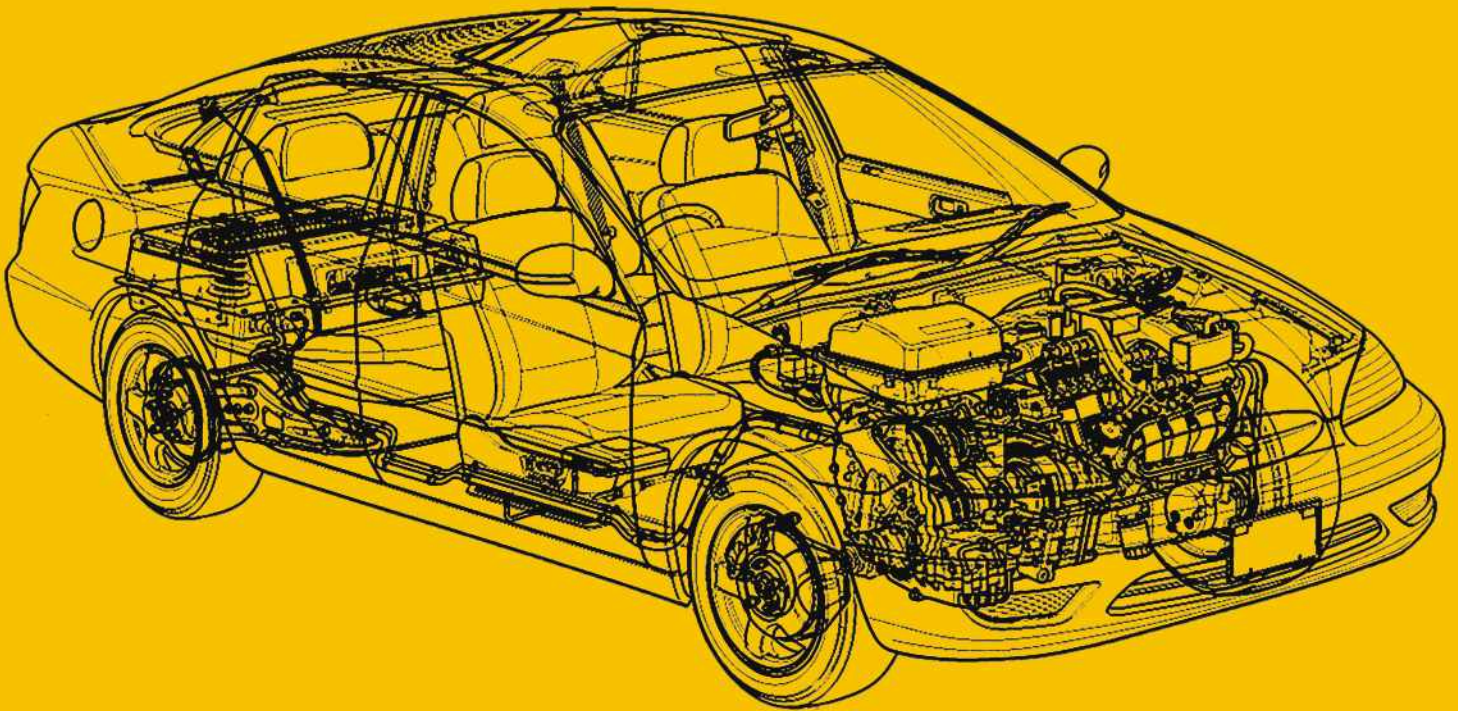


VISION 2020

INDIAN AUTO COMPONENT INDUSTRY



Foreword

We are happy to place in your hands the Vision 2020 document for the automotive component manufacturing industry in India. In order for its membership to stay competitive, ACMA has been proactively engaging itself in knowledge assignments and this is one of many such initiatives.

The Vision 2015 document created in 2005 was a first step towards formulation of an enabling policy framework and necessary action agenda for all stakeholders. This served us well; in fact, the Automotive Mission Plan (AMP) was a direct outcome of the initiative. While we are on track to achieve the goals and targets set in the document, the recent upheavals in the auto industry, in India as well as globally, have significantly altered the dynamics of the business. Contrary to the equal opportunities outlined in Vision 2015, the potential offered by the domestic market in India seem to be many fold compared to those in the external markets.

On one hand, the recent global recession has accelerated the transformation of the automotive industry by shifting the centre of gravity to the east; on the other, the automotive industry in India has been growing at an unprecedented pace over the last year. To determine the potential of the Indian auto component industry and how that can be realized, many questions need to be answered. These include the sustainability of the current growth rates, how the industry can improve its competitiveness, and what the stakeholders should do to enable the auto component industry to become an engine of economic growth. To address such questions, the Automotive Component Manufacturers Association (ACMA) commissioned a joint study with M/s Ernst & Young (EY) to develop the 'Vision 2020' for the Indian auto components industry. This study is not intended to provide answers to all the questions engaging the stakeholders. However, it focuses on the potential outlook and provides some insights on what needs to be done.

Vision 2020 indicates that the Indian auto component industry has the potential to grow from its current level of ₹1.2 lakh crores (US\$ 26 billion) to almost ₹ 5.4 lakh crores (US\$113 billion) by 2020. It is also critical to mention that in order to achieve this growth and to improve competitiveness, challenges of access to capital, availability of skilled manpower, rapidly increasing inflation, access to technology and lack of proper infrastructure, including power, need to be addressed immediately. This calls for urgent and timely intervention by the government and proactive action by the industry.

