

## **Recent Developments and Future Prospects in the Indian Automotive Industry**

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March 1996

### **Executive Summary**

The automobile market is growing at about 25% for the last three years. The number of persons per car is 200, which is very large compared to other emerging markets like Korea and Brazil which have about 12 persons per car. There is therefore a very huge untapped market. Uncertainty exists about the extent of growth, but a minimum growth rate of 20% is expected until the year 2000. Sales are expected to rise to anywhere between 850,000 to 1.5 million vehicles by the year 2000. Markets are highly price sensitive since a car is about 18 to 24 months salary for the average middle class buyer. However, incomes are rising and the economy has been growing steadily at nearly 6%.

Import duties on CKDs and components is 50%. Reduction of prices because of lower duties and taxes and progressive indigenization, and rising middle class incomes are likely to further increase industry growth rates. Penetration in rural and semi urban areas is extremely low and could provide fresh markets. New entrants will have to deal with uncertainty of demand, different and evolving customer needs, a relatively poor supplier base, a market crowded with competition and industry wide capacity shortages. However, if there is a shake out as many analysts expect, further opportunities for survivors will open up. Another implication is that India could emerge as a significant manufacturing base for exports. The supplier industry is also going through massive growth, although from a small initial base. Except for Telco, indigenous product development capabilities are very low, and the industry has some way to go before it becomes world class.

## Introduction

The Indian automotive industry has been growing for the third year in succession at over 25%. The number of persons per car is 200, which is very large compared to other emerging markets like Korea and Brazil which have about 12 persons per car. There is therefore a very huge untapped market. Since June 1993 when the Government changed its policy on automobiles, 13 Multinational Companies (MNCs) have announced plans to invest in India. Compared to three major models available in the Indian market until recently, customers can now choose from a wide variety of products. Mukherjee and Sastry (1996) provide an analysis of the entry strategies of new entrants.

The future looks promising since the economy has been growing at nearly 6% in real terms, inflation is relatively low at less than 6%, consumption is growing at 11%, and deregulation and market liberalization are now difficult to reverse. The following table gives an overview of the future prospects.

	Cumulative Investment		Turnover	
	1996	2000	1996	2000
Automobile Industry	80*	280	225	1200
Auto Components	35	135	70	700
Transportation Industry	300	900	2000	5000

\* All figures in billion Rupees. Currently, \$1 = Rs.35.

As the data shows, the automobile industry does not dominate the transportation industry. Out of \$17 billion fresh investments in the transportation industry up to the year 2000, only \$5.7 billion will be in the automotive industry. Turnover figures include sales for trucks, cars, utility vehicles like jeeps, and two wheelers. The share of passenger cars is much lower and is expected to rise from 11% currently to the 15% to 20% range by the year 2000. Some of the strengths of the industry are low labor costs, supportive government policies and trained manpower. Major weaknesses are a small and fragmented ancillary industry, poor infrastructure, low level of diffusion of lean manufacturing, improvements needed in quality and productivity, and lack of product development capabilities. The opportunities that the industry offers are a large untapped market, and a possible production base for exports. Some MNCs like Maruti-Suzuki have already started using their Indian plant for exports.

## Demand Estimates

A rapidly growing middle class, rising per capita income, and high levels of latent unsatisfied demand promise enormous opportunities. For instance, from current sales of 312,000 cars in 1994-95, sales are expected to rise to anywhere between 850,000 to 1.5 million vehicles by the year 2000. It is worth noting that in the past 15 years, all demand projections have been exceeded. It remains to be seen if this will be true of current projections also. The following table summarizes industry performance in the past five years.

	1991-92	1992-93	1993-94	1994-95	1995-96 (first 9 months)	Average growth since 1992-93
Production	198000	202500	257500	323000	N.A.	26%
Sales	202000	206000	260000	312000	287000	23%
Exports	25600	16000	19000	22900	N.A.	20%

Even though growth rates are impressive, uncertainty about the extent of demand growth persists for several reasons. The price to income ratio for the middle class consumer is too high. Currently the price of a car is about 18 to 24 months salary, and therefore price is perhaps one of the most important variables determining demand. However, incomes are rising rapidly and inflation seems to be under control. Prices are also likely to remain fairly steady as companies indigenize component production. Excise duties are high at 40%. If these are reduced, it is likely to spur growth. On the downside, infrastructure in roads is very poor, and traffic congestion in many cities is very high.

