compressed mixture, then exhausting it is known as the Otto cycle, or four-cycle engine. Lenoir claimed to have run the car on benzine and his drawings show an electric spark ignition. If so, then his vehicle was the first
to run on petroleum based fuel, or petrol, or what we call gas, short for gasoline.

Siegfried Marcus, of Mecklenburg, built a car in 1868 and showed one at the Vienna Exhibition of 1873. His later car was called the Strassenwagen had about 3/4-horse power at 500 rpm. It ran on crude wooden wheels with iron rims and stopped by pressing wooden blocks against the iron rims, but it had a clutch, a differential and a magneto ignition. One of the four cars, which Marcus built, is in the Vienna Technical Museum and can still be driven under its own power.

In 1876, Nikolaus Otto patented the Otto cycle engine, de Rochas had neglected to do so, and this later became the basis for Daimler and Benz breaking the Otto patent by claiming prior art from de Rochas.

In 1885, Gottlieb Daimler's in Bad Cannstatt built the wooden motorcycle. Daimler's son Paul rode this motorcycle from Cannstatt to Unterturkheim and back on November 10, 1885. Daimler used a hot tube ignition system to get his engine speed up to 1000 rpm.

On 29th January 1886, Karl Benz was granted a patent on it and on 3rd July 1886, he introduced the first automobile in the world to an astonished public.

Also in August 1888, William Steinway, owner of Steinway & Sons piano factory, talked to Daimler about US manufacturing right and by September had a deal. By 1891 the Daimler Motor Company, owned by Steinway, was producing petrol engines for tramway cars, carriages, quadricycles, fire engines and boats in a plant in Hartford, CT. Steam cars had been built in America since before the Civil War but the early one was like miniature locomotives. In
1871, Dr. J. W. Carhart, professor of physics at Wisconsin State University, and the J. I. Case Company built a working steam car.

By 1890 Ransom E. Olds had built his second steam-powered car. One was sold to a buyer in India, but the ship it was on was lost at sea.

Running by February, 1893 and ready for road trials by September, 1893 the car built by Charles and Frank Duryea, brothers, was the first gasoline powered car in America. The first run on public roads was made on September 21, 1893 in Springfield, MA.

Henry Ford had an engine running by 1893 but it was 1896 before he built his first car. By the end of the year Ford had sold his first car, which he called a Quadracycle, for $200 and used the money to build another one. With the financial backing of the Mayor of Detroit, William C. Maybury and other wealthy Detroiter, Ford formed the Detroit Automobile Company in 1899. A few prototypes were built but no production cars were ever made by this company. It was dissolved in January 1901. Ford would not offer a car for sale until 1903.

Eli Olds built first petrol-powered car. This car was running by 1896 but production of the Olds Motor Vehicle Company of Detroit did not begin until 1899. After an early failure with luxury vehicles they established the first really successful production with the classic Curved Dash Oldsmobile.

It sold for $650. In 1901 600 were sold and the next years were 1902 - 2,500, 1903 - 4,000, and 1904 - 5,000. In August 1904 Ransom Olds left the company to form Reo (for Ransom Eli Olds). E. Olds was the first mass producer of gasoline-powered automobiles in the United States, even though Duryea was the first auto manufacturer with their 13 cars.
The Rolls Royce Silver Ghost of 1906 was a six cylinder car that stayed in production until 1925. It represented the best engineering and technology available at the time and these cars still run smoothly and silently today. This period marked the end of the beginning of the automobile.

**4-1-1) History of the Japanese Automobile Industry:**

The first Japanese car manufacturing companies at a full scale was established by Nissan Automobile in 1933 and by Toyota Automobile in 1937.

In the fifties and more years since the Japanese began producing cars domestically, Japanese automotive technology has made remarkable progress and come to be one of the international leaders. In 1980, Japan became the top automobile-producing country in the world. The domestic auto industry has grown to the point where it is today one of the key industries supporting the Japanese economy. Today, looking further toward the twenty-first century, utilizing new materials, high-tech electronics, new power sources, and artificial intelligence, the type of car which automakers are capable of producing cannot even be imagined.