We would like to place on record our appreciation for the efforts of M/s Ernst &

Young for conducting this in-depth study. We are also grateful to our Past Presidents, ACMA member companies, OEMs, IPOs, SIAM and officials of the Government of India who have shared a wealth of their knowledge for this study.

We are hopeful that this Vision document will be the basis for all future reference, dialogue and policy formulation for the auto component sector.

With best wishes,

Dated: August 27, 2010



Jayant Davar
President, ACMA



Ashok K Taneja
Chairman, ACMA Committee
on Economic Affairs, WTO &
Knowledge Partner

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1. Executive summary

Industry trends

Over the next decade the global demand for vehicles and components will be driven by the emerging markets accounting for over 50% of global light vehicle production. Key markets driving this growth would include the BRIC countries Brazil, Russia, India and China - along with other emerging markets such as Thailand, and Mexico. Lack of strong growth and under utilization of capacities in the mature Triad markets will result in continual pricing pressures for the OEMs and the component manufacturers.

India is expected to witness strong growth in vehicle production till 2020 across all segments.

- **Passenger vehicles** - projected to be 5 million units by 2015 and over 9 million by 2020 driven by domestic demand and as a global hub for exports of small cars
- **Commercial vehicles** - volumes of over 1.4 million by 2015 and over 2.2 million by 2020. Small Commercial Vehicles (SCV), a relatively new segment, expected to grow 28% annually over the next few years
- **Two and three wheelers** - expected to double to 22 million units by 2015 and reach 30 million by 2020 driven by low penetration levels, expanding rural sales and growth in exports
- **Tractors** - projected to be over 0.7 million by 2015 and over 1 million by 2020 with steady growth expected in domestic and export volumes
- **Construction equipment** - likely to grow 2.5 times to 0.1million units by 2015 and almost double to 0.18 million by 2020 driven by the infrastructure sector

Achievement of these production volumes will position India as one of the top 5 vehicle producing countries in the world.

Potential for the Indian auto components industry

The Indian auto component industry can potentially grow upto ₹ 5.4 lakh crores (USD 113 billion) by the year 2020 driven by this growth in vehicle production. Of this, the domestic turnover can grow upto ₹ 4 lakh crores (USD 84 billion) and exports can potentially grow upto ₹ 1.4 lakh crores (USD 29 billion). The auto component industry can thus be an engine of India's economic and manufacturing sector growth potentially contributing 3.6% of

GDP by 2020, up from the current level of 2.1%. To achieve this potential the industry would require additional skilled manpower of over 1 million people and investments of over ₹ 1.6 lakh crores (USD 35 billion) during this period.

A number of areas would need to be addressed, some immediately, by the Indian component players as they need to

- **raise capital** - balance sheets have to be strengthened, and investment strategies developed
- **scale capacities** - manage cost and flexibility of new assets
- **build R&D competence** - build/enhance product development, design and engineering capabilities, incorporating frugal engineering elements
- **develop organizations** - manage significantly increased complexity and risk
- **attract talent** - both management and skilled labour

On its part the Indian government needs to provide long-term stable policies to create a conducive ecosystem in which the large numbers of small and medium companies that make up this industry are able to scale up at the rapid pace needed. Additionally the government needs to continue its efforts to improve the infrastructure. Other action points for the government are enumerated below. Internationally, there is strong competition from other countries in both the exports and local market. The trend of increasing numbers of FTAs will further add to the competitive intensity in the industry.

Recommendations for the industry to achieve potential

To service this potential demand for auto components, Indian suppliers could position themselves in five possible ways

- A **diversified global supplier** would span multiple component groups and geographies and position itself as an integrator to the OEMs
- A **focused global player** would position itself as a global leader in a given component segment. Such a player would be at the forefront in its product category and would actively shape the industry developments
- A **domestic tier-1** supplier would be mainly an India-based supplier that would focus on the Indian OEM market, exports and the Aftermarket
- A **domestic tier-2/-3** supplier would also be an India-based manufacturer and would focus on supporting the domestic tier-1 suppliers and the domestic Aftermarket

- A **niche innovator** that would focus on product innovation and develop new customized products at the forefront of technology. Such a player would leverage India's capabilities in frugal engineering, IT and complex manufacturing

Unique combinations of various business capabilities will define the characteristics of players in each strategic position. Hence, Indian auto component manufacturers will need to develop the necessary capabilities to reach their selected strategic positions.

Support needed from the Indian government

The Indian government, over the last few years, has been undertaking various initiatives under the Automotive Mission Plan (AMP) 2016 to support the development of the automotive sector. Going forward, besides keeping the momentum on these existing initiatives, the government would need to also address other critical areas. The Government should also consider refreshing the AMP with a new outlook for 2020.

Capital

Access to and availability of cost-effective capital will be critical for the industry, given the size and speed of investments that are needed. This is an immediate imperative as investments of ₹ 0.16 lakh crores (USD 3.5 billion) per annum are needed, many multiples of the average investment of USD 1.1 billion over the last 5 years

- **Attract and facilitate investment in auto component companies.** The government should provide incentives to retail and private investors, domestic financial institutions, and strategic investors that invest in the domestic auto components sector.

