CHAPTER - VII

CONCLUSIONS

&

LONG-TERM

PROSPECTIVES
Future Trends In Technology

The latest trends in diesel engine technology reflect the environmental concerns about exhaust emissions from internal combustion engines. In almost all countries legislation is already in place to limit the emission levels on diesel vehicles and non road mobile machinery (NRMM).

While the current emission limits for vehicles in India are not as stringent as in advanced countries like the US and Europe, there are proposals to tighten the norms progressively in view of the heavy traffic pollution especially in major cities.

Exhaust emissions are measured on a dynamometer by simulating actual operating conditions for a city run on vehicle engines as per international standards.

Off Highway Equipment

There is a move in Europe and the US to bring in legislation to control emission levels on non road mobile machinery and agricultural tractors where diesel engines are fitted. This will be effective in Europe and US from 1999 onwards.

Product Development

Indian diesel engine producers are also gearing up for the task of bringing out new products to meet emission requirements both for the domestic market and for export. In order to accelerate the process, the
in-house R&D capability is being enhanced and in some cases assistance is sought from external agencies such as the Automobile Research Association of India in Pune and some reputed consultants abroad.

The well known foreign diesel engine producers who have established manufacturing facilities in India will seek to introduce their latest products in India when required.

**Fuel Injection Equipment**

While the legislation dictates the emission control measures, customers are demanding better fuel economy, lower oil consumption, lower noise levels and longer life from the engines of the future, what does all this do to the diesel engines as we know it today in India. The conventional engines of the reciprocating type will continue for quite some time. However, some technological advances will be seen in some of the systems.

There will be some major changes in fuel injection systems especially for transport vehicles, off highway equipment and tractors. Rotary pumps will become more common in view of their adaptability to change in fuel delivery, injection timing and other pump characteristics to suit charging operating conditions of load and speed. Higher injection pressures will be needed for better combustion and control of emission.

Electronic control of F.I. systems will be in vogue to meet the stringent emission norms in the years to come while improving the
fuel economy. Emission legislation’s Hindu survey 1996 were tightened in advanced countries, which led to the development of fuel injection equipment controlled partly or fully by electronics. This paved the way for proper engine management with precise metering and timing control in almost every stroke. The manufacture of electronic rotary pumps was taken up by both Bosch and Lucas Diesel to meet the stringent norms for pollution and Noise control.

The stringent emission legislation in Europe and those that are proposed have driven the diesel car industry to use electronic controls in fuel injection equipment. Lucas Diesel systems has already moved towards this direction and electronically controlled pumps have been successfully introduced for both Mercedes-Benz and Peugeot. It will not be long before this technology comes to India.

There are a number of factors that have a bearing on emission levels apart from the design and performance efficiency of the fuel injection equipment. These are fuel quality and specification vehicle maintenance and traffic management. Modifications to diesel fuel composition are receiving considerable attention as a quick and cost effective means of reducing emission from existing vehicles. The Sulphur content, cetane number of diesel, the fraction of aromatic hydrocarbons and the use of certain fuel additives are important factors among the various properties which control emission.
Besides the development and technologies considered above, traffic and vehicle management will be very important. Any move towards reduction of emissions will have to be done with the cooperation of different tiers in the industry. The new technology will call for new investment and continuous applied research work which will need substantial resource allocation.

**FUTURE DIRECTIONS AND PROSPECTS**

The current problem are transient in nature and the industry has definitely strong future. The vehicle industry addresses the in the infrastructural segment and needs of country and it has literally miles to go before it rests.

The future growth will also be agriculture triggered. Development of semi-rural and semi-urban areas due to increasing economic activities would create a large demand for vehicles. The reach to various villages will increase. Growth of the tertiary and agriculture sector will enhance purchasing power triggering demand and freight movement by road. The emerging concern over pollution and the consequent need for replacement on aged vehicles, backed by judiciary pronouncements, would call for replacements or a more-regular basis. During this growth phase, certain interesting developments are likely in the commercial vehicle industry pool.
The passenger segment may not witness any significant shift towards the private sector. The freight market would lead to a consolidation process. Economies of scale will result in better utilisation of vehicles, better buying and negotiating power and above all enable operators to build enough resilience to cope with recession in the future.

The manufactures are updating their technology. This move is necessitated by the need to be competitive in domestic and foreign markets. Manufactures realise that it would not be enough to address the domestic market which was so far protected and that it would be strategically necessary to address foreign markets with contemporary products.

Another major offshoot of the recessionary spell is that the manufacturers in the auto industry are looking inward to improve their products the most cost effective manner. Strategic souring of material, of components and supply chain management are all being given a through overhaul with a view to reducing non-valve added costs and improving competitiveness.

The industry that the road system is inadequate to service the number of cars and trucks which are going to ply on Indian roads policy of the Government addresses issues relating to building total roads but unfortunately the concept is not talking off due to issues on pricing private projects are not considered viable.
In the next few years the Central and State Governments may have to reconsider their policy of private roads and provide for large outlays in their budgets, if the road sectors has to grow. This is crucial in the immediate future itself if a sustainable economic turn around has to be achieved.

The financial service sector also will see a consolidation process in the coming decade. The entry of large players like GE, capital and ICICI and increasing interest of commercial banks in hire-purchase would establish the need to be strong, big and competitive with the ability to raise funds at low cost and cope with the increasing pressures of large MNCs and meet the demand of customers while general insurance is today nationalised, private sector entry in the insurance sector should lead to more attractive and value based services to suit the auto industry and road sector operations.

Another support service which should move into an organized sector will be the second hand sales market which is today virtually industry operated with increasing population of cars and trucks, more value added sources through the organised sector will be made available.

In sum the commercial vehicle industry is poised for a strategic shift and will have definite growth in the coming decade. The current problems of slowdown are transient and are a manifestation of the
forces of a market driven economy. The players in the industry are learning to adopt to this market dynamics. The slowdown in demand is also resulting in certain positive fall-outs like rationalization of operations, process improvements and technology upgradation.

The commercial vehicle industry is not a sunrise industry like software or bio-technology which posted robust growths no is a sundown industry with a declining future. It is definitely a sunshine industry which will register a sustained and consistent growth in the coming years, and continue to play a significant rode in the economic development of the country.

**PROMISING FUTURE FOR TWO WHEELER SEGMENT**

The future outlook for the industry looks promising. Rising income levels in both urban and rural market will ensure a rising market for the two wheelers, considered a basic need.

Most of the leading players such as TVS-Suzuki, Hero Honda and Bajaj Auto are gearing up to strengthen their presence in this segment with a range of new products that will address the needs of specific customer segments more appropriately and stimulate demand. Today customer preferences are driving the industry. Reliability, modern styling, and economy are demanded by the mass segment while convenience is the important feature for the emerging segment of women users. There is a small segment seeking the power and pleasure of riding
a two wheeler as well. The manufacturers are responding to these customer needs with the introduction of new models and modifying existing models.

India has-taken the lead in enforcing strict emission norms for two wheelers by the year 2000. Not many are aware that the year 2000 norms in India are the strictest in the world. The manufacturers are modifying their engines to meet the emission norms through various methods like fitting catalytic converters, 4 stroke engines, lean burn engines and fuel injected engines.

The next few years will see a flood of new vehicles from various manufacturers. These vehicles will not only have improved aesthetics and comfort but also be environment friendly TVS-Suzuki is set to roll out the new four-stroke 150cc Scooter spectra from its state-of-the-art plant at Mysore during the later half of 1998. This Scooter will be a trend setting vehicle combining high fuel efficiency, international styling and excellent riding comfort.

The motorcycle segment will also see many new model introductions from TVS-Suzuki, Hero Honda, Bajaj and Escorts. The market will see higher capacity vehicles in the 125cc to 175cc motorcycles sold now. The two wheeler industry is gearing up and going full steam ahead into next century.
LML Ltd. announced an ambitious Rs. 450-crore ($124.31 million) expansion plan aimed at dominating the country's massive market.

A Joint venture between the Singhania group and Italy's Piaggio group, LML said it planned to build the world's biggest Scooter factory, raising annual two-wheeler capacity to 6,00,000 units from the current 3,00,000 by the end of 1998. The factory will be located at Kanpur in Uttar Pradesh.

The corporate objective is to become the dominant player in the two-wheeler industry. LML is behind, Bajaj Auto which is the market leader with a 64 percent share of the India Scooter market, estimated at three million units.

The expansion project of the company to increase capacity to over 6,00,000 vehicles per annum has begun with process restructuring and plant layout involving major changes in the production area. LML also proposed to introduce new models of motorcycle and light two-wheelers with an engine capacity of 73-200cc. The motorcycles will be in the four stroke 125-200cc capacity range. The company currently makes 125cc. Scooters between January and August this year, LML's sales grew by 20 percent while the industry's overall sales fell by 7 percent.

Scooter manufacture LML Ltd. is entering the motorcycle segment in the second quarter of next year by launching four-stroke
mobikes, developed in technical collaboration with Daelim. Motor Company of South Korea, while collaborating with Daelim for motorcycle, LML has given a strong signal that it is not dependent on its estranged partner Piaggio for new products and technology.

Unveiling the prototypes of the motorcycles here last might, LML Executive Director (Marketing), of the four models, the three bikes of Altion range come with a 100cc. engine delivering 9.5 bhp while the fourth one named VR 135 is a 135 cc, 12 bhp bike. All the bikes would be equipped with electric start, multi-valve engine and five-speed gearbox and the mileage would be highly competitive.

LML would manufacture 10,000 bikes per month in the first year and subsequently ramp-up production at the company's Kanpur plant, where it makes LML range of scooters. LML would source some components for the bikes from Korea in the initial stages but total indigenisation would be achieved soon.

LML had earlier planned to launch the 'Gilera' range of mobikes from its Italian partner piaggio but that project ran into rough weather due to the standoff between the two partners, the two partners are now engaged in a bitter legal war after LML's promoters, Singhania's took piaggio to court to acquire the Italian company's 23.6 percent share in LML.
As per the joint venture agreement, between the promoters and piaggio, LML was free to source technology from outside the Italian partner and this was meant to ensure that Piaggio did not become the sole technology provider.

LML would launch a 75cc scooter in two versions next month aimed at creating, a new segment of small scooters. Priced below Rs. 20,000 the scooter would be delivering a fuel efficiency of about 60 kms per litre, and LML is also planning to roll out 4-stroke scooters next year that would take on similar products from Bajaj and TVS-Suzuki.

Despite the slump in the automobile industry, LML registered a 10 percent growth in the first half of the current fiscal and captured a market share of 25 percent. The company had also emerged as the largest exporter of scooters from India.

Kinetic Honda Ltd., the joint venture between the Pune-based Kinetic Engineering and Hero Motors of Japan may end up manufacturing motorcycles also reliable sources said that the model is he introduced will possibly be a self starter one, the reason for this diversification can be traced to the other joint venture agreement of Honda with the Hero group-Hero Honda Ltd. (HHL), the agreement specifically states that the Japanese auto company has the option of manufacturing motorcycles in its other joint venture with Kinetic.
At Present Kinetic Honda manufactures scooters and Hero Honda motor cycles although the latter's recently launched 'street' could be perceived as a direct competitor to kinetic Engineering's new product the K-4. Industry sources said Kinetic-Honda will need to produce one lakh motor cycles annually if the venture is to be cost effective.

Kinetic-Honda's Pithampur plant, which houses the existing scooter range, will then have to put up additional capacities, mainly for the engine of the motorcycle. The investment for this is estimated to be Rs. 30 crore.

The foray into motorcycles will be a sensible option during April-September, there was a 15.3 percent growth in sales of 100cc motorcycles in sharp contrast to the 8.1 percent drop in scooter sales. Sources also pointed to the comparatively lower cost of manufacturing motorcycles which in turn command a higher premium than scooters if Kinetic Honda were to get in to motorcycles production, it will then be an effort to boost its bottom line and market share.
TWO-WHEELER FINANCIERS EXPECT TO CLOCK 10-12 PERCENT GROWTH IN 98-99

Two wheeler financiers expect to clock a growth rate of 10-12 percent during the current year vis-à-vis 15 percent recorded last year. The demand has fallen short of expectations at least for the first half of the current year. But it still holds promise, say experts.

It would not be out of place to mention that the two-wheeler segment has thrown up much better business opportunities than the car and commercial vehicle finance segment during the current year.

One company that's bullish on the two-wheeler front is 20th Century Finance. The company has already commenced disbursements and is working on dealer and customer service net works. The company is also close to a formal tie-up with a two-wheeler manufacture. "It will be purely a brand-building and non-exclusive tie-up. It is expected to materialise some time in mid. October," said Mr. V.S. Srinivasan, Vice-Chairman of 20th Century Finance Corporation.

While Mr. Vikram Narayan, Executive Director of Apple Finance maintained that his company is still exploring the business opportunities in the two-wheeler financing segment, Kotak Mahindra Primus plans to get into the market after a year. "The market penetration in the sector is very low. But we have to get our systems in order before getting into business. The volumes have to be good to make it as
profitable as financing a car" pointed out Mr.Deepak Gupta, Chief Executive Officer of Kotak Mahindra Primus.

Tough business conditions incorporate finance and car financing forced quite a few finance companies to shift focus on the 2-wheeler segment which promised better opportunities.

Weizmann Finance is another new entrant in this business and Ceat is also understood to follow suit. Fierce competition in the car-finance is one of the chief reasons behind the move to tap the potential in the 2-wheeler segment. It is believed that lack of investment avenues in encouraging the middle-class to invest in vehicles which is half the price of a second-hand car.