Of the total of 170 million families in India, effective purchasing power is estimated to be with 24 million families, which includes 4 million families which are in the top income bracket, and can buy luxury and premium cars. These figures are rising rapidly since the economy is growing steadily at 5% to 6%. Rural incomes compared to urban incomes are lower, but disposable incomes are higher because of lower house rents and cost of living, and because agricultural incomes are exempt from tax. The current state of rural roads is very poor. The government has allowed private parties to build international class highways and collect tolls in some areas. If roads in rural areas are developed, then car sales are likely to grow very fast since these areas have very low market penetration.

In addition to price, duties and taxes, economic growth and availability of adequate road kilometers, another factor affecting demand is availability and cost of credit. Vehicle financing has boomed, and currently is around \$1.6b, covering 25% of industry sales. This figure includes credit for all vehicles including two wheelers, trucks and buses. Many companies also provide new cars or soft loans for buying cars to its executives as perks. The following table shows the credit made available to customers over the last two years.

<b>Car Financiers</b>	<b>Credit Offered (Rs. billions) 1994-95</b>	<b>Credit Offered (Rs. billions) 1995-96</b>
Citibank	3.0	n.a.
Ford Kotak Mahindra	2.25	3.75
Apple	2.55	n.a.
SRF Finance	1.98	2.2
GLFL	1.90	3.8

Automobile companies have announced plans to instal capacity of around 900,000 vehicles by the year 2000. The following table shows the capacities planned by major players.

	93/4	94/5	95/6	96/7	97/8	98/9
HM	26137	26115	26000	25000	24000	23000
PAL	25002	27807	11000	11000	11000	11000
MUL	152539	199150	250000	300000	360000	420000
TELCO	3994	12540	25000	40000	82000	205400
PAL- PEUGEOT	-	-	14000	30000	45000	55000
DCM DAEWOO	-	-	20000	30000	37500	45000
M&M FORD	-	-	-	5000	15000	20000
GM-OPEL	-	-	3500	7500	12500	17500
FIAT UNO	-	-	-	5000	12500	17500
MERC TELCO	-	-	2000	5000	7500	10000
HM MITSUB	-	-	-	-	5000	10000
SIEL HONDA	-	-	-	2000	7500	10000
TOTAL	210672	265612	351500	460500	619500	844400
GROWTH RATE	28.6%	26.1%	32.3%	31.0%	34.5%	36.3%

It is estimated that the number of cars sold over the next five years is going to be anywhere between 2 and 3.5 million. The following table gives demand estimates made by various analysts. These figures do not include utility vehicle (jeep) sales, which are classified as "off road vehicles". Separate figures have been furnished for cars and for all vehicles including trucks, buses, utility vehicles and two wheelers.

<b>Report</b>	<b>Passenger Car Demand (2000 AD) in '000s</b>	<b>Total Vehicle Demand (2000 AD) in '000s</b>
DRI/McGraw - Hill	502	5,100
McKinsey - EU	833	4,700
Association of Indian Automobile Manufacturers (AIAM)	600	5,000
INFAC	580	3,900
Morgan Stanley	576	5,500
Manufacturers' estimates	n.a.	5,400
Based on mobility trends	1500	7,000

Source: Shah, S.G. "Shaping the Indian Automobile Industry," Association of Indian Automobile Manufacturers, 1996 ; Business Standard Corporate Bureau report "Demand for cars to zoom to 1.5 m : survey," Feb 1995.

Car sales are expected to be in the region of 600,000 to 1.5 million vehicles by the year 2000. The sales of lower end luxury cars is expected to account for 26% of the total market, i.e., 200,000 cars by 2000 AD. The industry will have to live with uncertainty for the next two years before things become clear.

## Industry Structure

Suzuki was the first MNC to enter India in 1981 through a joint venture with the Government of India and set up Maruti Udyog Limited. Currently, Maruti has around 70% of market share, and the Maruti 800 in the small car segment is the best selling model. Since 1995, the industry is witnessing a sea change with the introduction of several new models by MNCs coming into India through joint ventures with Indian partners. In the super-premium segment there is the Mercedes Benz's E-class sedan. BMW and Audi are also considering plans to sell cars. New introductions in the premium segment are General Motor's Opel Astra, PAL Peugeot's 309, Maruti's Esteem, Telco's Sumo, Estate and Sierra, DCM Daewoo's Cielo and Sipani's Montego. In the economy car segment, Fiat Uno and Telco are expected to produce 60,000 cars each per annum.