Technology

- **Set up a Technology Development & Upgradation Fund.** There is a need for significant infusion and absorption of technology to build domestic capability and to support faster product development plans of OEM's. The government should consider setting up a Technology Development & Upgradation Fund for the auto components industry
- **Incentivize and institutionalize an R&D environment.** Create an environment for R&D through stable and long-term incentives to individual companies and fostering linkages between industry and academia for pre-competitive research. Such linkages would help component manufacturers extend frugal engineering concepts and address current issues around design, engineering, testing and validation.

Infrastructure

- **Set up auto supplier parks that provide high quality infrastructure.** Such supplier parks can be set up in the regional auto hubs (NCR, Pune, Chennai, etc) and should provide basic facilities to component suppliers like continuous power, park-to-port rail links, technical training centers for workmen skill upgradation, and banks for providing easy access to capital
- **Accelerate infrastructure project execution.** Indian government is undertaking various initiatives with huge budgetary outlays for improving power, logistics and port facilities. The infrastructure initiatives need to be managed efficiently for faster execution.
- **Reform land acquisition so that new plants can be set up quickly.** Many component manufacturers will need to set up new plants to meet rising demand levels. This will require faster land acquisition. The State governments need to play an active role in this.

Trade policy

Current trade policy development does not have enough focus on the auto sector. To establish India's position as a global vehicle manufacturing hub, specific focus is recommended to enhance the overall competitiveness and export potential. Trade policies need to have a long term and stable outlook.

- **Create long-term, stable trade policies that enable auto sector growth.** In addition to existing FTA negotiations, the Indian government should also consider having FTAs with major auto producing countries which need similar products and are poised for growth. This will help Indian companies to supply their products at competitive prices in these large markets.
- **Correct the inverted duty structure.** The existing inverted duty structure makes value addition less competitive in those components that require imported raw material. The government needs to rectify this anomaly such that Indian component manufacturers remain competitive in domestic and export markets.

Manpower

- **Revise labor policies such that they allow manufacturers to maintain a flexible workforce.** The current labor laws disincentivize manufacturers to hire large number of permanent workmen. This results in manufacturers under-investing in workmen skills and productivity improvement. The existing labor laws also drive manufacturers to set up

multiple sub-optimal plants. Improving labor policies would have a significant impact on enhancing productivity levels and the overall competitiveness of the Indian auto component industry.

- ***Increase the availability of skilled manpower.*** The government should ensure that the supply of manpower from the various training and educational institutions matches the industry's skills requirements. Increasing interaction levels between such institutes and the industry would also help in minimizing the gap between skills requirement vs. availability.

Role for ACMA

ACMA has been instrumental in driving initiatives that help component manufacturers enhance their competitiveness and address their issues. The association should focus on the following areas to support the industry to reach the Vision 2020 potential.

- ***Create a Vision 2020 task force.*** Monitor the progress of various initiatives with the Government and provide periodic updates to the members on progress and emerging trends in the automotive industry
- ***Broaden the scope of cluster-based initiatives to include wider array of operational issues faced by component manufacturers.*** Just like the quality cluster, ACMA can set up clusters for improving throughput, productivity, marketing (especially in export markets), and logistics operations.
- ***Promote the Indian auto component industry domestically as well as internationally to make it more attractive to investors.*** Raising capital would be the key for scaling operations. Globally, private capital is looking for attractive investment destinations and many industries are vying for the same. As a result, the profile of the Indian auto component industry needs to be further raised so that it can attract capital more easily.
- ***Create a link with education institutes to help align the curricula with industry requirements.*** Such an effort would help both research and development needs and develop graduates that are more in line with industry's skill requirements.

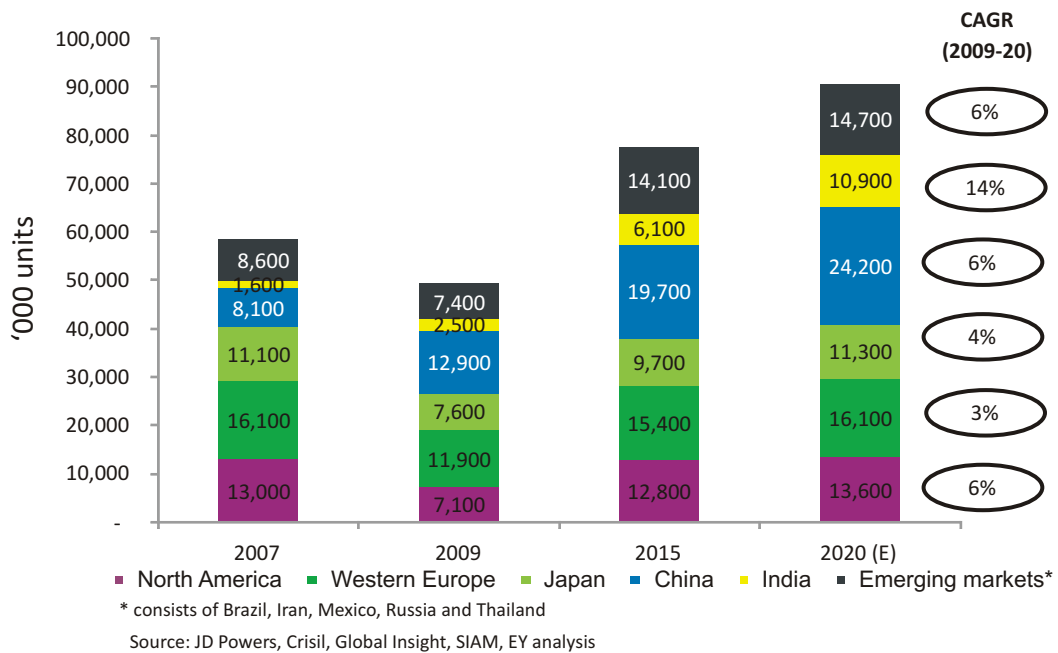
2. Automotive industry trends

Global trends

Global demand for vehicles and components will be driven by emerging markets

Global growth in demand for vehicles and components will be driven by the emerging markets. The triad markets could lose almost a decade of growth due to the recent economic recession in 2008-09. Automobile production in the Triad markets is expected to return to their pre-recession levels only by 2020. In the meantime, China has already achieved the status of being the largest producer of light vehicles in 2009. India, Brazil, Russia and Thailand are expected to achieve a sizeable scale in light vehicles during the next decade.