According to Mr.Gupta of Kotak Primus, only 10-15 percent of the Rs.12,000 crore. Two wheeler segment has been tapped by existing players. There is room for more action, he added. Finance firms are following a prudent policy of widening their customer profile and tapping every possible growth avenue in the retail product financing. According to market sources, while April-August 1998 sales were not as good as expected, they expect sales to pick up from the festive season next month.

According to a senior Bajaj Auto Finance official, "Unlike other finance companies we have the manufacture's back-up to provide attractive discounts." 20th Century Finance is also working on special
gifts and zero interest schemes, driven by local requirements, said Mr. Srinivasan. Areas like Delhi, Chennai, Pune, Mysore and others have thrown up much more demand for two wheeler financing than Mumbai, pointed out industry players. While the metro areas have also thrown up encouraging demand for two wheeler financing, it is the semi-metro and rural areas which hold promise.

**Rapid Network Development in CV segments**

The advent of light commercial vehicles (LCVs) in the last ten years has created new markets with increased customer awareness and preference for more fuel efficient, and aesthetic looking vehicles. Rural, Semi-rural and Semi-Urban areas are being serviced through LCVs. The network is developing well Railway carrying bulk goods and commodities, medium duty vehicles for highway freight movements and LCVs servicing rural and semi-rural areas. The network development is very discernible.

The pay-load capacity of commercial vehicles has always been governed by the load bearing condition of roads thus limiting introduction of large machines. Multi-axle and tractor-trailer models provide a solution to this problem. The industry is clamoring for much better quality roads which would help movement of machines with large pay-load capacity. The entry of Volvo in this context is an interesting development.
In addition to development of a model range, user specific application are being developed in the goods segment such as ready mix, cement, fire crash tenders, refrigerated trucks, scooters/car carriers and the like. As regards the ownership pattern, in contrast to state owned fleet operations is the bus market, the goods market is characterized by a fragmented retail ownership. Major fleet operation in India are very limited; but a characteristic feature is that fleet operators command the service of various individual operators.

**Table No. 77**

<table>
<thead>
<tr>
<th>Light Commercial Vehicles</th>
<th>Production</th>
<th>Sales</th>
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<tbody>
<tr>
<td>1993-94</td>
<td>75,461</td>
<td>74,534</td>
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<tr>
<td>1994-95</td>
<td>92,997</td>
<td>94,863</td>
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<tr>
<td>1995-96</td>
<td>1,29,439</td>
<td>1,28,751</td>
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<td>1996-97</td>
<td>1,47,321</td>
<td>1,45,823</td>
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<td>1997-98</td>
<td>65,067</td>
<td>63,938</td>
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<tr>
<td>April-July 97</td>
<td>23,498</td>
<td>18,614</td>
</tr>
<tr>
<td>April-July 98</td>
<td>17,534</td>
<td>16,659</td>
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</table>

Alongside the growth of the commercial vehicle industry, various support services have grown in the last four decades. Notable among them are: Financial services, component manufacturers, insurance and service and the second-hand sale market profitability and growth of this automobile pool has significantly contributed to economic growth, especially the tertiary sector.


**Table No. 78**

*Projected Annual Vehicle Sales: 1994-95 To 2000-2001*

<table>
<thead>
<tr>
<th>Year</th>
<th>Two Wheelers</th>
<th>Three Wheeler</th>
<th>Cars</th>
<th>Jeeps</th>
<th>Light M&amp;HC.Vs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994-95</td>
<td>2,400,000</td>
<td>90,000</td>
<td>240,000</td>
<td>60,000</td>
<td>195,000</td>
<td>2,985,000</td>
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<tr>
<td>1995-96</td>
<td>2,616,000</td>
<td>98,100</td>
<td>261,600</td>
<td>65,400</td>
<td>212,550</td>
<td>3,253,650</td>
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<tr>
<td>1996-97</td>
<td>2,877,600</td>
<td>107,910</td>
<td>300,000</td>
<td>71,940</td>
<td>233,805</td>
<td>3,591,255</td>
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<tr>
<td>1997-98</td>
<td>3,165,360</td>
<td>118,701</td>
<td>400,000</td>
<td>79,134</td>
<td>257,186</td>
<td>4,020,381</td>
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<tr>
<td>1998-99</td>
<td>3,481,896</td>
<td>130,571</td>
<td>550,000</td>
<td>87,047</td>
<td>282,904</td>
<td>4,532,419</td>
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<td>1999-2000</td>
<td>3,830,086</td>
<td>143,628</td>
<td>700,000</td>
<td>95,752</td>
<td>311,194</td>
<td>5,080,660</td>
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<tr>
<td>2000-2001</td>
<td>4,213,094</td>
<td>157,991</td>
<td>850,000</td>
<td>105,327</td>
<td>342,314</td>
<td>5,668,726</td>
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*Note: Projection for subsequent years are made by AIAM Secretariat based on statistical trends and current developments.*

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**Table No. 79**

*Projected Vehicle Population In India In 2001 A.D.*

<table>
<thead>
<tr>
<th>Year</th>
<th>Two Wheelers</th>
<th>Three Wheeler</th>
<th>Cars</th>
<th>Jeeps</th>
<th>Light M&amp;HC.Vs</th>
<th>Total</th>
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<tbody>
<tr>
<td>1992-93 *</td>
<td>17,025,582</td>
<td>861,734</td>
<td>2,828,992</td>
<td>501,388</td>
<td>1,980,385</td>
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<td>1993-94</td>
<td>18,711,683</td>
<td>941,362</td>
<td>3,023,597</td>
<td>548,013</td>
<td>2,118,771</td>
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<td>1994-95 $</td>
<td>20,689,449</td>
<td>1,010,735</td>
<td>3,198,325</td>
<td>595,853</td>
<td>2,267,496</td>
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<td>1996-97</td>
<td>26,183,049</td>
<td>1,216,745</td>
<td>3,759,257</td>
<td>733,193</td>
<td>2,713,851</td>
<td>34,606,762</td>
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<tr>
<td>1997-98</td>
<td>29,348,409</td>
<td>1,335,446</td>
<td>4,159,253</td>
<td>812,327</td>
<td>2,971,036</td>
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<tr>
<td>1998-99</td>
<td>32,830,305</td>
<td>1,466,017</td>
<td>4,709,253</td>
<td>899,374</td>
<td>3,253,940</td>
<td>43,159,562</td>
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<td>1999-2000</td>
<td>36,660,391</td>
<td>1,609,645</td>
<td>5,409,925</td>
<td>995,126</td>
<td>3,565,135</td>
<td>48,204,222</td>
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<tr>
<td>2000-2001 #</td>
<td>40,260,383</td>
<td>1,741,122</td>
<td>6,166,026</td>
<td>1,083,947</td>
<td>3,848,837</td>
<td>53,100,314</td>
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</table>

$ Population arrived at after reducing scrappage @ 2.0%
# Population arrived at after reducing scrappage @ 1.5%
Yearly sales for 94-95 to 2000-2001 are estimated by AIAM Secretariat based on statistical trends, for arriving at population of vehicles.
STRATEGIC SHIFT IN CARS AND COMMERCIAL VEHICLES

The Indian automobile (Cars and commercial vehicles) industry is in the news for different reasons. The entry of new multinationals in a big way is changing the profile of the car segment. In the commercial vehicle segment, the unprecedented slowdown in demand after a record capacity creation and sales growth in the last 2-3 years leads to many questions which cause both concern and puzzlement.

The manufacture of commercial vehicles in India started in the fifties and the industry has registered a strident growth with a CAGR of over 5 percent. The industry's growth in the last 15 years has been particularly significant for two reasons.

The capacity expansion was much more rapid during this period and consequently the industry became susceptible to the recessionary trends of the economy from the Eighties, corroborating the linkage of economic growth to that of the commercial vehicle industry, normally witnessed in developing countries.

It would be useful to briefly map the market profile. The commercial vehicle industry is broadly classified under two segments—passenger and goods. The passenger segment is predominantly controlled by state owned transport undertaking (STUs). Across the country, passenger transport is a nationalised service. In some States, of late, due
to various pressures select routes are getting privatised; but this constitutes a small share of the total market.

The goods segment which was characterised initially by two-axle rigid vehicles has undergone a sea change over the last 20 years. Application specific vehicle development has been taking place now; for example, with increased port traffic and to carry over dimensional Cargo, Tractor Trailer vehicles are being produced. Multi-axle vehicles have been developed which carry normally a larger load to provide a solution to load restrictions on road. For project and mine application, tippers have come on the scene.

Italy's $50-billion Fiat group is following the Foot Prints of other global majors regarding its market in India, with massive investment plans of $1 billion between 1997 and 2002, this group seeks a long-term presence by setting up facilities to produce autos and auto-components, tractors, trucks and training.

With auto demand projected to rise by 50 percent between 1997 and 2007 in south America, China and India, the Fiat group has launched an aggressive globalisation strategy to penetrate these markets. After depending its involvement in south America with the 'world car' called the 178 project comprising the Palio Hateh back, Siena saloon, Palio weekend station wagon etc. as its launch pad two years ago, "India now is probably our most important market."
As part of its globalisation drive, the group is eating up a huge car manufacturing operation in Maharashtra. Last year, it established Fiat India Automobile Ltd. (FIAL), a wholly owned subsidiary to handle its auto and light commercial vehicles business in India. A green-field factory site is also coming up in Ranjangaon with a capacity of 1,00,000 units a year to turn out its 'world car', According to its schedule, the Palio will roll out in the first or second quarter of 1999.

In addition its 51:49 joint venture with Premier Automobiles Ltd. (PAL) has been producing the Fiat Uno since 1996. Fiat's international plans always incorporate plans to develop a component base to maximise local content. Towards this end, it is planning an industrial estate to house the various components and service companies around its Ranjangaon plant.

Fiat group company Magneti Marelli manufactures components is Pune. In addition, it has already set up camau India, specialists in Hi-tech manufacturing systems. In Goa, Teksid and the Kalyani group have set up a joint venture to product steel components.

The Fiat group is also involved with the Hindujas to modernise the Hosur I plant and build a new plant Hosur II, to produce Iveco commercial vehicles. Fiat Engineering India has also constructed a new factory for New Holland India in Greater NOIDA to turn out tractors. The group has so far invested $200 million spread over all its
activities and is keen to transplant a complete industrial culture in India. Its ultimate objective, however, is to be recognised as an "Indian company in India."

**Small Car Entering The New Generation Models**

The year 1998 is going to be an epochal year for the Indian automobile industry, when three new small car projects will go on stream. These are, Hyundai's factory near Chennai, Paewoo's near Delhi and Telco's near Pune-together the three new comers will be adding a capacity of around three lakh units a year, roughly equal to the present capacity of Maruti's plant near Delhi. On top of this, Fiat is putting up a new factory off Pune to make its "World Car" the Palio. This plant is stated to have an initial capacity of one lakh vehicles per year and commence production in late 1999.

An immense addition to capacity will thus be taking place in this sector at a time when the domestic car market has slumped. The total passenger car sales in the first four months of fiscal 1998-99 fell by 3.2 percent compared to the previous year. Car finance companies are facing non-payment of instalments from over 50 percent of their borrowers and are choking over a huge stock of recovered cars from defaulter.
### Table No. 80

**Passenger Car (Output/Sales)**

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<td>MUL</td>
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<td>198610/</td>
<td>268756/</td>
<td>328848/</td>
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<td>3303</td>
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<td>Telco</td>
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There will, therefore, be cutthroat competition in Indian market for these new entrants. The new competitions, of course, are offering product technologies that are far more advanced than the Maruti 800 of seventies vintage and even the relatively more recent Zen. The most significant technological advances being brought in by the new small cars makers are in the engine area with electronically controlled multi point fuel Injection systems and multi valve cylinders which give improved fuel economies and higher horse power besides enabling the
observance, of stringent emission norms in Western Europe other new facets being offered include collapsible steering, independent suspensions for the wheels, side impact bars, roof stiffeners, child proof locks, disc type front brakes and the like.

**Maruti's Earlier Advantages Future Prospects**

But these technical advantages are offset by the fact that Maruti's investment in plant and equipment is more or less fully depreciated and its costs an account of interest on fixed assets will be very low by now. The new producers, on the other hand, have to bear a huge cost tag on depreciation and interest.

On top of this comes the 4 percent additional across the board import duties and hike in import duty on engines from 20 percent to 30 percent in the 1998-99 Union Budget, which can add between Rs. 30,000 and Rs.40,000 to the cost of a car, depending on its import content. Here again, Maruti has the advantage of high indigenisation level as compared to the new models 35 percent (Daewoo-Matiz) and 70 percent (Hyundai's-Santro). Telco is the only one with a matching indigenisation level to Maruti. Maruti will of course have to upgrade its technology and bring in more contemporary models to meet the challenge. The company has also decided to go ahead with the setting up of new gearbox plant in order to reduce the import content. All this will cost a lot of money and may negate many of the inherent advantages.
Maruti has already launched an upgraded version of the 1000cc Zen called the Zen VX which contains additional features. Even this upgraded Zen is still left with the old carburetor based, single valve engine technology which is no match for the state of the art cars. It is reported that Maruti has to incur an additional cost of Rs.28,000 per vehicle on these new features plus additional tax. Because of the oncoming competition. Maruti has had to absorb all this additional cost. MUL is also planning to launch a more contemporary small car model, to replace the 800, which has recently been developed by its Japanese partner, Suzuki. In August 1998, Maruti launched the diesel version of the Zen which features a 1527cc, 57 BHP Peugeot Citroen TUD5 diesel engine and costs Rs. 1 lakh more than a petrol Zen. The Japanese partner is not is the diesel car game and would not ordinarily have taken up this model. But the new pricing ratio in India between petrol and diesel is so skewed (3:1) that diesel cars may become market rulers in the future. What this will do to the sale of the petrol Zen remains to be seen, although Maruti, in the beginning, plans to sell only 10,000 diesel Zens, per year, against 70,000 petrol Zens per year.