The power relationship between automobile companies, dealers and customers is going to change substantially as the industry moves from a supply constrained sellers market to a demand driven buyers' market. Thus dealers and customers are going to acquire greater power.

## Adoption of Lean Production

Since the Indian industry started mass production only in the mid 1980s with the arrival of Maruti Udyog Limited, the transition to lean production is likely to take time. With so many MNCs entering the growing Indian market, there will be a push towards lean production. Maruti has implemented JIT for some of its major suppliers. Some others are in the process of doing so. There is a stress on quality in the highly competitive industry. However, the success of lean production at the industry level depends not only on the efforts of the assemblers, but also on the suppliers and on institutional and cultural factors. The bargaining power of suppliers of some components is high, because of capacity constraints. This makes them accept only large orders, and therefore makes it difficult for assemblers to implement JIT.

## Government Regulations

The Indian government has made significant shifts in its policy towards the automobile industry. Ever since independence, the government considered the passenger car to be a luxury item, and imposed very high tariffs. Since the economic liberalization launched in 1991, the Government of India's automobile policy announced in June 1993 has changed. The excise duty varied as follows over the last five years.

1984-85	1990-91	1992-93	1992-93	1993-94
15%	42%	66%	56%	40%

The import duty on car components increased from 40% to 75% during 1984-91 and then came down to 50% recently. Thus duties and taxes continue to be high by international standards. These might be brought down as the industry becomes more competitive.

The Government of India has reduced its direct control on the automobile industry following the announcement of the new automobile policy. Entry of MNCs is permitted, either as joint ventures or on their own. However, the indirect impact of government policies on the industry still remains far from insignificant. The government has levied 110% customs duty on completely built units (CBU) and 50% on CKD and parts. There are several areas where there is ambiguity. At the moment, the duty on both CKD kits and components is 50%. However, though component imports do not require any license, CKD imports need a license. The difference between CKD and component imports has not been specified. This has helped companies to take advantage of the ambiguity. The phased manufacturing program (PMP) which was in force till 1993, and required component imports to be brought down within a fixed time-frame has been withdrawn. However, the licensing required by CKD assemblers from phase to phase and for capacity expansions puts

pressure on companies to indigenize.

## **Suppliers**

There are about 6,350 small and large component manufacturers in India, out of which about 350 are in the organized sector and are registered with the Automotive Components Manufacturers Association. There is a sizeable replacement market for parts and components, but this market is heavily dominated by manufacturers who sell unbranded products at very low prices. The component manufacturers therefore have to rely on assemblers in the domestic market. The industry had a turnover of about \$2.7 billion in 1995-96. Although this is not impressive, industry sales have been growing at nearly 35% since 1992-93, and turnover is projected to reach about \$6.4 billion by the year 2000. Exports are projected to reach \$565 million by the year 2000.

Tooling costs for suppliers remain the same for 10,000 units or for 100,000 units. Till assemblers achieve volumes, it is not profitable for suppliers to accept orders. Assemblers are thus forced to import components. This pushes up costs and currently prices as well, which in turn affects sales and growth. Maruti developed a quality vendor base over 10 years. However, new entrants can expect to develop a supplier base faster.

The supplier industry has had some success in developing parts and components including collapsible steering columns, brake linings, power steering, catalytic converters and central locking systems. Current technology upgradation is in plastics, trims, electronics, anti locking braking systems and environment and safety related items and materials. International supplier firms are looking for Indian partners in a variety of areas. Thirteen new joint ventures in 1995, and many more technical collaborations were finalized. A large business delegation from CLEPA, the Liaison Committee for the European Automotive Components and Equipment Industry visited India in February 1996. Further collaboration between Indian and European suppliers is likely to take place.

Industry analysts expect that products made by new joint ventures will not only serve the Indian market, but would also be exported. Focus is shifting from traditional markets in Africa, the Middle East and Africa to North America, Europe and Australia.