**4-1-2) History of the American Automobile Industry:**

Charles E. and J. Frank Duryea, two brothers from rural Illinois, were the founders of the American automobile industry. The Duryea Motor Wagon Company was the first company organized in the United States for the manufacture of automobiles. The automobile has changed the way people live and work all over the world. In America, very few people had cars prior to Henry Ford’s assembly line. This one industrial marvel was instrumental in changing America from a rural, agricultural way of life to an urban, more industrial way of life.
The society changed to a more mobile way of life, where the common man no longer needed to live in the same town where he worked. Also, it brought leisure activities closer to home, because travel was easier. Today, just about anyone who wants a car can have a car and, for the most part, they are essential to man way of life. Supporting industries flourished at the onset of the automobile and still flourish today. Businesses that produce rubber, steel, glass, petroleum, and many automotive parts and supplies employ many people in support of the automobile.

4-2) THE AUTOMOBILE INDUSTRY AT PRESENT

For most of the history of automobiles, a car was expected to do little more than travel from place to place with some degree of reliability and economy.

As roads and technology improved and more people began to use them, cars were expected to go a little faster, ride more comfortably and last long enough to make the investment worthwhile. Almost any new car could do these things well by the early 1930s, and even as technology advanced over the next 40 years, what the world expected of a car remained basically the same. Speed, convenience and reliability improved steadily, but for more than 70 years, a car was expected to do nothing more than move people and their stuff with a degree of comfort and style commensurate with the sale price.

Then the governments got involved in automobile design. Actually, the federal and various state governments started requiring certain safety items as the technology became practical, such as electric lights, safety glass and redundant throttle return springs. But beginning with the creation of the Federal Motor Vehicle Safety Standards in 1966 and the U.S. Environmental Protection Agency in 1973, the very mission of the automobile
began changing. Instead of just carrying people and their stuff quickly, comfortably and reliably, cars were eventually required to protect their occupants in a crash, retain all unburned fuel vapors, convert the byproducts of combustion into less harmful gases and report their own malfunctions. Today they must meet these and many other safeties and performance requirements set by the Society of Automotive Engineers, the repair industry and several governments, especially if the car is built for export.

As if new technical design standards weren't enough, the buying public's idea of an automobile has also gone light-years beyond reliable, economical transportation. The concept of 'automotive style,' which once referred to a range with economy cars at one end of the spectrum and luxury models at the other, has now expanded to include maybe a dozen different types of automobiles. Compared with earlier designers (including those resurrected from the dead to make television commercials), today's automotive designers and engineers are nothing less than heroes. They must create a car that meets volumes of safety and emissions regulations and wildly imaginative market demands, all of which were undreamed of only a generation ago. And as always, they have to figure out how to mass-produce these machines at a specific cost; because the sale price is pretty much set before the design work is even begun. To be sure, they have a lot of advanced tools at their disposal.

For decades, designers and engineers only needed to create a mechanical device that could carry us wherever there were roads. Now they are engaged in creating machines more advanced and complex than those that took us to the moon, and sometimes we drive those machines where there are no roads. And as it was in Henry Ford's day, the mid-market price of these marvels of
modern technology is still within reach of the people who build them.

However automobile companies nowadays have most portions in market. In 1999 Ford sold more than 7.2 million vehicles worldwide, a company record. Ford also set company records for net income ($7.2 billion) and earnings per share ($5.86), while reducing total costs by $1 billion.

General Motors posted record earnings in 1999 of $8.53 per share, which nearly doubled the $4.32 per share earned in 1998. GM’s revenues also jumped 14%, operating costs were reduced by $3.7 billion and its automotive profit margin doubled to 3.2%.

Daimler Chrysler reported a net income of $5.8 billion in 1998, a 19% gain over 1998. Worldwide sales were up, and operating profit of $11.1 billion was a 28% improvement.

Japan has 11 companies producing finished motor vehicles, including two that make only trucks, but they are merely the tip of an industrial pyramid composed of thousands of companies that supply parts and perform subcontracted work. In 1993 total automobile industry production reached 42 trillion yen, 13.4% of the total for all manufacturers. The total number of persons employed directly and indirectly by the industry--from manufacturing to sales--is 7.2 million, or 11% of Japan's working population.

Nissan Motor Co. Ltd. is building a $930 million vehicle manufacturing plant in Canton that will encompass 2.6 million square feet and produce about 250,000 units annually. Three vehicles will be produced at this facility, a full-size pickup truck, a full-size sport-utility vehicle and a newly designed minivan. Production has slated to begin in mid-2003. The plant initially will employ 3,300 workers.
Nissan's production strategy includes having suppliers build modules and components in the same sequence as the vehicles are produced on the production line. In increasing numbers, suppliers and support services also are locating plants adjacent to, or near, the new Nissan plant. By late November 2001, Nissan had announced the intention of nearly a dozen suppliers to build new plants, as well as the development of a supplier logistics center and formation of a transportation services company.