Figure 1 Global light vehicle assembly forecasts



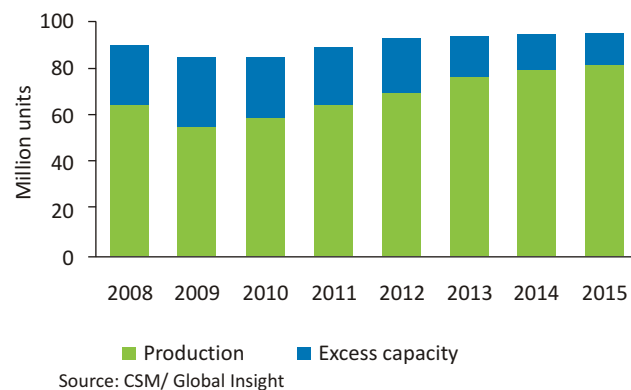
Within the passenger vehicle segment, the world is also witnessing a shift towards smaller vehicles. In Western Europe, the share of small cars¹, has already reached 35%, whereas in North America it is expected to increase from 4% in 2010 to 8% in 2020. Light vehicle assembly in India is expected to have one the highest growth rates. This is driven by a growing economy, low vehicle penetration rates, increasing road network and higher vehicle exports.

¹ Source: Global Insight. Small cars include cars of size up to 4,200 mm. There are two classes included - class A cars (utility/small class, e.g., Suzuki Alto, Hyundai i10) and class B cars (supermini class, e.g., Fiat Paleo, VW Polo).

OEMs and component manufacturers to continue facing pricing pressures in mature markets

Over the past two years, the global auto industry has endured one of the worst downturns. OEMs around the world have consolidated, restructured and slimmed down but yet they still have too many brands and too many plants. Though global capacity utilization levels are expected to improve over the next few years, they are expected to remain sub-optimal. Even as OEMs in these regions are expected to struggle with excess capacities, the slow economic growth in the Western markets will keep the demand situation tight in the foreseeable future.

Figure 2 Expected global capacity utilization levels for light vehicles



A combination of excess capacity and tight demand conditions will result in continuing intense pricing pressures on the OEMs. To tackle these pricing pressures, OEMs are employing a variety of cost reduction strategies, many of which will have a direct impact on component suppliers.

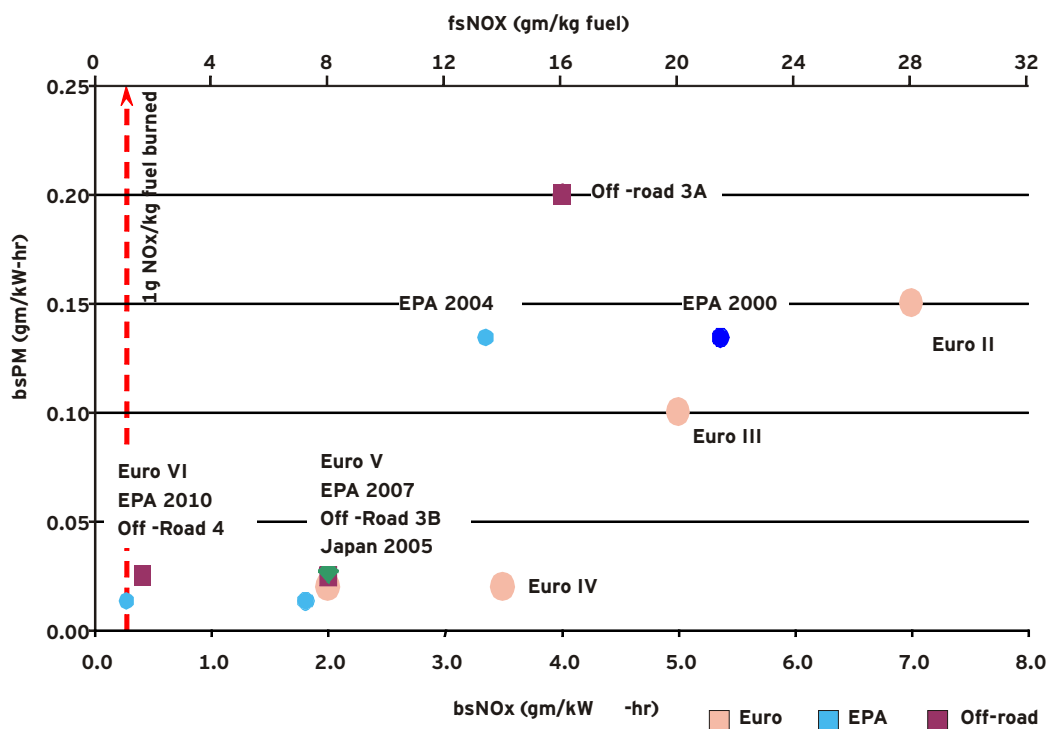
- OEMs are increasingly depending on JVs/ alliances to reduce two of their largest costs - procurement and product development. A number of alliances have come into existence recently (e.g., Fiat-Chrysler, Tata-Fiat, Suzuki-VW, Renault/Nissan-Daimler, BMW-Daimler). In addition, there are also functional collaborations happening between OEMs on specific projects.
- OEMs are also vigorously embracing the strategy of dedicated platform sharing, which portions common design, engineering, and production efforts over a number of outwardly distinct models. For example, in Europe, Volkswagen Audi Group has deployed common platforms across its VW, Audi, Skoda and SEAT brands. The Detroit 3 had 40 platforms in 2009 and plans to reduce these to 29 by 2014. GM and Ford will reportedly increase their combined production on global platforms from the current levels of 10% to 65%.