## **Market Segmentation**

The Indian automobile market is still in its evolutionary stage. Therefore, no fixed or widely accepted method of segmenting the market has evolved as yet. The segmentation we provide is based on an understanding of the current state of the industry. As such, these segments are quite different from the segments known in the US, European or Japanese industries. The following segments have been identified :

- 1) Off-road or utility vehicles e.g., Maruti Gypsy, Mahindra Armada, Tata Sumo.
- 2) Economy segment, comprising cars priced at less than \$ 13,333, e.g., Ambassador, Premier Padmini, Maruti 800.
- 3) Luxury segment, comprising cars in the \$ 13,333 to \$ 33,333 price bracket, e.g., Zen, 118NE, Contessa, Esteem, Sierra, Peugeot, Astra, Cielo, Ford Escort, VW, Mitsubishi Lancer.
- 4) Super-luxury segment, comprising cars priced at higher than \$ 33,333, e.g., Mercedes-Benz, BMW, Audi.

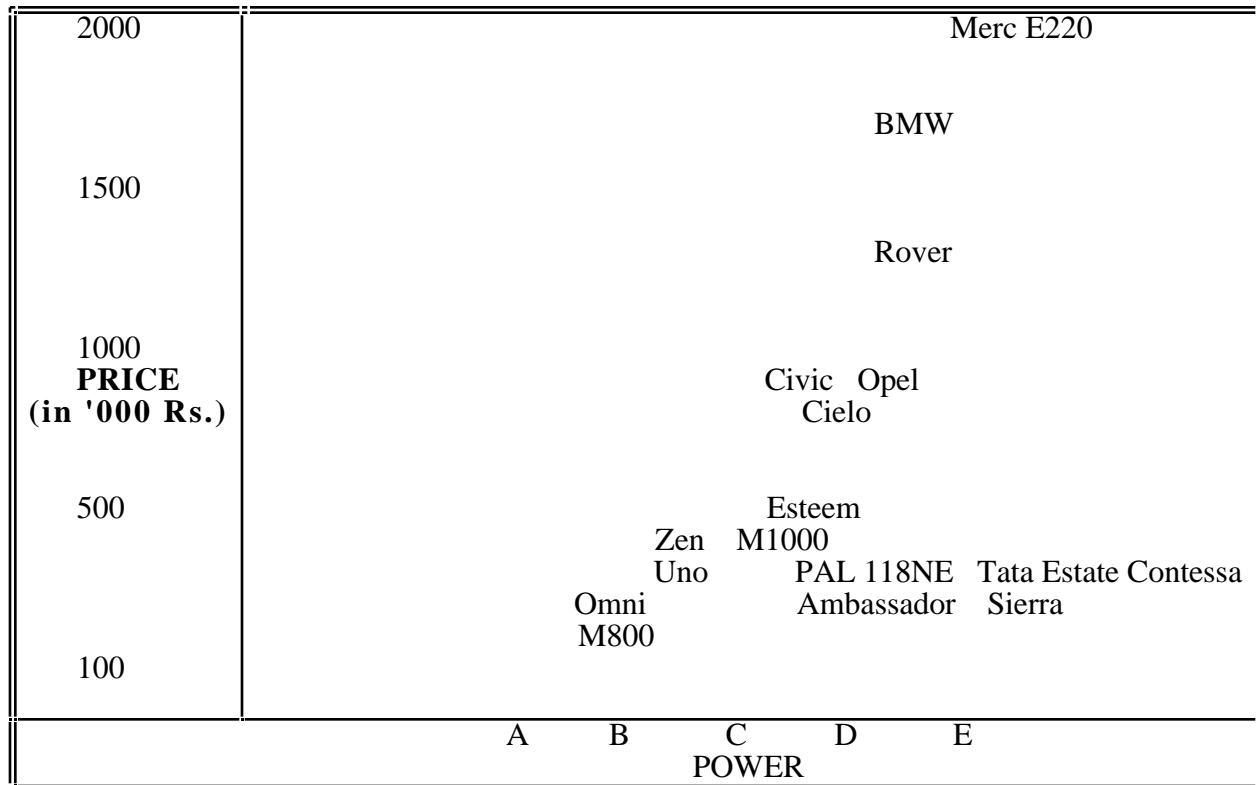
The following table summarizes the market situation.