**4-3) SCOPE OF AUTOMOBILE INDUSTRY IN THE NEAR FUTURE**

According to a survey of ASME International (American Society of Mechanical Engineers), the automobile is the greatest mechanical engineering achievement of the 20th century. The automobile, airplane, Apollo, air conditioning and other technologies made major contributions to engineering progress and economic and social development in the last 100 years. The automobile also spurred transportation in the United States and provided a means of efficient and enjoyable travel for the nation's middle class.

Most automobile engine manufacturers, like Ford, want to be able to react to new market requirements in a quick, flexible, and cost-saving manner, Ford intends to automate the production of engines with open and manufacturer-independent control systems, and has decided in favor of the industrial personal computer (PC) because of its substantial cost advantages compared to conventional PLCs.

The automobile brought about many safety and health concerns. Agencies have been developed on the federal and state levels to address environmental problems and automobile safety designs. Safety in factories had to be addressed as well, to help protect the factory workers from hazards. There is much concern today about the pollutants that cars put into our atmosphere from the
greenhouse effects on our planet to the very air we breathe. We take the automobile for granted today, just another tool in our every day lives.

Automobile differentiation in the marketplace is dependent on more electronic features. To remain competitive, automakers must offer better features such as multiple air bags, driver information systems, comfort controls and so on. The gradual introduction of advanced features in lower-price automobiles is increasing the market size, which directly translates into a demand for electronic control unit (ECUs). A highly competitive automobile market, with strong performances by manufacturers, large multinational companies, and ongoing technological innovations, is rapidly driving the demand for electronic control unit (ECU) testers.

World Automotive Test Equipment Markets reveals that this industry generated revenues totaling $173.8 million in 2001. Total market revenues are likely to reach $233.2 million by 2007.

Car production will grow from 1998 to 2005 in every region of the world, except Japan, according to an internal Bosch study. The report predicts annual output on average will increase 5.2% in emerging markets, 1.5% in Western Europe and 0.2% in North America--but fall 1.0% in Japan over the next eight years, according to the report.

The study forecasts annual increases will average 11.6% in India, 7.6% in China, 6.1% in Central-Eastern Europe and the former Soviet Union, 3.2% in Southeast Asia, 2.9% in South America, and 2.4% in Africa, Central America and the Middle East.

Consolidation of the global automobile industry is moving forward at a breathtaking pace. In 2001, the six leading groups General Motors (including Isuzu), Ford (including Mazda), Toyota, DaimlerChrysler (including Mitsubishi), Volkswagen, and Renault
(including Nissan) accounted for almost 70% of the world-wide production of 56.3 mio vehicles (2000: 58 mio).

4-4) HISTORY OF THE INDIAN AUTOMOBILE INDUSTRY

From the policy standpoint, the Indian automobile industry can be viewed in terms of the pre-1991 (before liberalization) and post-1991 (after liberalization) phase.

4-4-1) Pre-1991, Before Liberalization

1880's & early 1900's:

About hundred years ago the first motorcar was imported and Import duty on vehicles was introduced. Indian Great Royal Road (Predecessor of the Grand Trunk Road) was conceived. First car brought in India by a princely ruler in 1898.

Simpson & Co established in 1840. They were the first to build a steam car and a steam bus, to attempt motorcar manufacture, to build and operate petrol driven passenger service and to import American Chassis in India.

Railways first came to India in 1850's. In 1865 Col. Rookes Crompton introduced public transport wagons strapped to and pulled by imported steam road rollers called streamers. The maximum speed of these buses was 33 kms/hr.

From 1888 Motors Spirit attracted a substantial import duty. In 1919 at the end of the war, a large number of military vehicles came on the roads.

In 1928 assembly of CKD Trucks and Cars was started by the wholly owned Indian subsidiary of American General Motors in Bombay and in 1930-31 by Canadian Ford Motors in Madras, Bombay and Calcutta.

In 1935 the proposals of Sir M Visvesvaraya to set up an Automobile Industry were disallowed.
1942 Hindustan Motors Ltd incorporated and their first vehicle was made in 1950.