Telco's Plans And Products

Telco has also reacted to these market sentiments and is scheduling an almost simultaneous launch of both the diesel (1400cc/54bhp) and petrol versions of its new small car by November.
Although prices have not been firmed up by Telco at the time of writing, with its indigenous engine it should be able to substantially under price the Zen diesel which at present has an import content of over 75 percent. Hyundai, which had no plans for a diesel version of the Santro, is now giving serious thought to introducing diesel compact in 1999.

Another competitor to the Zen diesel will be the Fiat Palio which will have a 1700cc, 58 bhp diesel unit. This car will be introduced into the Indian market towards the end of 1998. Interestingly, the Diesel version of the Fiat Uno, made in India by the PAL, Fiat Joint venture, has been priced nearly Rs. 50,000 below the Zen diesel. The Fiat Uno has much more boot space than the Zen, which is a plus point in the Indian market. However, it technology is ten years older than the Zen.

As far as the petrol engine versions are concerned, Hyundai's Santro at Rs. 3.3 to 3.5 lakhs is aimed at eating into Zen market. Hyundai sources claim that from the way the orders are pouring in, the company may start calendar year 1999 with a pending order book of over 20,000 vehicles. The Santro is expected to be launched in October 1998.

Telco's pricing strategy for its small car, which will hit the showrooms in November 1998, will match that of the Maruti 800. This should be a source of concern for Maruti since the Telco car has more advanced features and has a much more powerful 1400cc engine giving
60 HP for the carburetor version and 65 HP for the direct injection version.

The Daewoo-Matiz will have a price tag between the Maruti 800 and the Zen. Although the Matiz also has an 800cc engine, it is a contemporary direct injection type which will give better mileage and more power than the vintage carburetor based engine, of the Maruti 800. Hence the Matiz may be a preferred buy despite a slightly higher price tag. However, since the Matiz, will have a higher import content of nearly 70 percent in the beginning, Daewoo might find it difficult to maintain its price line if the Indian rupee keeps to its downward course. The Matiz, will be hitting the Indian market in October 1998.

There will thus be an interesting battle to watch. The new entrants will survive only if they can export substantial portions of their output. Now for a brief look at the new small car projects.

**Hyundai Motor India Future Plans**

The plant with a covered area of 12-4 lakh sq. ft. is located in a 540 acre campus to Irungattukottai, 35 km from Chennai. The production Capacity is 1.20 lakh cars per year with an engine making capacity of 1.30 lakhs per year. Barring two heavy transfer press lines for body panels, which have been translocated from a Canadian assembly plant closed down in 1996, all the other equipment is new. Specialties of
the final assembly line are a robot for applying sealant for the front and rear windshields and automated wheel fitting and balancing.

The investment, wholly by Hyundai Motors of South Korea, is Rs. 2,300 crores in the first phase and Rs. 1750 crores in the second phase. Total direct employment will be 2850 when the plant is running at full capacity. The car to be produced is named Santro in India and was introduced in Korea in early 1997 as the Atoz. Commercial production will start in October 1998, with 15,000 cars to be produced in 1998-99, 60,000 in 1999-2000 and full capacity output in the third year of production.

The indigenisation level will be 70 percent initially and ultimately ever 85 percent. A total of 61 component vendors have been tied up for the project of which 15 are joint ventures with South Korean companies. There are plants to export 25 to 30 percent of the annual production of cars as well as engine and transmission assembly units.

**Daewoo Motors India**

Daewoo's small car, the Matiz (released as D Arts in the South Korean market in April 1998), will be made at its integrated facility in Surajpur, U.P. This plant on which DMIL has already invested Rs. 2,700 crores, has currently a capacity to make 3 lakhs engines gear boxes and other components and assemble 72,000 vehicles per year. The
second phase will see the capacity expanded to 1.50 lakh vehicles per year by 1999 involving an additional investment of Rs. 800 crores.

Trial production of the Matiz is expected shortly. In the start off phase the Matiz would have an indigenisation level of 30 percent which will gradually build up to 70 percent by the end of the first year of commercial production. Around 200 vendors have been identified to support the location effort.

The company expects to ramp up production to 5,000 cars per month in 1999-2000. The Indian plant will be a world resource for Daewoo with 50 percent of the component production earmarked for export. Already 25,000 cylinder heads worth $5 million have been exported to Korea this year. The Matiz will also be exported.

**Daewoo Likely To Extend GM Alliance To India**

South Korean auto manufacturers Daewoo Motors will look into the possibility of extending its proposed strategic alliance with the US-based General Motors to Indian operations.

Daewoo and GM have been holding talks to form a strategic alliance wherein the US auto giant would have equity stake in the Korean auto major. Daewoo group would invest over $2.5 bn include automobile power and electronics. The conglomerate has already pumped in close to $1bn into its auto projects, while $1bn has been earmarked for the power
projects in the country, over $400m is to be spent in the area of electronics.

Daewoo considered India as one of the three major sourcing points in the world and expansion of operations here had always been in the company's focus. He said in view of the high demand for matiz in Korean and European Markets. Daewoo would export 50 percent of the total production back to Korea.

Currently they are experiencing a shortfall in the production of Matiz in Korea due to the increasing demand in export markets.

The company was not for any price war and Matiz would create a niche for itself in India's competitive small car market, there would be neither any economy version of matiz nor any price reduction in view of Telco's small car Indica which is reported to have a price tag of Rs. 2.5 lakh the company was overwhelmed by the initial response to the booking of Matiz which commenced today.

M&M had over the years internally developed successful products to help the company tide over times of adversity, in the mid-1970s, it developed a diesel jeep internally that helped it get through the oil crisis then in the mid-1980s came the direct injection engine for tractors, which helped create what became popularly known as the cold-start tractors in North India, tractors that are easy to start on a cold morning. It pushed the company to the position of market leader in
tractors, raising its share from under 15 percent in the mid 1980s to the present 26 percent.

The automobile recession of 1991 resulted in the creation of the best seller commander range ten-seater Jeeps. The company was then reeling from the after-effects of the automobile recession brought decision to increase excise on the jeep to as much as 66 percent. At one point in late 1990, things were so bad that M&M had a stockpile up of nearly 9,000 vehicles, a quarter of its production that year.

The R&D department to develop a long wheel based 10-seater soft top vehicle which was named Commander. It was an instant success, selling as much as 1,800 vehicles a month and helping the company keep its nose above the water "The commander was not born out of any rational process" Anand explains, "it was the result of the tenacity of certain individuals who responded to the prevailing market conditions".

Another important aspect in the remaking of M&M in the 1990s has been the management restructuring of December 1994, probably the most far reaching change of its kind initiated by a front ranking Indian company. The restructuring worked on several levels. At the most basic level, it redrew the lines of responsibilities in the company.
The basic idea behind the restructuring was to prepare the company for global competition by empowering people much more than ever before.

At another level, the restructuring was aimed at investors. M&M was one of the first companies to realise the important role foreign institutional investors world be playing with the stock-market rapidly opening up. In fact, it realised early on the importance of being seen both financially and managerially focused on its core automobile business consequently anything that was outside the main business line of automotive and tractors was spun out as a separate company.

Another major investment programme of M&M which has evoked mixed reaction from analysts is the joint venture with the Ford motor company to produce passenger cars. M&M has already invested Rs.80 crore in the initial equity of the project and is committed to a further Rs. 400 crore over the next 4 years.

M&M is also setting up a world class foundry at a cost of Rs. 170 crore in collaboration with Victoria Luzuriaga, a well Known Spanish company in the field, which it hopes would be a source for some critical castings for Ford cars. M&M also has a 25,000 cars-a-year world class assembly plant at Nasik that Ford can use to produce new models of its cars in this part of the world.
Mitsubishi Karnataka In Talks On Automobile Unit

The Japanese major Mitsubishi is looking at the possibility of setting up an automobile project in Karnataka.

The Chief Minister, Mr. J.H. Patel, said discussions are at the preliminary stage but declined to give any further details about the possible location or the investment for the proposed project.

Mitsubishi's proposal follows Swedish giant Volvo plans to set up a heavy commercial vehicles manufacturing facility near Bangalore.

Chrysler had also recently indicated its interest in setting up a unit in Karnataka.

Meanwhile, Mr. Patel declined to comment on the possible reintroduction of octroi.

Earlier addressing the members of the Greater Mysore Chamber of Industry (GMCI) on the occasion of its nineteenth annual general meeting, Mr. Patel said another 1,000-1,500 mw of power is likely to be added to the grid in the next two years.

He said the government, will also look at small and medium projects as an option to reduce power shortage.

MR. S.R. Bommai, the Union Minister for Human Resources Development, said multinationals are welcome to invest
infrastructure projects but should not be allowed entry into agro and consumer products related sectors.

"Globalisation has left many small-scale industries closed and many medium-scale industries are being closed.

It has made Indian industries the agents of multinationals. After some time we will find MNCs everywhere. "So we should have a yes list and a no list", he said.

Reiterating that his government is not against the entry of MNCs, he said the United Front government is, however, committed to allowing entry only to those industries which would serve the best interests of the country.

Mr. R.V. Deshpande, the Minister for large and medium industries, observed that the government should consider allowing the Karnataka Power Corporation to supply power to the industries directly.

Striking a pro-liberalisation stand, he said the state government does not have any resources to start industries.

"In future, government will not start any industries," Mr. Deshpande said.

He said the work on the Hubli airport will commence soon and added that global tenders for minor ports will be announced soon.
In his welcome address, the outgoing president of GMCI, Mr. Valliappa said a "power policy coterminus with the industrial policy" in necessary.

On the possibility of reintroducing octroi, he said: "This obnoxious, antiquated impost, which was thrown out by the Karnataka government in 1979, one of the first states to do so, should it come back, will definitly take us back to the dark ages."

He suggested that a separate account be created for entry tax, surcharge and cess from which funds could be given to other civic bodies.

"We understand that civic bodies are starved of resources. It could mean that entry tax revenues which replaced octroi revenues are not being shared. Our estimates indicate that Rs. 475 crore is being collected by way of surcharge alone," he added.

**Ford Escort Zaps Opel, Zen As Best On Indian Roads**

The Indian automobile industry has finally come of age. And so have the consumers. Gone are the days when customers could be dumped with whatever the manufacturers produce whit a wide range of choice available in the car market, the customers are having the last laugh. And helping them make a choice is the leading independent market research firm JD Power & Associates.

Ford Escort has been named as the best quality car on the Indian roads by JD Power & Associates of America in its India Initial
Quality Study, a survey conducted among 2,500-odd consumers. General Motors' Opel Astra and Maruti's Zen have been ranked second and third respectively. The finding comes as a major surprise since Opel Astra and Zen are considered more popular if the sales figures were anything to go by.

The JD Power Initial Quality Study (IQS) has become the industry standard for measuring quality problems as perceived by customers worldover. The JD Power survey, which appears in Auto India magazine, looks at nine important likely problem areas. Done after the first 90 days of ownership, it reflects the initial quality of the car that has been to the sold customer. Two thousand five hundred odd respondents were asked to reveal any problems they may have experienced by checking a list of 140 specific problems that had been grouped into nine categories.

These include ride handling and braking, comfort/convenience, seats, sound, system heating, ventilation and cooling (HVAC), vehicle exterior, vehicle interior, transmission and engine.

The problem incidence was measured in terms of total problems encountered for any given model as per 100 vehicles. As per the study the Ford Escort has emerged as the car with the least number of problems per 100 vehicles. On average, the Ford encounters 144 less problems per 100 vehicles than the industry average of 456 problems per
vehicle. Just eight points behind is its competitor the Opel Astra, with a score of 319. Meanwhile, in the compact car segment, the Zen and the Uno at 352 and 353 points respectively, are separated by a single point.

Between the Cielo and the Esteem, there is almost 60 points difference in their scores. The Cielo emerges with four less problems per 100 vehicles over the Esteem-378 for the Cielo and 382 for the Esteem. The last two places are taken up by two Marutis-the 800cc with a score of 424 and the Omini with a score of 432.

In the mid-sized luxury segment (Escort, Astra, Cielo and Esteem), the Astra leads the four contenders in this segment with fewer problems (77) in ride, handling and braking compared to the rest.

In the premium small car segment (Zen and Uno, the ride, handling and baking, the Uno leads with score of 71 and the Zen with a score of 93.

The car sector gained the most from the economic reforms and has achieved remarkable progress after the process was initiated in 1991. Undeniably, the industry is on the threshold of a revolution, not just in terms of increasing number of car manufacturers entering the market, but the intensifying competition that this would result in; the crucial task of continuous technological upgradation, however, will make all the differences for the players.
The next few years will obviously witness a quantum leap in production volume, but the impending question is whether the foreign collaborations with domestic car companies, now a common feature of this industry, would finally enhance indigenous design and production capabilities. There is also the glaring lacunae of inefficient infrastructure (roads, highways); in this context it is logical to question whether the present trend may be sustained in the absence of prompt efforts to fulfil the infrastructure requirements.