SEGMENTS	ECONOMY	LUXURY	SUPER-LUXURY
MARKET SHARE (1994-95)	79.6%	5.7%	15.0%
BUYER PROFILE	* Households	* Households	* Corporates
KEY ATTRIBUTES INFLUENCING CHOICE	* Price * Operating costs * Driving ease	* Power * Comfort	* Safety
DRIVEN BY	* Owner	* Owner mainly	* Chauffer
MODELS	* Ambassador * Premier * Maruti 800	* Zen * 118 NE * Contessa * Esteem * Sierra * Peugeot * Astra * Cielo * Ford Escort * VW * Mitsubishi Lancer	* Mercedes Benz * BMW * Audi
GROWTH RATE pa (last 3 years)	16%	140%	65%
DEMAND DRIVERS	* Household incomes * New products * Corporate executive perks	* Status symbol * New models * Financing schemes * Income distribution	* Rising affluence
OWNER PROFILE	* Small businessmen * Corporate middle-level executives	* Senior corporate executives	* Businessmen * Diplomats and expatriate managers
BASIS OF COMPETITION	* Product features * Price * Distribution/spares network * Mfg. expertise * Funding schemes	* Product features * Price * Distribution and services	* Positioning * Spares network

Source : INFAC report on Cars.

There is a significant variation in demand in the four geographical regions of India. North India is the largest market for cars in India currently with 43% market share. Next come west with 27% and south with 22%. East has the lowest market share at 8%.

The positioning of the brands in the Indian passenger car market can be understood from the price-power map given below. This map gives an idea of competition in different segments.



A - < 800CC ; B - 800 TO 1000CC ; C - 1000 TO 1500CC ; D - 1500 TO 2000CC ; E - >2000CC.

### Quality, Technology and R&D

With increased competition, established automobile manufacturers in India are becoming more conscious about technology and quality. These companies are incorporating ISO 9000 certification and Total Quality Management as explicit corporate goals. R&D expenditure in Maruti, Hindustan Motors, Premier Automobiles and Mahindra & Mahindra, the four companies with over 95% of the market currently, is very low and in 1994-95, the combined budget of these four companies was \$1 million or 0.38% of sales. However, Telco has been building product development capabilities in trucks, light commercial vehicles, and jeeps over the past fifteen years and has launched the Tata Sumo and Sierra in the market. It has plans to increase exports of these models.

Most of the MNCs entering the Indian automobile market are bringing in modern technology. Emission control techniques like catalytic converters and injection technology are present in most models. The fuel efficiency of these cars is higher than that of domestic models. Foreign models are equipped with vehicle safety gadgets which have never been seen in Indian cars. In fact, some brands in the luxury and super-luxury segments are positioning themselves on the basis of safety and engineering excellence. Some European car manufacturers have even expressed an interest in introducing technologies for improving mobility, such as traffic management, planning and control to manage traffic flow in metropolitan areas.



## Vehicle Emissions

AIAM in collaboration with industry leaders is trying to bring emission standards in India up to international levels. The Ministry of Environment and Forests and the Ministry of Petroleum and Natural Gas have introduced unleaded petrol in the metro cities from 1st April, 1995. Catalytic converters are now fixed on passenger cars sold in metropolitan cities, without imposing the increased cost on customers. The Indian automobile industry will soon see better quality fuel and lubricants.

## Infrastructure

The total length of roadways in India was estimated at 2,037,000 Km in 1990-91 by the Economic Survey 1994-95. However only 49% is surfaced. The following table lists roadways capacity and growth in India:

	1989-90	1990-91	1991-92
Length of roads ('000 km)			
Total	1970	2037	N.A
Surfaced	960	1001	
Length of National Highways ('000 km)			
Total	33.7	33.7	33.7
Surfaced	33.7	33.7	33.7
Length of State Highways			
Total	127	127	N.A
Surfaced	127	127	
Number of registered vehicles (in thousands)			
Total	19177	21310	23462
Goods carriers	1290	1411	1528
Buses	313	333	377

Source: Economic Survey, 1994-95.

The following table provides a comparison of the road network in India with other countries.

COUNTRY	TOTAL LENGTH IN Km(MILLION)	DENSITY Km/ Sq.Km.	DENSITY Km/MILL. POPN.
INDIA (1991)	2.04	0.56	2180
CHINA (1988)	0.95	0.10	854
BRAZIL (1988)	1.67	0.20	13842
USA (1990)	6.24	0.67	25060

Source: EIU country report, 1991, MVMA Facts and Figures, 1991.