OEMs will source higher volumes with fewer suppliers. Right scale and global manufacturing footprint will become critical for component suppliers that aspire to compete globally.

Tightening emission norms to have varied impacts on component manufacturers

To minimize the environmental impact of vehicle emissions, tight norms continue to be put in place across the world. All major countries are taking various steps to reduce vehicular emissions. The US President has called for a million plug-in hybrids to be on US roads by 2015. In Europe, the target for maximum CO2 emissions by new vehicles is 130 grams per kilometer by 2015 and 95 grams by 2020 (subject to change depending on further impact assessments). Implementation of tighter emission norms is very important as it would help in the sustenance of greater number of vehicles on road.

Figure 3 On and off-road global engine emission regulations



OEMs are pursuing multiple strategies to meet the ever stringent emission requirements. These include using substitute materials that reduce overall vehicle weight, introducing vehicles that either run on alternate power trains (e.g., hybrid vehicles, electric vehicles), cleaner versions of existing fuels (diesel) or on alternate fuels (e.g., hydrogen, ethanol, CNG), and improving the efficiencies of existing power trains. In India, the availability of abundant natural gas reserves presents an opportunity for growth in CNG vehicles to

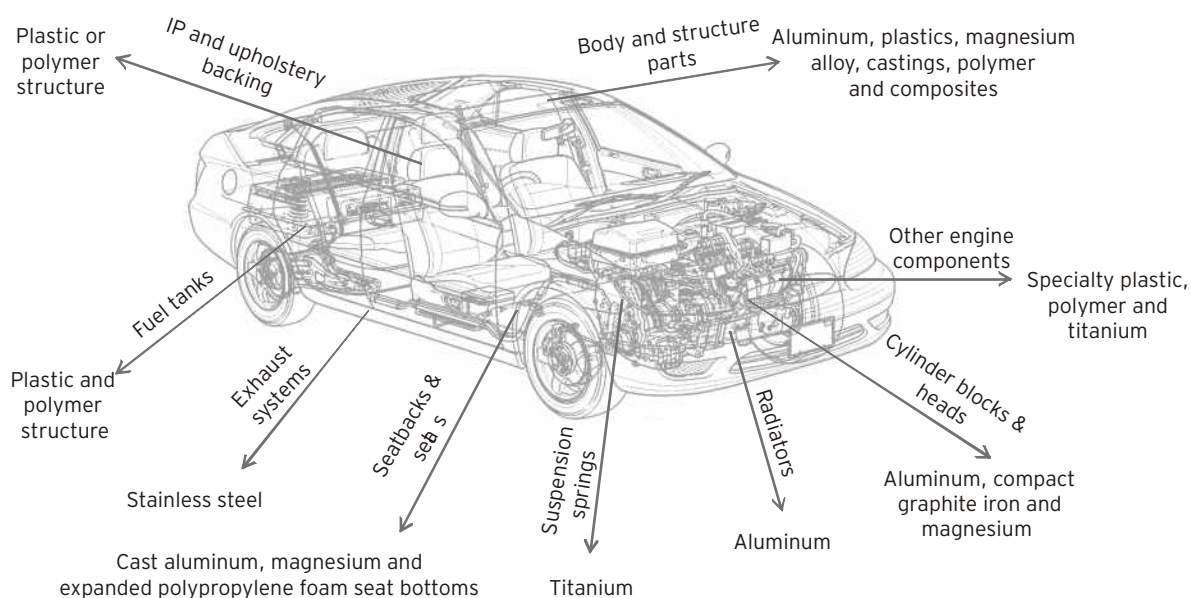
reduce overall vehicle emissions. The pace of development and expansion of the CNG/LPG distribution network in the country needs to be accelerated as more OEMs are introducing or planning to introduce CNG-based variants.

As new emission norms are implemented, component suppliers need to observe and track the strategies of their OEM customers as this could have implications on manufacturing technologies and their product portfolios.

Material substitution to result in new opportunities and challenges for component manufacturers

Material substitution in vehicle systems, sub-systems and components to reduce vehicle weight is an important lever for reducing emissions. Besides reducing emissions, material substitution can also help in developing recyclable and frugal components that will help OEMs in meeting end-of-life directives and reduce costs.

Figure 4 Key trends in material substitution



To succeed in such an environment, component players would need to invest in new R&D, testing and validation capabilities that would help them in identifying or developing light-weight components. These could also include developing new manufacturing capabilities such as new processes or technologies. The ability to help OEMs address their most important issues, such as reduction in emissions using material substitution, will further strengthen a supplier's competitive position.