It should be noted that in addition to the domestic market, India is being used as a production base by leading international car manufacturers for markets in other countries.

The present boom phase in the car sector may be illustratively referred to as the launch stage with a number of new brands to touch the Indian roads, Mahindra & Mahindra in collaboration with Ford has plans to launch the Fiesta Model; DCM in a joint venture with Korea's Daewoo is launching the Cielo, Premier Automobile Ltd. (PAL) has launched a highly successful model of Fiat in January; Telco and Mercedes-Benz entered in to a joint venture and Mercedes Benz E 220 was launched a few months ago and the list is lengthier. It is evident that survival means a constant process of gearing up the automotive for the car industry, it is positioned today efficiency. The size of investment flows to the car sector can be gauged from Mahindra and Mahindra plan,
which "in respect of two projects put together is expected to be in the range of Rs. 2,400 crore spread over a period of six to seven years."

Determining the brand share of the market for each manufactures is going to be a difficult task as the decisive factor for a company would be its efforts to have on edge over the competitors brands. The long term perspective extends beyond the 'lucrative business opportunity' premise to that of developing a local industry that will not only produce volumes but will be able to do so using indigenous inputs, and at a later stage, design the local capability. It may sound a tittle rhetoric if one speaks of complete indigenisation because the past is a reminder that this is not always a feasible or a profitable option.

At the other end also the development of the local car industry should not completely be dependent on collaboration with leading internationals car manufactures and there should be a steady phase out process of developing local inputs wherever feasible for the production of the final product; this may, in all probability, be done in a joint venture with an international car manufacture.

This is because the Indian manufacturers are lagging behind in design technology. In order to obtain a new product design, the Indian auto maker in general has to decide from three options: in house development, obtaining the technology from abroad, a financial and or a technical collaboration.
In house design development is an option that is not, in the strict sense of the term, available to most car manufactures and among four wheeler manufactures only Telco, Bajaj Tempo, to a limited extent, Mahindra & Mahindra possess in house technological capabilities required for designing.

The advantages of possessing this are innumerable, an important one being the fact that companies who have sighed up collaboration agreements have the collaborators range to choose from, but this may not necessarily be completely appropriate for Indian conditions. However, in the Indian context, even Telco which has the best technological capability in the entire automobile industry does not have the ability of complete in house car design on par with international standards; it has to acquire some experienced design consultancy.

The quickest route, and one that is frequently resorted to, is a technical or and financial collaboration But, the pitfalls of this are many foreign exchange requirements, higher unit cost of the product etc.

Furthermore, dependence on collaborators for designs does not encourage the development of local designs since local manufactures are primarily engaged in car assembly operations, involving only a certain level of component indigenisation.

This is observably singled out as the best option in the initial stages of an industry's reorientation when production has to meet
international standards. However, subsequent stages have to aim at developing inhouse capabilities for the automobile.

An interim stage could be the purchase of a basic design from a design/engineering consultancy, as was done by the south east Asian counties for example, Malaysia, Indonesia, south Korea and its modification through re-designing and re-engineering in keeping with indigenous requirements.

The advantages of this are manifold: of a greater degree of independence for local manufactures and this would also enable the local car industry to have its distinct identity. But there is the inevitable risk of launching a new product that is not tried and tested else where, whether this can emerges an option for the industry is contingent upon the inherent skills of local firms to develop a base in the initial period that would enable a gradual process of in-house design development.

Not long ago, when the general status quo pervaded Indian industry, the entire Indian car industry was set with the usual problems of capacity under utilisation, limited exposure to competition, etc. This was in addition to the antiquated and bureaucratic system of products legislation.

However, as has been already indicated, the face of Indian car sector has undergone a drastic change in recent years.
It remains to be seen whether the Indian automobiles industry will be able to consolidate, given a certain specific time-frame and a distinct image identity.

A redeeming feature is the auto component sector which is growing rapidly and it is currently estimated to be an approximately Rs. 6,000 crore industry. Lack of quality consciousness has almost been overcome after the entry of Maruti. The automobile components sphere here is on par if not better than that of most south east Asian countries and China. Thus it would be plausible to say that this will offer a fine base for local products development.

As such, the Indian auto component sector now constitutes an export base for the Indian automobiles industry.

In the field of product development, Telco has made progress and the underlying strategy of this company, in so far as car manufacture is concerned, is the belief that in the small car segment a foreign designed car will not completely fulfil the needs of an average Indian, given of average Indian family size are developing a passenger car which would be in keeping with Indian road conditions.

In launching the E 220 in collaboration with Mercedes-Benz the initial output about 10,000 cars was intended to target the top end segment of the Indian automobile market. This is thus an instance of a company that has taken cognisance of product development.
In the car sector is to consistently attain the set production targets, the infrastructure constraints have to be looked into an urgent basis.

This issue is understandably outside the ambit of the car industry, to that extent, car production will be difficult to attain. By 2000 AD, the company expects the size of the passenger car market to be close to 7.50 lakh to 8.00 lakh cars. In other words, the coming five years will see a virtual doubling of the existing car market, thereafter, the market will grow by 10-15 percent per annum.

And according to independent projections too, annual car sales in India are set to increase from an estimated 4.32 lakh vehicles by 2000 AD to 6.11 lakh by year 2005. This itself should be self explanatory to the requirements on the infrastructure front.

**AMBITIOUS FUTURE PLANS OF MNCS FOR PASSENGER CARS**

The passenger car industry in the country is poised for revival this year with many new entrants in this sector queuing up to introduce new models. The expected spurt in growth will take place after the recessionary phase of the last two years during which sales of the leading manufacturers have risen only marginally.

The number of players in this sector has also multiplied and the Indian consumer will now have problems of plenty in terms of variety
and choice in the mid-size segment. The small car category continues to be dominated by the market leader Maruti Udyog but the consumer may soon be able to pick and choose models of different companies, judging by plans announced by several new entrants.

There is no doubt, however, that the joint venture, Maruti Udyog Limited is far and away the number one player in the passenger car sector with a commanding lead of 82 percent of the market. All the other passenger car producers share the balance 18 percent. As against the total output of 3.4 lakhs in 1997-98 by MUL, the second largest producer Hindustan Motors only had a total production of 22,790 cars.

Despite this impressive lead, MUL has been taking a complacent view of the passenger car scenario. It well aware that several world automobile leaders like Ford and Honda have managed to get a foothold in the Indian market and could ultimately emerge as serious competitors. No wonder then that MUL launched a revised version of the popular Maruti 800 model earlier this year despite being in the midst of a dispute between the joint venture partners over control of the company's top management.

New Entrants

The past few years have seen a proliferation of following the liberalisation of the economy. Hyundai Corporation has set up a
manufacturing unit near Chennai and is all set to launch the hatchback, Santro model this year as a competitor to the MUL's Zen.

The Japanese automobile giant Honda has set up a plant in Utter Pradesh and production of the "city", a mid-size modal devised for the Asian market, began in December 1997. General Moters, in a tie-up with Hindustan Moters, had already launched its Opel Astra about two years ago which the collaboration between Mahindras and Ford, Mahindra Ford India Limited, had introduced the Ford Escort almost simultaneously.

Hindustan Motors also has a technical collaboration with Mitsubishi of Japan and has launched the medium-sized lancer with a fairly high indigenous content Toyota of Japan too has arrived on the scene with its manufacturing facilities in Karnataka. Mercedes-Benz of Germany went into the luxury category by entering in to a collaboration with Telco and setting up a plant near Pune to produce limited quantities of the E 220 and the 250 D for the upper crust of Indian Society as well as to meet the needs of the Asian market.

It has not been easy going for the industry, however, as the presence of several models for the mid-size segment created a buyer's market and inventory levels have soared for the last two years. Most automobile companies aimed for the mid-size category initially in view of the fact that MUL, with its older plant and high indigenisation levels,
was difficult to beat price-wise in the hatchback category. The result has been a large number of models competing for a relatively small chunk of consumers.

With many new Models likely to be marketed in 1998-99 and no sign of an improvement in demand, there is bound to be severe, competition which may result in a significant change in market shares with no large increase in volume. The PAL Peugeot alliance could not meet the challenge with its Peugeot 309 as other companies had brought in more recent models. Instead, Premier Automobiles entered into a fresh collaboration with Fiat-Ind Auto Limited-to produce the hatchback, Fiat Uno which is proving quite popular as an alternative to the Zen.

Similarly, Daewoo sought to meet the competition by slashing prices drastically last year and sales of the Cielo began to rise once again in 1997-98. Simultaneously, auto finance companies and car dealers began offering discounts and free gifts to lure customers into buying cars in the mid-size segment where prices range upward of Rs.5 lakhs.

Despite such recessionary conditions over the last two years, most automobile companies remain sanguine over the prospects of growth in the Indian market. Looking at the long-term, the industry feels the upwardly mobile urban consumer will continue to lead demand growth over the next decade.
The Auto Expo gave ample evidence of this optimism as several companies unveiled new models in the upper range of the hatchback with prices likely to compete with MUL's Zen. These included Daewoo's Matiz, Hyundai's Santro and Ind Auto's Uno. The actual launch of these models will be in the later half of 1998 or early 1999.

The surprise new comer to the fray was Telco with its indigenous, yet to be named, small car. The prototype displayed at the Auto Expo has been widely admired.

While it is being examined whether a new trend in sales will emerge during the year, there may be a shake out with less popular models being phased out. In any case, with the next millennium round the corner, the Indian consumer will have plenty of variety to choose from while selecting a passenger car but producers will have to battle the well entrenched MUL to expand their share of the market.

**New Models Handicapped**

It is however, pertinent to note that not only would these new models face an entry barrier on price from the existing players but also find it difficult unless local content on the product is high from the beginning. For example, despite introduction of new products by the Indo-Japanese vehicles manufactures, only companies like Eicher Motors which focused on ensuring high local content, have been able to
consolidate their position by insulating themselves from foreign exchange fluctuations and maintain their presence in the industry.

Telco and Ashok Leyland too have massive investment plans in enhancing production capacity, setting up new state of the art plants, while the former is also making a foray into cars, the later is consolidating and doubling manufacturing capacity with emphasis on the Iveco range.

With the satellite TV media explosion, the Indian rural market has become accessible and offers tremendous potential for fast moving consumer goods (FMCG) and while goods. Vehicle needs both for Cargo and passenger will hence multiply with this opening.

Market research analysts also are positive on growth prospects of the commercial vehicles industry. While some are cautious on the growth in the short term, almost all predict steady growth in the medium to long term. At present, exports are about 5 percent of total sales of the CV industry. With the Government policy that encourages exports, increasing competition in the domestic market, new technology fuel efficient, low emission vehicles now being produced in India, exports will be a key thrust area for vehicle manufacturers in the medium and long term.

The major players are improving their product range to be internationally competitive. Telco products are being fitted with the
cummins engine, while Ashok Leyland vehicles are being upgraded with world renowned Iveco range. Eicher has introduced left hand drive vehicles with an eye on the foreign market. The companies are also working for improving their network and brand image internationally.

The coming years will be an interesting and cutting phase for the CV industry. The demand will continue to grow with the economy looking up. High investment and poor management in the Railways will not help them compete with the road transport industry. An increase in the product range and the entry of new players will make the market more competitive and provide for growth opportunities for such players who take the initiative and strive to tackle the market forces.

**FUTURE DEVELOPMENT**

In current car engine designs the scope for reducing pollutant formation seems to have been fully exhausted. Three way catalytic converter seem to be the best solution and all measures are being attempted to improve its conversion efficiency. A typical vehicle with today's catalytic converter emits about 80 percent of the total test cycle HC in the first 100 secs. This is because the catalyst has not reached its "light off" temperature (which is around 250 °c to 300°c) and the gasoline engines usually require a rich mixture for starting and three is lack of oxygen. The following measures allowing a faster warming up of the
catalytic converter are being considered as a single solution or in combination:

- Locating the converter close to the engine close coupled catalyst.
- Starting catalyst close to the engine.
- Electrically heated catalyst.
- Hydrocarbon trap to trap the HC when the catalyst is cold and passing the gases over the catalyst after it becomes hot.

New engine concepts such as lean engines and direct injection (stratified charge) engines are also being developed with renewed interest. These engines cannot sometimes meet NO targets and three way converters will not be useful because of lean operation.

De-NOx catalytic converters which reduce NOx by an entirely different mechanism such as Urea dosage system or controlled addition of fuel as reducing agents. These engines have the advantage of low fuel consumption. Other engine measures such as EGR and delayed ignition are also being attempted. By 2000 many Japanese car companies will produce DI gasoline engine cars.

The direction which the two wheeler technology will take in the future will be mostly evolutionary in nature and may follow the following trends.
(a) **Two Stroke engines:**

- Steps to reduce short circuiting (escape of fresh mixture directly into exhaust) by modified port design.
- Improved catalyst mounting to prevent mechanical damage.
- Fuel injection in the inlet port after closing of exhaust port to prevent short circuiting.

(b) **Four stroke engines:**

- Advanced fuel preparation system such as constant depression carburetor.
- Use of oxidation catalyst with lean calibration or Use of pulsair valve to admit air to aid oxidation.
- Use of three way catalyst and closed loop engine control.
- Electronic fuel injection.

The development process and final choice will depend on the relative cost and the regulations to be met.