In 1944 Premier Automobiles Ltd incorporated and in 1947 their first vehicle was produced.

In 1947 the Government of Bombay accepted a scheme of Bajaj Auto to replace the cycle rickshaw by the auto and assembly started in a couple of years under a license from Piaggio. Manufacturing Program for the auto and scooter was submitted in 1953 to the Tariff Commission and approved by the Government in 1959.

In 1953 the Government decreed that only firms having a manufacturing program should be allowed to operate and mere assemblers of imported CKD units be asked to terminate operations in three years.

Only seven firms namely Hindustan Motors Limited, Automobile Products of India Limited, Ashok Leyland Limited, Standard Motors Products of India Limited, Premier Automobiles Limited, Mahindra & Mahindra and TELCO received approval. M&M was manufacturing jeeps. Few more companies came up later. Government continued with its protectionism policies towards the industry.

Automobile Products of India (API) and Enfield India had already commenced the manufacture of scooters, motorcycles, mopeds and autos from 1955.

In 1956, Bajaj Tempo Ltd entered the Indian market with a program of manufacturing Commercial Vehic les, and Simpson for making engines.

AIA&AIA (association of the component manufacturers) came into being in 1959 and Government approved Bajaj Auto Ltd's plans for domestic manufacture of Vespa scooters and granted permission to produce 6000 units annually.
1960’s:

In sixties 2 and 3 Wheeler segment established a foothold in the industry. Escorts and Ideal Jawa entered the field in the beginning of sixties. Association of Indian Automobile Manufacturers formally established in 1960.

Between 1955 and 1960 only API was producing Mopeds. During the first half of the sixties three companies namely Mopeds India Ltd (1965), SZUL Gwalior (1964) and Pearl Scooters Ltd (1962) entered the arena.

Standard Motors Products of India Ltd. moved over to the manufacture of Light Commercial Vehicles in 1965.

Escorts and Enfield closed their scooter division and continued only with Motorcycle manufacturing. Entire scooter market was occupied by Bajaj Auto Ltd. and API in the sixties.

1970’s:

Major factors affecting the industry's structure were the implementation of MRTP Act, FERA and Oil Shocks of 1973 and 1979. During this decade there was not much change in the four-wheeler industry except the entry of Sipani Automobiles in the small car market.

Girnar Scooters Ltd entered into the market in 1971 and its output was less than 5000 units until 1980.

In the Two Wheeler Industry there were many entries during this decade. Scooter India established in 1972.

In 1972 Kinetic Engineering entered the Industry with a licensed capacity of 100,000 units per annum. Oil Shock of 1973 quickened the process of dieselization of the Commercial Vehicle segment.

Three other companies, namely, Kirloskar Ghatge Patil Auto Ltd, Indian Automotive Ltd and Sen & Pandit Engg products Ltd entered
the market during 1971-75. They ultimately withdrew in early eighties. Unlike Motorcycle and Scooter segments the Mopeds segment grew rapidly.

In the late seventies there were many entries in the Moped Industry. Only two firms namely, Majestic Auto Ltd and Sundaram Clayton managed to survive after 1980. During the seventies the economy was in bad shape. This and many specific problems affected the Automobile Industry adversely.

1980's - The period of liberalized policy and intense competition

Since the 80s, the Indian car Industry has seen a major resurgence with the opening up of Indian shores to foreign manufacturers and collaborators.

First phase of liberalization announced and unfair practices of monopoly, oligopoly, etc slowly disappeared. It was beginning of Liberalization of the protectionism policies of the Government.

Lots of new Foreign Collaborations came up in the eighties. Many companies went in for Japanese collaborations. Andhra Pradesh Scooters entered into collaboration with Piaggio for manufacture of Vespa model. Hindustan Motors Ltd. in collaboration with Isuzu of Japan introduced the Isuzu truck in early eighties. ALL entered into collaboration with Leyland Vehicles Ltd. for development of integral buses and with Hino Motors of Japan for the manufacture of W Series of Engines.

Telco after the expiry of its contract with Daimler Benz indigenously improved the same Benz model and introduced it in the market.