Material substitution will have many implications for component manufacturers; it would necessitate changes in manufacturing technology processes and tooling - and supply base.

Widespread uptake of electric vehicles still some years away

On one hand electric vehicles (EVs) are very important for component suppliers since these vehicles have the potential to eliminate demand for certain component segments engines and transmissions. On the other hand EVs are creating demand for new components and new customers.

An EV has no combustion engine, no onboard means of generating power and hence currently suffers from limited range. There are varying forecasts for the demand of pure and hybrid EVs however widespread uptake in demand is not expected by 2020. Of the 90 million light vehicles projected to be produced globally by 2020, the share of hybrid and electric vehicles is not expected to reach more than 15-18 million. Out of these, demand for EVs is expected to reach 3-5 million vehicles. Almost 60% of this demand is expected to come from Europe. The other key demand regions will be China, US and Japan. EVs are likely to be more successful in short distance intra-city driving environment in urban areas.

The Indian government is currently drafting an Electric Mobility Policy to promote electric and hybrid vehicles². The policy is comprehensive covering all vehicle segments and will include business models and incentives required to promote adoption. However, the challenge of establishing a large scale infrastructure will need to be addressed.

Many automotive experts³ believe that the internal combustion (IC) engine still remains a difficult technology to replace, at least in the medium term. Whether via downsizing and turbo charging, gasoline direct injection, or even homogeneous charge compression ignition, the IC engine is expected to be a tough target for significant replacement by other power train technologies.

Component suppliers, producing power train-related components, need to continuously monitor EV sales trends. In the long term, such suppliers could need to diversify into new segments as demand for their traditional products would decline due to the gain in market share by EVs.

Increasing electrical / electronic content in vehicles

Electronics is fast becoming the main driver of most functions in vehicles. OEMs will increasingly add electronic features that enhance safety, infotainment, fuel efficiency and comfort. This segment will grow, as applications, currently used in premium models, move into lower-end vehicles and newer technologies are introduced.

² Source: Department of Heavy Industries

³ Source: Center for Automotive Research, USA

Increase in content per vehicle for items such as side airbags, stability control and backup assist is being driven by safety regulations. For example, electronic stability control and side airbags will become mandatory for all vehicles sold in the US by 2012 and 2014 respectively. New innovations will get added strong growth would be experienced in infotainment applications. Advanced navigation systems, besides providing driving directions, would also take factors such as traffic jams, work sites and road signs into account. Electronics applications like active suspension systems, ABS, adaptive steering, intelligent headlights, active safety and driver assistance systems would further drive growth of this segment.

Electrical and electronics content in vehicles is expected to increase from current levels of 25% in mature markets to about 35-40% by 2020. In contrast, in emerging markets, such as India, this share is expected to reach 23-25% by 2020 from current levels of around 18%.

Electronic components would witness above-average growth. This creates opportunities for new growth and higher profit margins for suppliers.

Table 1 summarizes some of the technology trends in passenger vehicles across the main product groups and identifies changes that may be expected in the short and long term.

Table 1 Expected technology advancement in passenger vehicles in emerging markets

	Body and structural	Electronics and electrical	Engine and exhaust	Interior	Suspension and braking	Transmission and steering
Short- to medium-term (3 - 5 years)	▶ Aluminum casting for structural areas	▶ Copper-clad aluminum wire	▶ Hybrid powertrain	▶ Expanded PP foam seat bottoms	▶ High strength steel and aluminum (cast and sheet)	▶ Electronic transmission control systems
	▶ Magnesium alloy casting for body parts	▶ Ultra thinwall wire coating	▶ Gasoline direct injection	▶ Ergonomically cast seat frame structure	▶ Cast magnesium	▶ Power electronics and programming for gear box
	▶ Plastics and composites for structural areas	▶ Wireless network technologies for instrument panel	▶ Exhaust gas recirculation	▶ Magnesium cast seat structure	▶ Plastics and foam reinforcements	
		▶ WiFi technology for infotainment	▶ Integrated exhaust manifold	▶ Navigation systems	▶ Composites	
		▶ Electronically actuated park brake system	▶ Variable Cylinder Management	▶ Airbags, stability control and backup assist	▶ Active safety and driver assistance systems	
		▶ Capacitive switching technology	▶ Engine downsizing	▶ Plastic or polymer structure for IP/ upholstery backing		
		▶ Aluminum for radiators	▶ Variable valve train			
Long-term (> 5 years)	▶ Magnesium for the bumper beams	▶ Transparent organic LEDs	▶ EV powertrain	▶ Polyamide glass filled composites for seat structure	▶ Titanium for springs	
		▶ Optical networks	▶ Variable geometry turbocharger	▶ Integrated seat track and rails	▶ HSLA steel for strut components	
			▶ Camless engine technology	▶ Digital looming	▶ Aluminum welded subframe	
			▶ Fuel cells	▶ Blowmolded rear seat back	▶ Carbon fiber and glass fiber reinforced composites	

Global auto component demand to reach ₹ 97 - 107 lakh crores (USD 2.0 - 2.3 trillion) by 2020

To estimate the demand for auto components, six component segments have been defined as shown in Table 2. The table also shows examples of the kind of components that are included⁴ within each segment.