Emission control on gasoline engines started in the late fifties in the U.S. from a small unit, called PCV valve, via engine modifications the way finally led to the introduction of today's most efficient emission control system for vehicles with gasoline engines, the there-way catalyst. This breakthrough was however possible only after introduction of unleaded gasoline. This shows that engine and fuel should be treated as an integral system and that both the auto and oil industries
have to contribute their part to achieve optimum results. When public
discussion comes to the diesel engine, the perception is that diesel means
smoke, soot and noise. The diesel engine is the most efficient power plant
for motor vehicles. Engineers faced the challenge either to abandon this
technology or clean it up to the satisfaction of scientists, politicians and
the public. A modern diesel passenger car can no longer be detected on
the road by noise, smoke or smell.

Large improvements are only possible by reducing sulphur
in the fuel and redesign of engines. Reduction of NO\textsubscript{x} in the presence of
oxygen (seemingly impossible task) is also attempted now by using De-
NO\textsubscript{x} catalyst.

We hear suggestions to ban two stroke or to ban diesels in
crowded areas and so on. The need to have a clean environment is
understandable and can be quantified but how to do it is best left to
experts. It has to be remembered that regulations should be developed
with regard to their intended performance. If they define design details
they would hinder or may even avoid technical progress and cost efficient
solutions.

**Diesel Cars**

The new generation diesel passenger cars are designed to be
lighter and less noisy apart from running at higher speeds. Since, they are
more fuel efficient when compared to petrol engines there has been a
steady increase in the proportion of diesel cars especially in some countries in Europe. However, the latest research reports indicate the presence of carcinogens in diesel engine exhaust and this may have an adverse effect on the sale of diesel cars in these countries.

**Widening Product Range**

The Indian commercial vehicle industry which has had a track record of product development to meet customer requirements, now offers potential for multi-faceted development to meet world standards. While the industry has always been on a developmental path, despite cyclical periods of buoyancy and performance are relevant.

First, there has been an exceptional and sustained demand pull in all commercial vehicle segments. Second, there have been sharper initiatives from the industry for diversification of model range to meet a broader spectrum of applications providing a wider base for growth in the coming years. Third, there has been an increasing emphasis on technology development to make the products more operator-friendly and environment-friendly. Fourth, the positive changes in regulatory and business environment in the post-liberalisation period have established a favourable frame-work for industry evolution.

The commercial vehicle industry had periods of duoyancy earlier. However, the demand pull experienced from end-1993 onwards has much more encouraging. Accelerated economic and industrial
growth as well as easy availability of finance were the prime factors for the demand pull. That the industry has so far taken the liquidity crunch in its stride points to the strong economic fundamentals influencing the demand for transport. To sustain the long term growth of the road transport sector at the current healthy pace, it is necessary of find solutions to the liquidity constraints.

It is also important to aim at a more secular development of transport demand. The growth in demand for goods carrying vehicles has singularly driven the demand for overall medium duty commercial vehicles during the last three years. The relative stagnation in the demand for buses cannot but be a cause for concern given the sustained increase in population and pressures on mobility. A policy for public transportation which will consider, among others, the role of State transport undertakings and funding of passenger transport sector is overdue.

There has been an increasing preference for specialised and multi-axled vehicles as well as tractor trailers during the last two years indicating segmentation of market with reference to specific application requirements and performance features. It also demonstrates a desirable, even if slow and belated, recognition of the need for such vehicles for overall transportation efficiency.
The new breed of vehicles feature drive-train combinations which are capable of high performance and are fuel-efficient. The new models will set high standards in performance, reliability and durability. The new designs emphasise better derivability, increased safety and riding comfort.

The continued focus on load carrying capability coupled with thrust on faster turnaround should lead to better economics for the operators, notwithstanding the price premium new technology and broader 'feature-scope' entail.

Technology developments including those caused by diversification of models and enhanced product features will provide new opportunities for the component makers to develop a new generation of components. New driver-friendly cab systems, comfort-oriented bus interiors, upgrades in all vehicle sub-systems will provide particularly relevant areas of business diversification for component and system makers.

De-licensing and de-regulation have been particularly welcomed by the industry. Improved accesss to technologies as well as funds have resulted in more aggressive corporate growth. The ancillary units should particularly benefit from this new business environment to achieve a more proactive role in vehicle development. Liberalisation,
however, has to make an impact in terms of transport systems and operations of road network per se, which is notable area of concern.

With the intensification of market forces and competition, there will be an emphasis on leaner manufacturing and just-in-time supply logistics. The focus in manufacture will, therefore, be not merely on hardware (for example, machine tools and equipment), but also on the software of farming out manufacture, integrating suppliers and vehicle manufacturers and new satellite based communication channels. Similarly, the focus of marketing will be on integrated communication systems for timely customer service. Management of logistics will be a new dimension of industrialisation in future, in which the road transport sector must have an active role.

The development of the commercial vehicles industry has been unique in recent years in that the growth has spanned several segments and has high technology content in some specific product and manufacturing initiatives. Growth based on economic fundamentals will be sustained over the next few years, helped by the introduction of new models.

The challenge that manufactures will face in future is to manage increasing product variety while containing the end-cost to the customer and shortening the response time between need for a product its service and availability thereof.
The weak points in future development unfortunately continue to be the poor and hazardous state of the road network and lack of proper policy for mass public transport by road. These two weaknesses must be urgently addressed by the Government for an optimised transport system.

**A NEW KIND OF CAR COMPANY**

Once it was the Japanese who turned the world's car industry upside down. Now it is the Germans. The merger between Daimler and Chrysler which was announced on May 7th will create the World's fifth-largest car company by volume, and one which shares the global reach of the top four. Daimler-Chrysler, as it is be called, will be owned 53 percent by Germany's biggest industrial firm and 47 percent by America's third-biggest vehicle manufactures. Its annual revenues will be around $130 billion.

At a stroke, the geography of the car industry will have been transformed. Detroit will no longer consist of two global giants, Ford and General Motors, and one regional car maker, Chrysler. In the American market, Chrysler, which has been weak in passenger cars, will be able to draw on the engineering expertise that has produced Daimler-Benz's Peerless Mercedes cars.

In Europe, a merger would have an even greater significance. The combination of Daimler and Chrysler probably means
that the days of the rest of Europe's regional car groups are numbered. The likes of Renault and Peugeot-Citroen, which are overly dependent on their home markets, must be quaking at this latest development. So too must Fiat, which is in the middle of an ambitious international expansion that does not include North America, the world's biggest car market. Daimler now leaps ahead of its German rivals, whose international plans suddenly seem puny by comparison. Indeed, BMW's boss, Bernd Pischetsrieder, called Daimler's move "courageous and strategically correct".

In Mercedes, all of the European car makers will now face a head-on competitor, with its own new small cars and the fire-power of its American friend. It is not so much that the Chrysler merger will instantly bring a flood of new small cars into Europe. Rather, the deal proves that Daimler is determined to make Mercedes a true volumes producer across the whole range. No longer can the French and the Italians patronize the Stuttgart company's efforts with the small A-class, which was reengineered after it turned over in a "moose test" and the upcoming wacky Smart car, which is small enough to put in the boot of a big Merc. Daimler has already invested $1 billion in that model.

Although a European industrial company has never made an acquisition on this scale, the most striking feature of the deal itself is not the size, but its unique structure spanning two continents. American and
Japanese companies (and some European ones) have been manufacturing cars in different places around the world for decades. Toyota, Honda and Ford can claim to be the most global today in the way they run their operations. But never has one of America's prime industrial companies let alone one of the big three car manufacturers been run at least partly from abroad, as Daimler Chrysler will be.

The new company would have an impressive range of models: Daimler's car-making division, Mercedes-Benz, produces the best luxury cars in the world, plus some innovative small ones just coming to market and several untried commercial ventures. With production heading for 1 m cars a year, it is already a volume producer rather than a special luxury car maker.

Chrysler's saloon cars are outgunned in America by Ford and GM, but its average profit for each vehicle is the highest of the big three thanks to its strength in minivans and Jeeps where margins are fattest. Chrysler clocked up profits of $1,468 for each sale last year, compared with Ford's $1,000 and GM's $683. Such margins will appeal to Mercedes, which makes $1,561 on its mainstream C-class cars and three times that on the posher E-class cars.

Moreover, Mercedes does not have strong products of its own in the minivan and jeep class, though its new American-built off-roader is promising.
The planned merger raises three questions. The first hovers over the new group's weakness in Asia and Latin America. These are relatively small markets, put the one where much of the future growth is expected despite Asia's recent troubles. Although Daimler has recently retreated a bit in China, the new car maker will at some point have to expand in Asia, possibly by forging links with Japan's troubled Nissan Motor, which was apparently in talks with Chrysler about a possible takeover.

A rescue of Nissan might make Jorgen Schrempp, Daimler's boss, uneasy. In 1996 he pulled the plug on the Dutch aircraft maker, Fokker, which he had failed to turn around. That leads to the second question: the future of all Daimler's businesses in sectors, such as aerospace, weapons and services which suddenly seem not to belong in what has become a car company. A merger between Chrysler and Daimler will almost certainly inspire deals elsewhere in the car industries. It might lead to deals in a host of other industries too, despite Mr. Schrempp's assurances as the deal was announced that Daimler will hold on to its non-automotive businesses.

But the biggest question is whether two companies can make this merger work. Maryann Kellyer, an American car analyst, accepts the logic of the merger, but fears that putting such different companies together will be difficult: "When it comes to the cultures of these two
companies how they think and act and what drives their decisions, they're oil and water," she says.

The firms are successful and complementary, and there will certainly bring some savings, such as in joint distribution. But realizing there savings will stretch the talents of Mercedes managers, who will have to raise the standard of Chrysler's passenger cars. Big expensive cars which drive superbly on the autobahn are not the same as the big cheap cars.

Chrysler is a lean North American producer, which buys 70 percent of this added-value from outsider; Daimler is a fully integrated German maker of luxury cars, famed for its world-class design and engineering. Chrysler has come back from the brink of bankruptcy twice in recent years. It survives thanks only to this distinctive and lean way of involving suppliers in its innermost thinking.

Chrysler has come as close to producing cars to the legendary Toyota lean standard as any other company. When it needed to cut costs to cope with a strong yen a few years ago, the Japanese firm acknowledged Chrysler's prowess by taking apart a little Neon car to see how the Americans has cut components to a minimum and designed for low cost and simplicity. Daimler will be tempted to impose its methods on Chrysler, But it has more to learn than it realizes form Chrysler's manufacturing skills. If it fails to recognize this, it is in for trouble.
AN EXCITING FUTURE

Telco faces the future with great excitement the new open market, competitive economy which is emerging in India, will certainly be challenging. Telco views the new competitive environment as the greatest "engine" to improve efficiencies reduce costs, improve quality and enhance focus on customer satisfaction. The company's performance will be measured in the coming years by benchmarking it against the worlds best practices. In endeavouring to achieve its goals, Telco will, at all times, ensure that the value systems and the business ethics laid down and practiced over the years are upheld.

India has transformed before everyone eyes over the post 5 years from a closed protected environment to on open-market competitive economy. There were those who feared this change and worked against the reform process in the belief that protection was needed for Indian industry. The view in Telco is that competition is the engine for improvement and that competition must be fought through competitiveness rather than through protection product quality, cost competitiveness and customer satisfaction will have to be the underpinnings of Telco's future business drive. Telco's future continues to be bright. The spirit of its people, the strength of its technical capability and the power of it production brand, coupled with the determination to
change with the changing times will make Telco one of India's most exciting companies.

The highly competitive future business environment in India will be invigorating and challenging. Industry and Governments must however accept that rationalising, re-engineering and re-focusing of industry will cause some short-term hardship for some enterprises in India, but thereafter, Indian industry as a whole will be leaner, more competitive and more customer oriented.

We look forward to this future environment with enthusiasm. The growing competition from international companies in the automobile Sector will undoubtedly be intense but this competition will also be an added motivation for Telco to achieve the aggressive goals it has set for itself. The company's plans call for higher levels of investments in modernization and technological up-gradation of various facilities to ensure that it remains competitive and technologically current.

It the coming years, Telco will focus greater attention on overall quality inducting fits and finishes. It will continue to improve the safety aspects of its vehicles and lead the industry in lowering emissions. Telco is one the move-in keeping with the changing times.

It's all happening in the Rs. 17,000 crore Indian car market sticker prices are being slashed, cars are being re-positioned, existing
models are being phased out or put through miner facilities and many new models are being lined up.

All this means that the Indian car market is going through a major restructuring exercise. Automobile experts see it more as a correction exercise. Automobile majors entered India without much homework and based their moves more on gut feel and a highhanded approach. Poor sales and luke warm response from consumers have seen some of the renowned names biting the dust.

One major folly of almost all the new entrants have been the over estimation of the mid-size car segment. No ways, Daewoo's Cielo, Mahindra-Ford's Escort and General Motors' Opal Astra had enough room even to reach break even. To boot, at least three new entrants- Honda city, Mitsubishi Lancer and Fiat Palio are targetting the mid-size car market.

Though the new entrants virtually wiped out most other age old Indian models-118 NE, Contessa and Ambassador-Maruti seems to have emerged unscathed. The reason it could fall back on its small car for profits.

It has become obvious now to all car makers to survive here, they have to tap the small car market in the Rs. 2.5 lakh to Rs. 3 lakh price bracket dominated Maruti-800 and the Zen. But not many companies were willing to take on the challenge. Many expatriate
officials misread the market hoping against hope they could dictate terms here.