Government approved four new firms in the LCV market, namely, DCM, Eicher, Swaraj and Allwyn. They had collaborations with Japanese companies namely, Toyota, Mitsubishi, Mazda and Nissan respectively.
The Two Wheeler market increased. Since 1982 the Government had permitted foreign collaborations for the manufacturing of Two Wheelers up to 100 cc engine capacity. Foreign Equity up to 40% was also allowed.

In 1983 Maruti Udyog Ltd was started in collaboration with Suzuki, a Japanese firm. Other three Car manufacturers namely, Hindustan Motors Ltd., Premier Automobiles Ltd., Standard Motor Production of India Ltd. also introduced new models in the market.

At the time there were five Passenger Car manufacturers in India - Maruti Udyog Ltd., Hindustan Motors Ltd., Premier Automobiles Ltd., Standard Motor Production of India Ltd., Sipani Automobiles. Ashok Leyland Ltd. and Telco were strong players in the Commercial Vehicles sector.

In 1983-84 Bajaj Tempo Ltd. entered into collaboration with Daimler-Benz of Germany for manufacture of LCVs.

Important policy changes like relaxation in MRTP and FERA, delicensing of some ancillary products, broad banding of the products, modifications in licensing policy, concessions to private sector (both Indian and Foreign) and foreign collaboration policy etc. resulted in higher growth / better performance of the industry than in the earlier decades.

Lohia Machines Ltd entered in collaboration with Piaggio of Italy.

Kinetic Engineering Ltd. entered into Financial & Technical collaboration with Honda Motor Co. of Japan for 100 cc scooters.

In the Motorcycle segment firms had shifted their emphasis from heavier models to lighter and fuel-efficient models. Indian market was flooded with new 100 cc models manufactured by different firms with Japanese Technology.

In Moped segment there were 23 firms engaged in their production but the virtual oligopoly of Kinetic Engineering Ltd., SCL
and Majestic Auto remained intact. This segment had less collaboration.

4-4-2) Post-1991, After Liberalization, the Freedom to Grow

Beginning with mid-1991 the government of India has made some radical changes in its policies bearing on trade, foreign investment, exchange rate, industry, fiscal affairs and so on. Mass Emission Norms were introduced for in 1991 for Petrol Vehicles and in 1992 for Diesel Vehicles. In 1991 new Industrial Policy was announced. It was the death of the License Raj and the Automobile Industry was allowed to expand.

Further tightening of Emission norms was done in 1996. In 1997 National Highway Policy has been announced which will have a positive impact on the Automobile Industry.

The Indian Automobile market in general and Passenger Cars in particular have witnessed liberalization. Many multinationals like Daewoo, Peugeot, General Motors, Mercedes-Benz, Honda, Hyundai, Toyota, Mitsubishi, Suzuki, Volvo, Ford and Fiat entered the market.

Various companies are coming up with state-of-art models of vehicles. TELCO has diversified in Passenger Car segment with Indica. Despite the adverse trend in the growth of the industry, it is resolutely trying to meet the challenges. Various issues of critical importance to the industry are being dealt with forcefully.

In 1999 The Hon’ble Supreme Court passed an order directing all car manufacturers to comply with Euro I emission norms (India 2000 norms) by the 1st of May 1999 in National Capital Region (NCR) of Delhi. The deadline was later extended to 1st June 1999.

The 90s have become the melting point for the car industry in India. The consumer is king. He is being constantly wooed by both the Indian and foreign manufacturers. Though sales had taken a
dip in the first few months of 1999, it is back to boom time. New models like Maruti’s Classic, Alto, Station Wagon, Ford’s Ikon and the new look Mitsubishi Lancer have all been launched with an eye on the emerging market.

4-5) THE INDIAN AUTOMOBILE INDUSTRY AT PRESENT

The Indian automobile industry has come a long way since the first car ran on the streets of Mumbai in 1898. The initial years of the industry were characterized by unfavorable government policies. The real big change in the industry, as we see it today, started to take place with the liberalization policies that the government initiated in the 1991. The liberalization policies had a salutary impact on the Indian economy and the automobile industry in particular.

The automobile industry in the country is one of the key sectors of the economy in terms of the employment opportunities that it offers. The industry directly employs close to around 0.2 million people and indirectly employs around 10 million people. The prospects of the industry also has a bearing on the auto-component industry which is also a major sector in the Indian economy directly employing 0.25 million people.