Table 2 Component segments

Segment	Examples of components included in this segment
Body and structural ⁵	Bumpers, chassis, cross members, handles, door panels, body moldings, fascias, floor pans, mirrors, roofs, trunk lids, glass
Engine and exhaust ⁶	Cylinder blocks, pistons, piston rings, manifolds, camshafts, timing gears, oil filters, valves, catalytic convertors, HVAC, radiators, fans
Transmission and steering	Gear shifters, gears, transmissions, clutch components, axles, driveshafts, differentials, steering system components
Suspension and braking	Shock absorbers, springs, struts, brakes, calipers, rotors, wheels, hubcaps, bushings
Electrical and electronics	Horns, motors, wiring harnesses, dials, lights, lamps, alternators, fuses, semiconductors, fuel injection, sensors, air bags, seat belts
Interiors	Seats, upholstery, instrument panels, glove boxes, headrests, arm rests, carpeting, floor covers, headliners

The global component industry size is expected to grow from ₹ 66 lakh crores (USD 1.4 trillion⁷) in 2009 to ₹ 97 - 107 lakh crores (USD 2.0 - 2.3 trillion) by the year 2020. Almost three-fourth of the demand is expected to come from OEMs. The Triad markets will continue to dominate the market although their share is expected to reduce over the next 10 years. Emerging markets like India, China, Brazil, Mexico and Russia will gain prominence as demand rises faster in these countries.

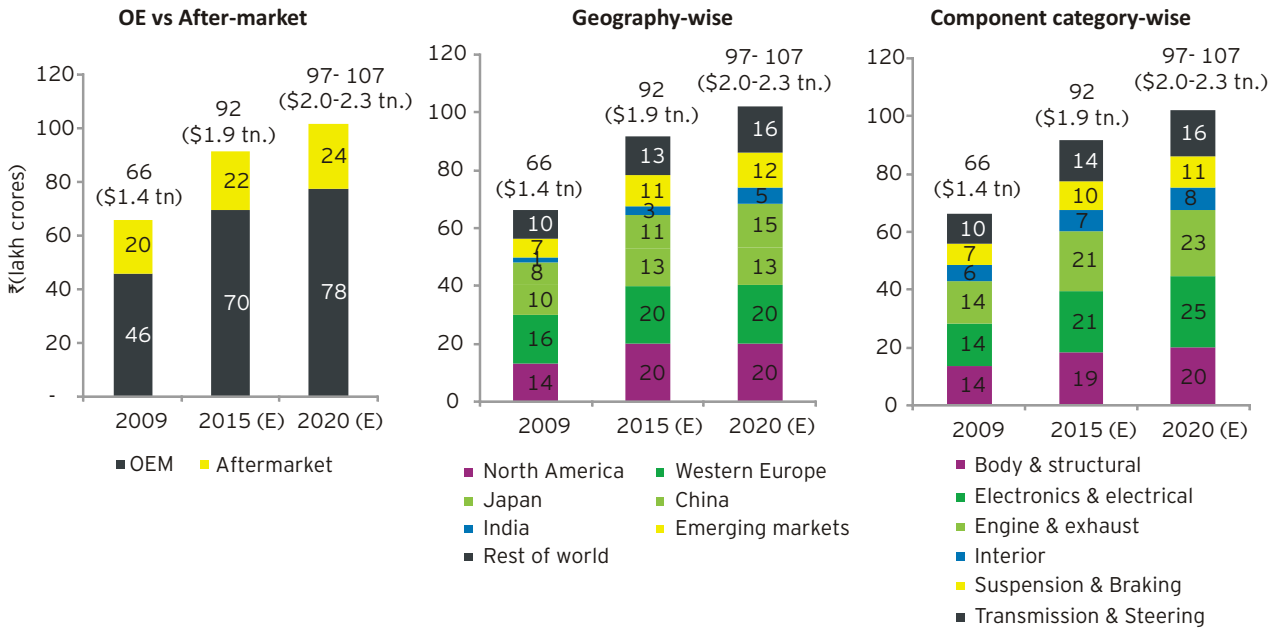
⁴ Tyres and batteries are excluded in this study

⁵ Steel-based items such as body-in-white that are manufactured in-house by OEMs are excluded

⁶ Complete engines are excluded

⁷ 1 USD = ₹ 47.5 (monthly average during Jan '09 - Jun '10)

Figure 5 Global auto component demand



Trends for India

Vehicle production in India expected to witness strong growth till 2020

The domestic automotive industry has been growing at impressive rates and is expected to witness strong growth in vehicle production till 2020 across all segments. Achievement of these production volumes will position India as one of the top 5 vehicle producing countries in the world.

Figure 6 Vehicle production in India



*Includes backhoes, track excavators, wheeled loading shovels, vibratory rollers and liftall
Source: SIAM, EY estimates

The Indian component industry has an opportunity for significant growth in this decade as the projected high vehicle production levels, across segments, will generate growth in demand for components.

Small vehicle segment (PV and SCV) growth will require component manufacturers to master frugal capabilities

The passenger vehicle production is estimated to grow at 14% CAGR till 2020. This growth would largely be driven by the small car segment⁸ as India is expected to become a global hub for producing small cars. Major global OEMs (e.g., Ford, GM, Toyota) have already set up or are setting up assembly operations in India to serve both the domestic and export markets in Europe, South Asia, Asia-Pacific and Africa.

After the launch of Tata Nano, other OEMs are focusing on developing competing vehicles using similar frugal engineering approaches to reduce the overall cost of small vehicles, an area many OEM's have struggled with in the past. To support these OEMs in developing ultra low cost vehicles, component suppliers will need to further develop frugal design and engineering capabilities to combine them with the existing low cost manufacturing capabilities. Trends suggest that the learnings and experiences from ultra low cost car development could be rapidly applied by vehicle manufacturers and the component industry to other vehicle segments. The industry needs to ensure that this does not translate into lower or negligible profit margins for the component industry.