Companies that were willing to heed the advice of their Indian managers seem to be better off B.B.R. Subbu Director marketing, Hyundai Motors has been able to convince his bosses in south Korea that the three-box. Accent should not be the first offering in India. He worked overtime to convince them that it is the small car that would do wonders is the Indian market.

Although the odds are staked against him, Hyundai's Santro is a dream come true for Korean engineers. They were able to develop a contemporary model for superior to the Maruti 800 in the Rs. 2.5 lakh to Rs. 3 lakh bracket. Now the Indian consumer will decide Hyundai's and Subbu's fate.

All this while another Indian manager has been struggling to sell the three box Cielo in the Indian market Daewoo would have loved to launch their small car, Tico, which is based on the same Suzuki platform. But under the technology transfer agreement between Daewoo and Suzuki, the Korean company was barred from launching the car in the country till 1997.

Daewoo hopes to create a new segment in between the mid-size segment and the Mercedes-Benz.
Mercedes-Benz is another player who has been forced to eat humble pie. Mercedes launched old models such as the E 220 between Rs. 23 lakh and 24 lakh.

Three years later, Mercedes is willing to learn from its mistakes. It has launched the latest series of E 250 with state of the art frills, at three-year old prices Rs. 23 lakh and Rs. 25 lakh. Going by the response from Indian customers at the top, Merc's Second home coming should be much more exciting.

Mahindra-Ford too seems to be leaning its lessons. The company launched the 1.3 litre petrol Escort when everyone, including its Indian partner, was crying the diesel model. Ford has decided to launched a three box Fiesta instead of the world-famous two-box Fiesta. The two-box model will be no match to Santro, Maruti, d'Arts and Telco's Mint on price, despite being superior.

With the there-box Fiesta, Ford has created a niche for itself between the Zen and Esteem. The only problem Daewoo is also eyeing the same market for cielo.

General Motors' Opel Astra may have emerged as the numero uno in the mid-size segment but its sales volumes don't do it justice. As first option, a diesel version of the Opel Astra is being contemplated.
Another change in plan. General Motors India was working towards launching the up market vectra model with a 2-litre engine, whose positioning and pricing would place it at the top of the mid-size segment. GM executives are now busy working on the up market, two box Corsa, popular in Europe. However, the Corsa would be hit badly by the surge of Models in the small car segment.

One must not overlook, in the crowd of newcomers, the formidable Telco and market leader Maruti Telco's Mint has taken not only the foreign competition, but also the Indian industry by surprise. The mind has already sent quite a few Auto giants back to the drawing board.

**Table No. 81**

**Taking The New Road**

<table>
<thead>
<tr>
<th></th>
<th>The Old</th>
<th>The New</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Motors</td>
<td>Opel Astra</td>
<td>Diesel Opel Astra, rethinking</td>
</tr>
<tr>
<td>(I)Ltd</td>
<td></td>
<td>Corsa launch</td>
</tr>
<tr>
<td>Mercedes-Benz</td>
<td>E220 in the luxury segment</td>
<td>Phasing out E220, introducing</td>
</tr>
<tr>
<td>(I) Ltd</td>
<td></td>
<td>E200, E230 at slightly higher price</td>
</tr>
<tr>
<td>Maruti Udyog Ltd.</td>
<td>800cc, Gypsy, Zen and</td>
<td>Cervo, diesel Zen, and diesel</td>
</tr>
<tr>
<td></td>
<td>Esteem</td>
<td>Gypsy</td>
</tr>
<tr>
<td>Daewoo Motors</td>
<td>Cielo</td>
<td>D'Arts, Nubira and Leganza</td>
</tr>
<tr>
<td>(I) Ltd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mahindra-Ford</td>
<td>1.3 petrol and 1.8 litre diesel</td>
<td>1.6 litre petrol Ford Escort</td>
</tr>
<tr>
<td>(I) Ltd</td>
<td>Ford Escort</td>
<td></td>
</tr>
</tbody>
</table>
### Table No. 82
**The New Contenders**

<table>
<thead>
<tr>
<th>Company</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyundai Motors</td>
<td>Launch Santro; postpone Accent launch</td>
</tr>
<tr>
<td>Honda SIEL</td>
<td>Launch Honda City</td>
</tr>
<tr>
<td>Mitsubishi</td>
<td>Launch Lancer</td>
</tr>
<tr>
<td>Skoda</td>
<td>Launch Felicia, Station Wagon</td>
</tr>
<tr>
<td>Fiat</td>
<td>Launch Palio</td>
</tr>
<tr>
<td>Telco</td>
<td>Launch 1400cc small car (codename &quot;Mint&quot;)</td>
</tr>
</tbody>
</table>

### Need to Seize the Initiative in Technology Absorption

The Car sector gained the most from the economic reforms and has achieved remarkable progress after the process was initiated in 1991. Undeniably, the industry is on the threshold of a revolution not just in terms of increasing number of car manufacturers entering the market, but the intensifying competition that this would result in; the crucial take of continuous technological upgradation, however, will make all the difference for the players.

The next few years will obviously witness a quantum lead in production volumes, but the impending question is whether the foreign collaborations with domestic car companies, now a common feature of this industry, would finally enhance indigenous design and production.
capabilities. There is also the glaring lacunae of inefficient infrastructure (roads high-ways); in this context it is logical to question whether the present trend may be sustained in the absence of prompt efforts to fulfil the infrastructure requirements.

It should be noted that in addition to the domestic market, India is being used as a production base by leading international car manufacturer's for market in other countries.

The present scenario in this sector has, however, been not brought about merely by economic liberalization; the groundwork began in the early eighties with the setting up of Maruti-Suzuki, a collaboration between the government owned Maruti Udyog Limited (MUL) and Japan's Suzuki Motor Corporation.

The size of investment flows to the car sector can be gauged from Mahindra and Mahindra plan, which "in respect of two projects put together is expected to be in the range of Rs. 2,400 crore spread over a period of six to seven years".

Determining the brand share of the market for each manufacturer is going to be difficult task as the decisive factor for a company would be its efforts to have an edge over the competitors brands.
### Table No. 83

**Production And Sales: Company Wise**

<table>
<thead>
<tr>
<th>Company</th>
<th>Production</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>91-92</td>
<td>94-95</td>
</tr>
<tr>
<td>DCM Daewoo</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hond Motors</td>
<td>16.0</td>
<td>18.7</td>
</tr>
<tr>
<td>Maruti Udyog</td>
<td>116.7</td>
<td>133.4</td>
</tr>
<tr>
<td>Pirmier Auto</td>
<td>32.6</td>
<td>18.6</td>
</tr>
<tr>
<td>Telco</td>
<td>1.1</td>
<td>9.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>166.4</td>
<td>190.2</td>
</tr>
</tbody>
</table>

To elaborate further, take for instance, Maruti-Suzuki, that has so far retained a sizable market share of 70 percent. But predictably, according to many car dealers, this may decline to about 50 percent or probably less than 50 by 2000 AD. If Maruti is to prevent a significant decline in its market share it has to undertake capacity expansion to the extent of 1,00,000 units which is the bare minimum required.

The reasons for this are evident: About half of Maruti's sales fall into the small car segment (this consists of Maruti 800cc and Zen) and this category of Maruti cars may find tough competition from Uno (launched by PAL), Telco's small car which is due this year, the Fiesta (launched by Ford in a joint venture with M&M).
### Table No. 84

**Financial Results Of Major Players**

<table>
<thead>
<tr>
<th>Items</th>
<th>Hind. Motors</th>
<th>Premier Auto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>A</td>
<td>415.6</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>307.5</td>
</tr>
<tr>
<td>OPM%</td>
<td>A</td>
<td>13.0</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>13.7</td>
</tr>
<tr>
<td>Net profit</td>
<td>A</td>
<td>19.7</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>4.2</td>
</tr>
</tbody>
</table>

[A- First half of 95-96, B- First half of 94-95]

It is expected that Telco's indigenously-developed car (with the help of Italian designers) which is produced with locally-sourced components would enable it to have a pricing strategy that could very well make it a substitute for Maruti's small cars.

The Maruti 800 needs a new and improved appearance and this has to be achieved without any price increases. So, once again, the route to consistent growth lies in expansion and modernization; the delay is the result of the ongoing imbroglio between Maruti Udyog and Suzuki on the broader issue of diluting the government's 49.73 percent stake in the Rs. 132 crore equity of this automobiles manufacturer, whose sales are projected to total Rs. 6,000 crore this year. Needless to say, the
differences will be resolved not on the basis of economic rationale but political compulsions and an essential factor will unequivocally be efforts to increase Japan's Foreign Direct Investment (FDI) inflows into India.

The long-term perspective extends beyond the 'lucrative business opportunity' premise to that of developing a local industry that will not only produce volumes but will be able to do so using indigenous inputs, and at a later stage, design the local capability. It may sound a little rhetoric if one speaks of complete indigenisation because the past is a reminder that this is not always a feasible or a profitable option.

At the other end also the development of the local car industry should not completely be dependent on collaboration with leading international car manufacturers and there should be a steady phase out process of developing local inputs wherever feasible for the production of the final product; this may, in all probability, be done in a joint venture with an international car manufacturer.

This is because the Indian manufacturers are lagging behind in design technology. In order to obtain a new product design, the India auto maker in general, has to decide from three options: in house development, obtaining the technology from abroad, a financial and or a technical collaboration.

In-house design development is an option that is not, in the strict sense of the term, available to most car manufacturers and among
four-wheeler manufactures only Telco, Bajaj Tempo, to a limited extent, Mahindra & Mahindra posses in-house technology capabilities required for designing.

The advantages of possessing this are innumerable; an important one being the fact that companies who have signed up collaboration agreements have the collaborators range to choose from; but this may not necessarily be completely appropriate for Indian conditions. However, in the Indian context, even Telco which has the best technological capability in the entire automobile industry does not have the ability of complete in-house car design on par with international standards; it has to acquire some experienced design consultancy.

The quickest route, and one that is frequently resorted to, is a technical or/and financial collaboration. But the pitfalls of this are many foreign exchange requirements, higher unit cost of the product etc.

Furthermore, dependence on collaborators for designs does not encourage the development of local design since local manufacturers are primarily engaged in car assembly operations, involving only a certain level of component indigenisation.

This is observably singled out as the best option in the initial stages of an industry's reorientation when production has to meet international standards. However, subsequent stages have to aim at developing in house capabilities for the automobile.
An interim stage could be the purchase of a basic design from a design/engineering consultancy, as was done by the south-east Asian countries, for example, Malaysia, Indonesia, Southkorea and its modification through re-designing and re-engineering in keeping with indigenous requirements.

**Table No. 85**  
Production And Sales Of Cars

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Nos.</td>
<td>% change</td>
</tr>
<tr>
<td>1991-92</td>
<td>166.4</td>
<td>-8.3</td>
</tr>
<tr>
<td>1992-93</td>
<td>163.1</td>
<td>-2.0</td>
</tr>
<tr>
<td>1993-94</td>
<td>209.7</td>
<td>28.6</td>
</tr>
<tr>
<td>1994-95</td>
<td>264.0</td>
<td>25.9</td>
</tr>
<tr>
<td>1995-95</td>
<td>243.6</td>
<td>35.2</td>
</tr>
</tbody>
</table>

April- December

The advantages of this are manifold: of a greater degree of independence for local manufacturers and this would also enable the local car industry to have its distinct identity. But there is the inevitable risk of launching a new product that is not tried and tested elsewhere. Whether this can emerges an option for the industry is contingent upon the inherent skills of local firms to develop a base in the initial period that would enable a gradual process of in-house design development.
Not long ago, when the general status quo pervaded Indian industry, the entire Indian car industry was beset with the usual problems of capacity under utilisation, limited exposure to competition etc. This was in addition to the antiquated and bureaucratic system of product legislation.

However, as has been already indicated, the face of Indian car sector has undergone a drastic change in recent years.

It remains to be seen whether the Indian automobile industry will be able to consolidate, give a certain specific time-frame and a distinct image identity.

A redeeming feature is the auto component sector which is growing rapidly and it is currently estimated to be an approximately Rs. 6,000 crore industry. Lack of quality consciousness has almost been overcome after the entry of Maruti. The automobile components sphere here is on par if not better than of most South-East Asian countries and China. Thus it would be plausible to say that this will offer a fine base for local products development.

In launching the E 220 in collaboration with Mercedes-Benz the initial output of about 10,000 cars was intended to target the top-end segment of the Indian automobile market. This is thus an instance of a company that has taken cognisance of product development.

If the car sector is to consistently attain the set production
targets, the infrastructure constraints have to be looked into on an urgent basis.

This issue is understandably outside the ambit of the car industry; to that extent, car production will be difficult to attain.

As indicated by Mahindra and Mahindra, "the automobile industry in India will produce about 3.50 lakh this year. Next year, the production is expected to be close to 4.5 lakh cars".

By 2000 AD, the company expects the size of the passenger car market to be close to 7.50 lakh to 8.00 lakh cars. In other words, the coming five years will see a virtual doubling of the existing car market. Thereafter, the market will grow by 10.15 percent per annum.