The automobile industry in India is gradually evolving to replicate those of developed countries. The trends are emerging in the industry across segments, namely, passenger cars, multi-utility vehicles, commercial vehicles, two-wheelers and tractors. The qualitative analysis of the various trends reveals that the industry offers immense scope even for allied industries and those looking at investing in the auto industry.

The Indian automobile industry is undergoing a revolution of sorts. The vehicle war is on. And it’s a fight to the finish. Within the span of a few years, the vehicle market has displayed an array
of models that were hitherto undreamt of. Ford, General Motors, Toyota, Volvo are household names today. Launch of a vehicle in one category spawns a war for the throne.

The Ikon, Accent and Baleno have been launched. The Wagon R, due next, is predicted to give tough competition to those already in that sector. Czech carmaker, Skoda, a subsidiary of German auto major Volkswagen, is introducing the Octavia. India's only Sports car, the San Storm, is all set to race into our hearts. Hero Motors and the Kinetic Group are both set to launch new models.

In the three-wheeler market, after its eco-friendly Bijlee, Mahindra & Mahindra (M&M) plan to enter the market in a big way with their new diesel engine vehicle yet to be christened. Toyota has been to enter the multi-utility segment with the launch of its Qualis.

In these last years of the millennium, suffice it is to say that Indian cars will only grow from strength to strength.

There are 48 companies in the Automobile Industry in India that comprise of all vehicles, including two and three-wheelers, Passenger Cars and multi-utility vehicles, light, medium and heavy commercial vehicles, agriculture and earth moving machinery (table 4-1).

Since the inception of the Automobile Industry in India till liberalization (1942 to 1991, in a fifty-year period) only 31 companies have been established in the Industry; while in post-liberalization period (in a ten-years period from 1992 till 2001), 17 companies entered to the Industry.

Most of these new entrance all multinational companies that have joint venture with Indian companies. Multinational companies own more than 50% stake in their joint ventures, and sometimes this stake comes near to 100%. For example Italian Auto major, Fiat
Auto Spa has 94.77% stake in Fiat India Limited. A few of these new companies are fully subsidiary of foreign companies like Yamaha Motor India Ltd which is 100% subsidiary of Yamaha Motor Company of Japan.

Some Indian Automobile companies have several subsidiaries for manufacturing different vehicles, same as Eicher Ltd, Sonalika Group, Escorts Ltd and Mahindra & Mahindra.

Eicher Ltd includes Eicher Tractors Ltd for tractors manufacturing and Royal Enfield Motors Limited in motorcycles section. Sonalika Group has International Tractors Limited for the manufacture of tractors (incorporated 1995) and Sonalika Agriculture Corporation (established in 1971) that has approximately 80% share in Indian market of farm machinery. Escorts Ltd also includes Escorts Tractors Ltd and Escorts JCB Ltd. Mahindra & Mahindra has Mahindra Nissan Allwyn and Gujarat Tractors Corporation as subsidiaries.

Several companies in the Industry were declared sick during their life; because they have come under the Sick Industrial Companies (Special Provisions) Act, 1985. Thus they have been referred to the Board of Industrial and Financial Reconstruction (BIFR).