The National highway network was 34,058 km at the end of 1993-94, comprising less than 2% of total road kilometers, but carrying nearly 40% of total road traffic. It is estimated that road traffic which accounts for 80% passenger traffic and 60% of goods traffic will account for 87% of passenger traffic and 65% of goods traffic by the year 2000. To meet traffic expansion of such magnitude, the National Highway network needs considerable improvement. In the past, roads have been financed from budgetary support and constructed by the Public Welfare Department. Since budget allocations are not adequate, the National Highway Act has been amended to allow the private sector to construct highways and collect toll in selected areas.

Delays caused by traffic congestion are increasing in Indian cities. The problem is aggravated since roads accommodate cars, trucks, buses, two wheelers and bicycles.

The shift in traffic from the railways to roads is evident from the following table.

	PASSENGER KILOMETERS	
	ROAD	RAIL
50-51	26	74
60-61	42	58
70-71	59	41
73-74	60	40
76-77	59	41
77-78	59	41
78-79	58	42
81-82	69	31
85-86	80	20
2000-01*	93	27

\*Projected.

Source: Kothari Industrial Directory of India, 1994.

### Challenges Facing New Entrants

Economies of scale in the sub-compact range occur at volumes greater than 150,000 cars per year. Maruti already has a capacity of 250,000 cars which could be a deterrent for new entrants in this segment. However, for a firm with an established portfolio of automobiles the addition of a sub-compact line could be attractive. Telco has plans to move into this range. This option is not open to a foreign player planning to introduce a single model. This explains to some extent the fact that all new entrants are avoiding the sub-compact car segment. Given that only 30% of the market is estimated for cars above 1000cc, the industry seems to be heading for a shake out. Alternately, India could emerge as a manufacturing base for exports.

Maruti's experience with the Indian customer gives it a better understanding of product and service needs. Moreover Indian firms have established suppliers, and are better at liaising with the government. Joint ventures will help but there will be pressure in the initial stages. The availability of a vendor base is a critical factor in the success of an automobile firm. Given high import duties on components, it could mean the difference between breaking even in the first or second year of operation or in the fifth year of operation, depending on the level of indigenization achieved. Given that product life cycles range between 4 and 7 years, it raises the question of survival. However, the example of Brazil suggests that product life cycles in India could be much longer. Companies with a developed vendor base might try to create entry barriers by putting pressure on their suppliers not to work with new entrants.

In developed markets, customers appreciate and look for various features in a car. Often there is a loyal set of customers. This will not be the case in India. Cars enhance social status and there may be a strong association of price with quality and status. The market may take time to mature and understand the value of various features.

Given the poor condition of roads, the management of distribution is a critical function. The industry trend has been to set up exclusive dealerships. However this could be an expensive proposition. For instance, a showroom in a large city could cost as much as \$85,000.

Since car prices are high compared to incomes, the life of automobiles tends to be longer than in developed countries. This means a high cost of switching for the consumer, and this represents a significant entry barrier. However as the used car market develops, this factor might not be so significant.

An interesting feature of car sales is the use of 'bookings', i.e., getting customers to deposit \$500 to \$1000 for a car that will be supplied a few months from the date of booking. This method of trying to tie up customers is possible because of the large amount of unsatisfied pent up demand, severe capacity shortages, and the initial glamour for foreign cars. These bookings are so successful currently that a company's entire capacity is booked within a month. In anticipation of new product launches by competitors, companies with established products could create artificial shortages of their product for some time, and make it available off the shelf when the competitor goes for bookings.

### **Implications**

The market is growing at about 25% for the last three years. In the highly price sensitive market, reduction of prices because of lower duties and taxes and progressive indigenization, and rising middle class incomes are likely to further increase industry growth rates. Penetration in rural and semi urban areas is extremely low and could provide fresh markets. New entrants will have to deal with uncertainty of demand, different and evolving customer needs, a relatively poor supplier base, a market crowded with competition and industry wide capacity shortages. However, if there is a shake out as many analysts expect, further opportunities for survivors will open up. Another implication is that India could emerge as a significant manufacturing base for exports. The supplier industry is also going through massive growth, although from a small initial base. Except for Telco, product development capabilities are very low both among established indigenous assemblers and suppliers, and the industry has some way to go before it becomes world class.

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