And according to independent projections, too, annual car sales in India are set to increase from an estimated 4.32 lakh vehicles by 2000 AD to 6.11 lakh by year 2005. This itself should be self explanatory to the requirements on the infrastructure front.
### Table No. 86

**Foreign Collaborators**

<table>
<thead>
<tr>
<th>Indian Co.</th>
<th>Collaborator</th>
<th>Name of car brand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindustan Motors</td>
<td>General Motors (USA)</td>
<td>Opeal Astra premier</td>
</tr>
<tr>
<td>Automobile</td>
<td>Peugeot (France)</td>
<td>Peugeot-309 TELCO, Mercedes</td>
</tr>
<tr>
<td>Benz (Germany)</td>
<td>Mercedes-220 E</td>
<td>DCM Daewoo Motors (Korea)</td>
</tr>
<tr>
<td>Cielo</td>
<td>Sipani Automobiles</td>
<td>Rovers Group (UK) Montego</td>
</tr>
<tr>
<td>Mahindra &amp; Mahindra</td>
<td>Ford Motors (USA)</td>
<td>Escorts &amp; Fiesta Shriram Indl.</td>
</tr>
<tr>
<td>Enterprises</td>
<td>Honda Motor Japan</td>
<td>Honda</td>
</tr>
<tr>
<td>Hindustan Motors</td>
<td>Mitsubishi Corpn. (Japan)</td>
<td>Lancer</td>
</tr>
</tbody>
</table>

*Ventures As Approved By The Government*
AUTOMOBILISATION AND DEVELOPMENT

Automobilisation is a prescription for mal-development, writes a veteran journalist (Praful Bidwai) in a leading English daily. It would be interesting to know whether he actually abjures the use of private automobile in favour of buses for city trips.

The main arguments advanced by Bidwai against Indian's automobilisation (automobilisation itself not a happy expression) are: drain on foreign exchange, uneconomic production units, adverse effects on public transport, and misappropriation of social resources by car owners; plus the usual ones of cars causing congestion and pollution.

All these sound as valid arguments. Yet a closer examination would reveal that they tend to oversimplify matters, even harbour a few fallacies.

Take the foreign exchange angle. Perhaps one of our biggest hang-ups has been about the outgo of foreign exchange, having lived through decades of exchange shortages. There is really no intrinsic merit in keeping down import, more so imports that further economic efficiency and consumer satisfaction, if exports can match up. A rising volume of international trade, not economic self-sufficiency, is now the hallmark of development.

Currently we are importing a lot of auto components, and CKD kits—an inevitable consequence of rapid modernization of the
automobile sector in recent times. But there are clear indications that this is set to change; the sector is attracting considerable expertise and investment. With world-level automobile manufacturers sourcing more and more components from India for their local units, the country should in due course emerge as one of the major manufacturers and exporters of automobile parts. And that could be big business—an automobile is simply a sum total of its parts. Exporting components is also easier than exporting cars; you only have to convince purchase managers of a few automobile factories abroad about your quality, price and delivery.

Admittedly, automobile production has certain economies of scale, and currently Maruti Udyog Limited is the only one falling into that category, with an output of over 1,00,000 units. But the free play of market forces will generate optimum-size production in due course; auto manufacturers now coming in are hard-headed businessmen who know their sums. Some existing units will expand, others will merge, some even wind up, till the efficient ones gain their optimum size. This process obeys its own logic and should pick up speed as the demand for cars escalates. The same is already being witnessed in the case of motorized two-wheelers.

How private cars affect public transport is rather a complex affair, not a straightforward one of perennial conflict. Countries like England or France have far more cars than us, and yet they have more
buses per capita than us, let alone their metros. And they commonly manage to speed up their buses through special lanes and tailored intersection lights.

Surely a full bus saves on road space as compared to a dozen cars carrying the same number of people. And this makes a good case for buses enjoying a certain priority on busy roads at peak times, but that does not automatically mean that people who can afford to own cars would be dissuaded from buying them. Wherever the bus offers a comfortable and quicker mode of transport for a particular trip, commuters may well opt for it, yet keep a private car for other journeys. Bus, for example, isn't the ideal transport, if one is loaded with groceries.

Bidwai is less harsh on motorized two-wheelers as compared to cars. Actually two wheelers are more disruptive of traffic than cars, and for more polluting, besides being riskier-nothing to match the stability of four wheels. Two-wheelers are indeed an intermediate mode; they get replaced with cars as incomes rise.

No invention matches the automobile in meeting the human desire to traverse distance with speed, freedom, privacy and comfort. Little wonder mankind's "affair" with the automobile stays strong despite traffic congestion and parking problems in cities. As income rises, acquiring private transport become a top family priority.

This is a world wide phenomenon, and India can be no
exception. Indians, like people elsewhere, are attracted to cars and consumerism. Automobilisation that way is simply a manifestation of growing affluence. And happily, a wider choice of cars is now available. It heralds the end of "lost decades" when one yearned for years for a Bajaj scooter and paid black-market price for a Padmini. As a State Transport Commissioner in 1970s, half of my time was taken up merely allotting scooters and cars.

Another factor that is easily lost sight of when criticizing people's "craze" for cars and two-wheeler is the poor condition of our city bus service. Buses are mostly overcrowded, uncomfortable; waiting for a bus and then boarding it is often a hassle. Our bus fares have to be kept necessarily low to cater to low-income passengers, and this means shoddy buses and poor service unless heavily subsidized. In cities like Calcutta, and increasingly in Delhi, we have taken the easier option of private buses which don't have to be subsidized, but then you get chaotic traffic conditions and all the ills of single-owner private bus operations. The best bet for a metropolitan city still public sector buses.

The ideal thing for big cities is, of course, a metro; no other mode of transport can move such large numbers in safety and speed, without doing harm to the environment. Yet even a widespread network of metro does not displace the private car; the latter carries its own unique appeal.
On one point, however, Bidwai is quite correct; car owners are being allowed to misappropriate social resources. Cars have eaten into space used by pedestrians and cyclists, made walking and cycling less enjoyable, even hazardous. Central shopping and entertainment areas are cluttered with automobiles and choking with auto fumes. The quite of many a residential area is shattered with vehicular congestion and noise pollution.

Car owner are influential people and influential people have a knack of social resources. It's not the car so much to blame as the car owners, compounded by the inability or disinclination of our civic authorities to control the car.

There is a world wide movement to pedestrianize selected central shopping and entertainment streets or squares, with car entry blocked out at busy times. We can do the same in Connaught Place, Chandni Chowk, and some other places. Pedestrianization is usually opposed by affected traders but experience shows that they too gain eventually; pedestrian streets turn into popular, fashionable streets.

Parking charges are perhaps the only factor that strike the motorist as crucial in making journeys to 'cities' central areas. The cost of petrol or the congested traffic conditions hardly prove a deterrent. Not, for that matter, any appeals by authorities to pool vehicles or otherwise cut down on car trips. London has amply demonstrated it through not
only high parking charges but reducing parking space in central areas. We have a long way to go in this direction. For example, Delhi hasn't yet worked out the basics of a parking policy, what to say of implementing any. Someday we will have to operate parking metres with a time charge, and come down heavily on vehicles parked in non-parking places, more so on pedestrian pathways. The situation where cars stay parked the whole day long in Connaught Place for free or paying a nominal charge can't continue; they misappropriate one of the most expensive space.

But possibly the worst misappropriation of social resource is the low road tax levied on cars and two-wheelers. A yearly tax of Rs. 150 or so for a car in Delhi (again frozen for years) is no charge for the services a car uses in a whole year; expensive roads, street lighting, traffic lights and traffic cops. Surely someone is subsidising it, and that's the tax payers.

And what about other costs that cars inflict in the shape of air and noise pollution and road accidents? The polluter to-pay principal is not being applied, and that also on the most affluent section of the society.

There is a strong case for jacking up the road tax, may be tenfold, with the proceeds to be used for improving the city's public transport, and facilitating walking and cycling.

The automobile is almost unrivalled in improving mobility
and boosting efficient functioning. And automobilisation, without a
doubt, generates much economic activity. The automobile has again
shown gratifying adaptability: it's significant safer, fuel efficient and less
polluting. And further improvements are on the way. Indeed the
automobile is being reinvented.

But then auto use has to be appropriately controlled. And
here our civic authorities are often remiss.

**Auto Industry Perturbed Over WTO Commitments**

From the position of extreme seller's market, the automotive
industry has turned into a buyer's market during the last five years
consequent to the broad banding and liberalisation. The situation is akin
to the conditions in the white goods industry where the customer is
enticed by substantial price concessions, easy financing, etc. The day is
not for off when every new car sale will be possible through a buyback or
disposal of a second-hand car.

The cutting edge would be the product appeal and, more
importantly, the after-sales service. Hence, there will be and increasingly
stiff fight in the domestic car industry in the years to come.

But the domestic bottle for the consumer will only be part of
the challenge that the industry could face. By 2003 this crowded business
will be up against a new threat-imports.

Under the time-bound programme that India has committed
to the World Trade Organisation (WTO), all quantitative restrictions (Qrs) on automobile and auto parts are to be lifted by 2003 and these products put on the Open General Licence (OGL). In fact, this means that the Indian consumer will have the option, in four years, of importing vehicles instead of buying them from local manufacturers.

**Main Drawback**

The big treat to the industry in dismantling the Qrs is, in my view, focussed on passenger cars. The reason: unlike tractors and commercial vehicles, Indian car makers do not have volume capacities that would allow them to compete easily on price. This is particularly true of many of the newer ventures.

The prediction is that small car manufacturers will be less hard hit since they will be able to have a larger capacities to a potential huge market. The general feeling is that the mid-size segment, with its small capacities, will not be competitive.

The other side of picture is that the price of some Indian passenger cars rate among the cheapest in the world indeed. Only three of four foreign models can compete with India in the new model stakes.

For another, given the lower input costs (notably labour), car manufacturers in India can break even on far lower annual capacities—some say as low as 35,000 cars—compared to the minimum 1,00,000 cars that Western manufacturers need.
But it is not any danger from new foreign cars that has got industry worried. Right now, the major concerns centre on the second hand car imports that could flood the market. Used car imports could have an edge. Abroad even a one-year car depreciates substantially. There could well be a flood of used-car imports from Japan, where even five year vehicles are considered obsolete and their exports encouraged. Many of these cars need to be modified for India to suit rougher Indian road. In India we have excellent reconditioning skills.

The industry is now worried about the implication of the WTO commitments because it has been slow to react to these challenges. The WTO commitments were made in 1995; it is only recently that a panel was constituted to suggest measures to cope with the treat, some of which are still being argued out between established manufactures and new entrants. What are the options before the industry now? The easiest way would be to keep the tariffs high. This is the option currently popular with the industry.

**Duty Structure**

In fact, one of industry's key suggestion is a cascading fivetier duty structure that puts a 100 percent duty on second-hand vehicles, 70 percent on new completely built units (CBUs), 40 percent on completely knocked down kits (CKDs), 20 percent on components and 100 percent on raw materials and capital goods.
There is some rational in this duty structure since it is designed to encourage domestic value addition. This is important for an industry that provide indirect/direct employment to about 10 million people. But high tariffs on second-hand and new cars can, at best, be a "short-term way of restricting market access. "Japan and the US are quite likely to lobby for reductions in tariffs.

The other alternative could be to restrict vehicle imports on the basis of emission norms. In four-wheelers, in general, despite the introduction of fuel injection engines in some of the new passenger car offerings, India would be hard put to raise such barriers. The Indian industry will fulfil Euro-I norms, which were announced in 1993, only in 2000. The European industry is already talking of Euro-3 norms by 2000.

The battle for the Indian automobile industry, therefore, will really be fought as much on technology and service as on price. Domestic producers will bank on consumer resistance to imported second-hand cars that may have no after-sales back-up.

To be sure, the industry has started the shift. The crowd in small cars is one index, the other being the hefty price and attractive finance schemes witnessed.

The next decade promises to be an interesting period of the auto industry. It will also be a period of intense challenge and abundant opportunely for the engineers and managers.
THE ACTION ON CUSTOMER BEHAVIOUR

The automobile of today is no longer the relatively simple machine it once was many moons ago. Compared with the cars of the 50s, today's motorcar bristles with electronics, processors and sensors coupled to complex mechanicals that are built to function effectively within very tight tolerances. This necessitates a high degree of competence as regards the ability of dealers to provide an effective and timely service. Any efficient or viable motorcar or passenger transport solution depends heavily on this parameter, as do future sales of the company manufacturing the vehicles.

No matter what you drive, at whatever price, your satisfaction with the overall package is of as much importance to you-the customer-as it is to the manufacturer of your vehicle. While we cannot state with any degree of certainty, as to the repurchase intent of the customer who is satisfied, we can presume-with a fair degree of confidence-that given a reasonable or competitive choice, a customer who has a very low degree of satisfaction will not be amongst those who will repurchase the brand.

J.D Power & Associates Customer Satisfaction Index (CSI) is a customer-driven measure of the overall satisfaction that summarises the data collected through the survey. It gauges relative levels of automotive consumer satisfaction based on experiences during the first
six to 18 months of car ownership. The 1997 India CSI Study covers nine Indian passenger car manufacturers, from whose customers (car owners) around 2,400 samples were taken from Mumbai, New Delhi, Chennai, and Calcutta. While the India Initial Quality Study (IIQS), (AUTO INDIA, November 1997 issue) was conducted with individual passenger car models as the subject, the CSI is an overall index of the car manufacturer along with its dealers. A list of the manufacturers included in this year's CSI study is given below.