Finally 26 companies in the industry have been listed in Bombay Stock Exchange (BSE); and only 18 of them were listed in 2001 or before that date and were not delisted of BSE or not referred to BIFR. One company also has eliminated because of its negative values for average operating income during the period of the study. So the remained companies (17 companies) have been considered as population of the study which has been explained in details in the methodology of research.
<table>
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<th>Company Name</th>
<th>Production</th>
<th>Date of incorporation</th>
<th>Listing Date of BSE</th>
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<tr>
<td>1) Ashok Leyland Ltd.</td>
<td>LCVs, MCVs, HCVs *</td>
<td>1948</td>
<td>1976</td>
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<td>2) Atul Auto Ltd.</td>
<td>Two &amp; Three-Wheeler</td>
<td>1986</td>
<td>1996</td>
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<td>3) Bajaj Auto Ltd.</td>
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<td>1964</td>
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<td>5) Dewoo Motors India Ltd.</td>
<td>Passenger Cars, LCVs</td>
<td>1995</td>
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<td>6) Eicher Motors Ltd.</td>
<td>MUVs, LCVs, MCVs, HCVs, AEMC</td>
<td>1982</td>
<td>1985</td>
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<td>7) Eicher Ltd. **</td>
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<td>8) Escorts Ltd.</td>
<td>AEMCs</td>
<td>1944</td>
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<td>9) Fiat India Ltd.</td>
<td>Passenger Car</td>
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<td>15) HMT Tractors Limited **</td>
<td>AEMC</td>
<td>1953</td>
<td>1977</td>
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<td>16) Honda Motorcycle &amp; Scooter India Ltd</td>
<td>Two-Wheeler</td>
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<td>-</td>
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<td>17) Honda Siel Cars India Ltd</td>
<td>Passenger Car</td>
<td>1995</td>
<td>-</td>
</tr>
<tr>
<td>18) Hyundai Motor India Ltd</td>
<td>Passenger Car</td>
<td>1996</td>
<td>-</td>
</tr>
<tr>
<td>19) John Deere</td>
<td>AEMC</td>
<td>2000</td>
<td>-</td>
</tr>
<tr>
<td>20) Kalyan Motor Corporation Limited(Palpeugeot Ltd.)</td>
<td>Passenger Cars</td>
<td>1994</td>
<td>-</td>
</tr>
<tr>
<td>21) Kinetic Motors Ltd.</td>
<td>Two &amp; Three-Wheeler</td>
<td>1984</td>
<td>1985</td>
</tr>
<tr>
<td>22) Kinetic Engineering Ltd.</td>
<td>Two-Wheeler</td>
<td>1975</td>
<td>1978</td>
</tr>
<tr>
<td>23) LML India Ltd.</td>
<td>Two &amp; Three-Wheeler</td>
<td>1978</td>
<td>1980</td>
</tr>
<tr>
<td>24) Maestro Motors Limited (Sipani Automobiles Ltd.) **</td>
<td>Passenger Cars</td>
<td>1974</td>
<td>1990</td>
</tr>
<tr>
<td>26) Mahindra &amp; Mahindra Ltd.</td>
<td>MUVs, LCVs, AEMC</td>
<td>1945</td>
<td>1956</td>
</tr>
<tr>
<td>Company Name</td>
<td>Production</td>
<td>Date of incorporation</td>
<td>Listing Date of BSE</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------</td>
<td>-----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Maruti Udyog Ltd.</td>
<td>Passenger Cars, MUVs</td>
<td>1981</td>
<td>2003</td>
</tr>
<tr>
<td>Mercedes Benz India Ltd.</td>
<td>Passenger Cars</td>
<td>1994</td>
<td>-</td>
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<tr>
<td>Mitsubishi Motors India Ltd.</td>
<td>Passenger Cars</td>
<td>1998</td>
<td>-</td>
</tr>
<tr>
<td>Monto Motors Ltd.</td>
<td>Two-Wheeler</td>
<td>1997</td>
<td>-</td>
</tr>
<tr>
<td>New Holland Tractor India Ltd.</td>
<td>AEMC</td>
<td>1998</td>
<td>-</td>
</tr>
<tr>
<td>Punjab Tractors Ltd.</td>
<td>AEMC</td>
<td>1970</td>
<td>1972</td>
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<tr>
<td>Premier Automobiles Ltd.</td>
<td>Passenger Cars</td>
<td>1944</td>
<td>1956</td>
</tr>
<tr>
<td>San Motors Ltd.</td>
<td>Passenger Cars</td>
<td>1996</td>
<td>-</td>
</tr>
<tr>
<td>Scooter India Ltd. **</td>
<td>Two &amp; Three-Wheeler</td>
<td>1972</td>
<td>1975</td>
</tr>
<tr>
<td>Sonalika Group</td>
<td>Three-Wheeler, MUVs, AEMC</td>
<td>1969</td>
<td>-</td>
</tr>
<tr>
<td>Standard Motors Products of India Ltd. ***</td>
<td>Passenger Cars, LCVs</td>
<td>1948</td>
<td>(1995)</td>
</tr>
<tr>
<td>Sunkua Auto Ltd.</td>
<td>Three-Wheeler</td>
<td>1985</td>
<td>-</td>
</tr>
<tr>
<td>Swaraj Mazda Ltd. **</td>
<td>MUVs, LCVs,HCVs,MCVs</td>
<td>1983</td>
<td>1985</td>
</tr>
<tr>
<td>Company Name</td>
<td>Production</td>
<td>Date of incorporation</td>
<td>Listing Date of BSE</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------------------------</td>
<td>-----------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>41) Tata Engineering and Locomotive Co Ltd.</td>
<td>Passenger Cars, MUVs, LCVs,</td>
<td>1945</td>
<td>1955</td>
</tr>
<tr>
<td></td>
<td>HCVs, MCVs, AEMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42) Toyota Kirloskr Motors Ltd.</td>
<td>Passenger Cars, MUVs</td>
<td>1997</td>
<td>-</td>
</tr>
<tr>
<td>43) Tractors &amp; Farm Equipment Ltd.</td>
<td>AEMC</td>
<td>1961</td>
<td>-</td>
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<tr>
<td>44) TVS Motors Co Ltd.</td>
<td>Two-Wheeler</td>
<td>1982</td>
<td>2000</td>
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<tr>
<td>45) VCCL Auto Ltd. **</td>
<td>Two-Wheeler</td>
<td>1984</td>
<td>-</td>
</tr>
<tr>
<td>46) Volvo India Ltd.</td>
<td>MCVs, HCVs</td>
<td>1998</td>
<td>-</td>
</tr>
<tr>
<td>47) VST Tillers &amp; Tractors Ltd.</td>
<td>AEMC</td>
<td>1967</td>
<td>1995</td>
</tr>
<tr>
<td>48) Yamaha Motor India Ltd.</td>
<td>Two-Wheeler</td>
<td>2001</td>
<td>-</td>
</tr>
</tbody>
</table>