1. Maruti Udyog
2. Daewoo Motors
3. General Motors India
4. Mahindra Ford
5. Hindustan Motors
6. Mahindra & Mahindra
7. Telco
8. PAL-Peugeot
9. Premier Automobiles

**Methodology**

Unlike the IIQS study whose results were presented in terms of problems per 100 vehicles (PP100) the Customer Satisfaction Index (CSI) as the title suggests, is an indexed value. The indices appearing in this year's CSI have been calculated with the help of what is called factor analysis Variables with a high degree of statistical correlation have been
grouped together to from the six factors which were assigned proportional weight as regards their impact on the overall score as perceived by the respondents. Of the total variables in the questionnaire, 23 were included in the factor analysis. Since each of the six factors were analysed as independent variables, a regression analysis was conducted to determine the weight for the dependent variables. This regression analysis indicated amazingly that two factors-Problems experienced and Service Advisor-together contribute a total of 80 percent to the overall index (CSI).

Simply put, what all this statistical gymnastics boils down to is that the CSI score for any manufacturer, say Mahindra Ford's 112, means that when all Mahindra Ford owners are grouped together they have a CSI score of 112. Another point which needs to be understood here is the fact that the industry average has been indexed as 100, with the rest following appropriately. As it has done with the IIQS, J.D. Power will not be releasing the results for those companies that have placed below the industry average.

Even a casual glance at the India CSI ranking for 1997 (Figure1) reveals that Mahindra Ford, with a CSI of 112, has put a fair amount of distance between itself and the rest of the competition from 103 for General Motors India (GMI) and Maruti Udyog (MUL) to 101 for Premier Automobiles (PAL). A look at the CSI Table, which is split between the six factors, allows a more detailed strength/weakness analysis as regards the five above-industry average manufacturers.
<table>
<thead>
<tr>
<th></th>
<th>CSI</th>
<th>Service Advisor</th>
<th>Problems Experienced</th>
<th>Service Timing</th>
<th>Service Performance</th>
<th>Service Explanation</th>
<th>Loaner Vehicle Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor weight (%)</td>
<td>-</td>
<td>49%</td>
<td>31%</td>
<td>10%</td>
<td>6.5%</td>
<td>2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Mahindra Ford</td>
<td>112</td>
<td>116</td>
<td>106</td>
<td>107</td>
<td>113</td>
<td>111</td>
<td>114</td>
</tr>
<tr>
<td>Daewoo Motors</td>
<td>102</td>
<td>103</td>
<td>99</td>
<td>102</td>
<td>99</td>
<td>106</td>
<td>102</td>
</tr>
<tr>
<td>Premier</td>
<td>101</td>
<td>102</td>
<td>98</td>
<td>101</td>
<td>102</td>
<td>105</td>
<td>98</td>
</tr>
<tr>
<td>Automobiles</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Industry average</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
The 1997 Indian CSI comprises six main factors:

Service Advisor (Factor Weight 49 Per Cent)

Among the individual factors, the one having the greatest impact on the CSI is the 'Service Advisor'. With a factor weight of almost 50 percent, the Indian motorist has made it abundantly clear that service point men play an extremely important and pivotal role in overall customer satisfaction. The service Advisor is the first point of contact when a customer arrives for vehicle repair or inspection on delivery—it is here that a relationship is formed with the customer of the total 23 questions, this factor is composed of eight questions that focus on the areas of direct customer contact, as well as questions on how the customer is personally handled, helped and advised by the Service Advisor. When sorted on the Service Advisor CSI alone, the lead held by Mahindra Ford (116) widens even further. Although 12 points away from Mahindra Ford, Maruti Udyog (MUL), the closest competitor with 104 points, has also done extremely well if one takes into account the size and spread of its dealers which are known to be bursting at the seams. MUL is closely followed by GMI and Daewoo Motors, both at 103, and PAL at 102.

Problems Experienced (Factor Weight 31 Per Cent)

This factor focuses both on the problems encountered at the time of delivery, and the problems that are experienced during the warranty period. Due to the harsh condition of Indian roads and the
relatively lower quality of Indian cars, efficient after sales-service is essential to keep a car running with minimal downtime. And, as were sure most of you have noticed, there is absolutely no better way of reducing customer satisfaction than putting an asset into a workshop or at a dealership for any unspecified length of time when it is still new. Mahindra Ford leads this segment again at 106 points, with GMI and MUL at 104 and 102, respectively, (maintaining the same order as in the IIQS). Daewoo Motors and PAL bring up the tail at 99 and 98 points respectively both below average for this segment. This indicates that despite Daewoo Motors recording internationally competitive figures for problems experienced in countries such as the UK, with the same model (the Cielo and the Nexia are almost identical), the company's performance in this sector, as per the Indian market has been distinctly below par. While the IIQS was conducted after the first three months of car ownership, the CSI, as mentioned earlier, is conducted to obtain the customer’s level of overall satisfaction experienced as per the manufacturer between the first six to 18 months of car ownership. Therefore this segment (problems experienced) provides a longer-term view of problems experienced as compared to the IIQS. Although the studies do vary when looked at in detail, this section when looked at in conjunction with the IIQS-offers the prospective customer a clearer picture. Maybe Quality is Job No 1 was not just a slogan at Ford Motor Company.
Service Timing (Factor Weight 10 Percent)

Even though most customers consider the time spent on a service as time lost, it's still surprising that this factor carries considerably more weight than Service Performance. It appears that the Indian customer is more concerned with services that are performed in a timely manner rather than the costs or the ultimate performance of the service. Customers who responded with a Yes to the question, 'Vehicle Ready When Promised', reported a score of 105, five points better than the industry average. On the other hand, those who responded that their vehicles were not ready when promised had a much larger deflection with an overall CSI of 82. Mahindra Ford seems to have taken off into the distance yet again with a CSI of a 107, with the rest of the bunch being led by Daewoo Motors at 102, GMI and PAL both at 101, and MUL just about making the average.

Service Performance (Factor Weight 6.5 Percent)

Service performance deals with the experience of the customer at the time of vehicle service. This factor which comprises five of the total 23 variables, looks into the competence of the mechanics and engineers as well as the environment in which the service is carried out. This field is led yet again, by Mahindra Ford (113) which leads MUL (105) by an impressive margin of eight point. PAL follows with 102
along with GMI, the latter slightly lower down the order than expected, possibly due to the problems GMI dealers experienced with the older Astra engine (16LZ2). The company that surprisingly fares the worst here is Daewoo Motors, which is at the bottom of the lot, despite its world-renowned excellence in the field of service performance.

**Service Explanation (Factor Weight Two Percent)**

When a car is serviced it is of paramount importance that the job undertaken is explained fully to the customer satisfaction, among other things, requires that detailed information and documentation as regards estimated service repair costs be provided to the customer. When the customer is left in the dark as per the work done, or is given an inaccurate estimate, the level of satisfaction quickly reduces and turnmee into suspicion or frustration. Here too Mahindra Ford leads in customary form, with a score of a 111, followed by Daewoo motors at 106, PAL with 105, GMI and MUL at 100 and 99 points, respectively

**Loaner Vehicle Provided (Factor Weight 1.5 Percent)**

This factor focuses on the facility of transportation provided when a vehicle needs to be repaired or serviced. Due to the fact that the majority of the automobile industry does not provide alternative transportation during service time, this factor still has a relatively low impact on overall CSI. However, this is an area where manufacturers and dealers can differentiate their service from the competition. Dealers who do offer this facility exceed their customers expectations, and the score
for those customers who did receive a free loaner car or alternative transportation clearly reflects this fact.

The process for improving customer satisfaction begins with a systematic review of dealer service activities. Manufacturers and dealers need to identify which dealer activities are expected to be provided by the customer or what are the customers expectations. The next step for the manufacturer is to ensure that its dealers fulfil these expectations 100 percent of the time. Mahindra Ford success, as far as the India CSI rankings go, stems from a simple fact that in areas where the industry fulfills a service activity or expectation 60-70 percent for the time, Mahindra Ford achieves a fulfillment level of these same activities at about 80-90 percent.

The Indian automobile consumer-ultimately the real beneficiary of the IIQS and CSI studies-has never had it so good as regards making an educated choice. Mr. J.D. Power's two epoch-making studies on the Indian automobile market (the IIQS and the CSI) have added an exceptional degree of clarity as regards the post-purchase experiences of the Indian automobile consumer.
### Table No. 88

<table>
<thead>
<tr>
<th>Make Repurchase Intention</th>
<th>IIQS</th>
<th>CSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Motors</td>
<td>77%</td>
<td>67%</td>
</tr>
<tr>
<td>Telco</td>
<td>71%</td>
<td>60%</td>
</tr>
<tr>
<td>Maruti Udyog</td>
<td>72%</td>
<td>55%</td>
</tr>
<tr>
<td>Mahindra Ford</td>
<td>67%</td>
<td>53%</td>
</tr>
<tr>
<td>Mahindra &amp; Mahindra</td>
<td>75%</td>
<td>53%</td>
</tr>
<tr>
<td>Hindustan Motors</td>
<td>65%</td>
<td>52%</td>
</tr>
<tr>
<td>Daewoo Motors</td>
<td>71%</td>
<td>49%</td>
</tr>
<tr>
<td>PAL Peugeot</td>
<td>64%</td>
<td>47%</td>
</tr>
<tr>
<td>Premier Automobiles</td>
<td>58%</td>
<td>39%</td>
</tr>
</tbody>
</table>

The above figures correspond to make repurchase intentions recorded after IIQS and CSI. Percentages are of respondents who ticked Definitely/Probably when queried as to their repurchase intentions. Note Telco's brand loyalty despite performance.
### Table No. 89

**Table 2: Number Of Repair Problems (%)**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>None</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four and more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahindra Ford</td>
<td>54.2</td>
<td>20.8</td>
<td>16.7</td>
<td>4.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Maruti Udyog</td>
<td>34.6</td>
<td>21.2</td>
<td>22.2</td>
<td>11.0</td>
<td>10.9</td>
</tr>
<tr>
<td>General Motors India</td>
<td>33.3</td>
<td>15.2</td>
<td>32.3</td>
<td>12.1</td>
<td>7.1</td>
</tr>
<tr>
<td>Premier Automobiles</td>
<td>30.0</td>
<td>15.3</td>
<td>19.4</td>
<td>8.8</td>
<td>26.5</td>
</tr>
<tr>
<td>Mahindra &amp; Mahindra</td>
<td>28.8</td>
<td>17.6</td>
<td>25.6</td>
<td>8.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Daewoo Motors</td>
<td>26.5</td>
<td>17.7</td>
<td>24.4</td>
<td>9.9</td>
<td>21.4</td>
</tr>
<tr>
<td>PAL Peugeot</td>
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<td>13.2</td>
<td>31.8</td>
<td>11.9</td>
<td>21.9</td>
</tr>
<tr>
<td>Hindustan Motors</td>
<td>20.8</td>
<td>13.4</td>
<td>17.3</td>
<td>18.3</td>
<td>30.2</td>
</tr>
<tr>
<td>Telco</td>
<td>12.4</td>
<td>12.0</td>
<td>31.1</td>
<td>15.7</td>
<td>28.8</td>
</tr>
</tbody>
</table>
Table No. 90

Table 3: Times Returned For Unsatisfactory Service(%) 

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>None</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>Four or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahindra Ford</td>
<td>90.3</td>
<td>4.2</td>
<td>5.6</td>
<td>0.0</td>
<td>0.0</td>
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<tr>
<td>Hindustan Motors</td>
<td>76.2</td>
<td>12.4</td>
<td>6.4</td>
<td>1.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Maruti Udyog</td>
<td>70.0</td>
<td>13.8</td>
<td>12.3</td>
<td>2.7</td>
<td>1.1</td>
</tr>
<tr>
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<td>69.4</td>
<td>16.5</td>
<td>8.2</td>
<td>3.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Mahindra &amp; Mahindra</td>
<td>68.0</td>
<td>16.0</td>
<td>10.4</td>
<td>2.4</td>
<td>3.2</td>
</tr>
<tr>
<td>Daewoo Motors</td>
<td>65.7</td>
<td>14.2</td>
<td>13.1</td>
<td>3.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Telco</td>
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<td>15.7</td>
<td>20.2</td>
<td>3.7</td>
<td>3.0</td>
</tr>
<tr>
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<td>21.2</td>
<td>18.2</td>
<td>5.1</td>
<td>2.0</td>
</tr>
<tr>
<td>PAL Peugeot</td>
<td>48.3</td>
<td>20.5</td>
<td>22.5</td>
<td>2.6</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Tables 2 and 3 are without doubt some of the most important bits of information provided by J.D. Power to the Indian automobile consumer as regards repair problems and satisfactory execution of repair work. A look at Table 2 shockingly reveals that for even the company at the top (Mahindra Ford) more than 45 percent of owners suffer atleast one or more problems with their vehicles. Of note also is the impressive performance of our part-PSU Maruti Udyog which has placed well in both tables. However, a look at GMI reveals that 32 percent of owners
suffer two or more problems, and that 18 percent return their vehicles twice for an unsatisfactory service. In defense, the new 16 NZR engine may rectify part of these problems.

**Delivery And Satisfaction**

Around 73 percent of the respondents noted that there were no problems with their vehicles upon delivery and had a CSI of 105, five points than the industry average. On the other hand, 27 percent responded that there were problems with the vehicle when it was delivered and had a CSI of 87.13 points below the industry average. This clearly demonstrates one of the key principles of customer satisfaction. When dealers carry out an activity that is more or less expected by the customer, their CSI score improves slightly. However, when dealers don't meet a customer's expectation, their CSI score suffers a significant drop. The formula is simple: meeting expectations will lead to satisfied customers; exceeding expectations will lead to extremely satisfied customers; not meeting customer expectations will lead to extremely dissatisfied customers.