* LCVs: Light Commercial Vehicles, MCVs: Medium Commercial Vehicles, HCVs: Heavy Commercial Vehicles, MUVs: Multi-Utility Vehicles, AEMC: Agricultural & Earth Movers Construction

** These companies were referred to BIRF during the periods of study.

*** The number 38 has been delisted from BSE in 1995 and LML Company has eliminated for its average profits.

4-6) SUMMARY

With the invention of the wheel in 4000 BC, man’s journey on the road of mechanized transport had begun. Since then he continually sought to devise an automated, labor saving machine to replace the horse. Innumerable attempts reached conclusion in the early 1760s with the building of the first steam driven tractor by a French Captain, Nicolas Jacob Cugnot.

It was however left to Karl Benz and Gottlieb Damlier to produce the first vehicles powered by the internal combustion engine in 1885. It was then that the petrol engine was introduced, which made the car a practical and safe proposition. The cars in this period were more like the cars on our roads today, with cars came the era of speed.

The first ever land-speed record was established about a 100 years back, in 1898. Count Gaston de Chasseloup-Laubat of France drove an electric car (in Acheres near Paris) at a speed of 39.24 miles per hour. This flagged off the era of ‘wheels racing’, which lasted till 1964, after which jet and rocket -propelled vehicles were allowed. Then onwards, it has been one big journey...on the roads.

From the singsong rhythm of the bullock cart to the jet-age, India has also traveled a long way. An average Indian’s dream car may not be the design-savvy Honda or the stately limousine, but he sure can dream, and afford, the Maruti now.

It was in 1898 that the first motorcar rode down India’s roads. From then till the First World War, about 4,000 cars were directly imported to India from foreign manufacturers. The growing demand for these cars established the inherent requirements of the Indian market that these merchants were quick to pounce upon.
The Hindustan Motors (HM) was set up in 1942 and in 1944; Premier Automobile (PAL) was established to manufacture automobiles in India. However, it was PAL who produced the first car in India in 1946, as HM concentrated on auto components and could produce their first car only in 1949.

It was left to another company, Mahindra and Mahindra (M&M) to manufacture sturdier utility vehicles, namely the American Jeep.

In the 50s, the Government of India granted approval to only 7 car dealers to operate in India - HM, API, ALL, SMPIL, PAL, M&M and Telco.

The protectionist policies continued to remain in place. The 60s witnessed the establishment of the two-three-wheeler industry in India and in the 70s, things remained much the same.

Since the 80s, the Indian car Industry has seen a major resurgence with the opening up of Indian shores to foreign manufacturers and collaborators.

The 90s have become the melting point for the car industry in India. The consumer is king. He is being constantly wooed by both the Indian and foreign manufacturers. Though sales had taken a dip in the first few months of 1999, it is back to boom time.

New models like Maruti’s Classic, Alto, Station Wagon, Ford’s Ikon, the new look Mitsubishi Lancer are all being launched with an eye on the emerging market. In these last years of the millennium, suffice it is to say that Indian cars will only grow from strength to strength.