Small commercial vehicles (SCVs) defined as commercial vehicles with capacity of one tonne and below, are expected to drive the rapid growth of the light commercial vehicles segment. This segment is projected to grow 28% annually over the next few years. Today, SCVs account for less than 40% of commercial vehicle production in India. In Thailand, which has a favorable business environment for SCVs (e.g., favorable duty structure), this proportion is a staggering 93%. Like the small car case, India can also establish itself as a hub for SCV production to support domestic and export demand. Indian component manufacturers can support the OEMs by supporting them in design and development of SCV components as many components are significantly different from those used in light CVs (e.g., double clutch, emission control).

The component industry has an opportunity to build frugal design and engineering capabilities to complement the low cost manufacturing base as the Indian vehicle industry scales to become a global manufacturing hub for small vehicles

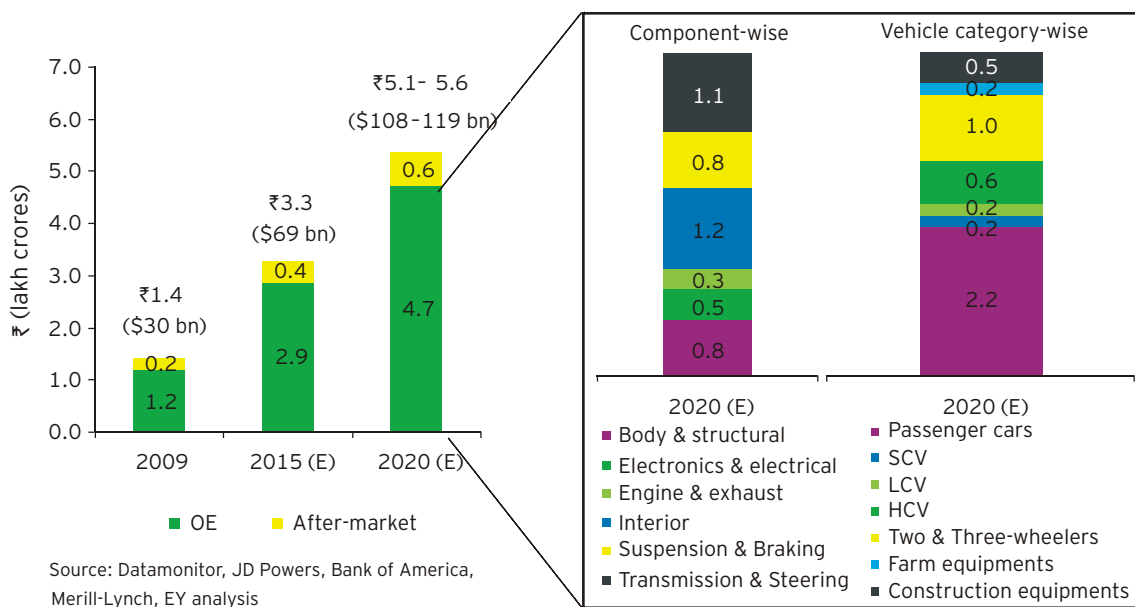
⁸ Small car segment includes cars in A1 and A2 segments as defined by SIAM. These cars have a length of up to 4,000 mm.

3. Indian auto components industry

Indian auto component demand expected to reach ₹ 5.1 - 5.6 lakh crores (USD 108 - 119 billion) by 2020

The current auto component demand in India from OEMs and Aftermarket is estimated to be ₹ 1.4 lakh crores (USD 30 billion). This was fulfilled by domestic production and imports. The demand is expected to reach ₹ 5.1 - 5.6 lakh crores (USD 108 - 119 billion) by 2020. The passenger car segment is expected to contribute almost 40% of the demand. Commercial vehicles - LCVs and HCVs - are expected to be the other key vehicle segments contributing to component demand.

Figure 7 Domestic auto component demand



Like many other auto component industries across the world, the Indian auto components industry is also fragmented with a significant number of small and medium-sized companies. There are few companies in the Indian industry that have a turnover of more than ₹ 500 crores (USD 105 million). The fragmented nature of the Indian industry prevents Indian players from gaining scale advantages. Many Indian players also have multi-site operations that result in duplication of fixed costs. This is due to various reasons such as customer needs, proliferation of tax exempted zones and varying labor laws and policies across States. For example, an Indian component supplier, producing components in multiple segments, has a turnover of ₹ 1600 crores (USD 337 million) generated from about 20 manufacturing locations.

Scaling up business optimally is the key imperative for Indian component manufacturers

Domestic Indian companies have developed strong manufacturing capabilities that have helped them in keeping costs low and quality under control. As volumes increase, Indian component manufacturers will have to scale up their operations and further improve quality, cost and delivery performance to global standards demanded by customers.

Till now, Indian entrepreneurs have successfully managed the evolution of the Indian component industry. Larger scale will require major changes in organizational structures and levels of decentralization. They will also need to put in place robust internal controls and scalable business processes. These new capabilities should be implemented such that the organization retains its entrepreneurial culture while being able to manage large scale operations. Many family-owned companies (especially SMEs) would need new talent to set up professional management teams. Having professional teams will also help in attracting capital, which requires quality and depth in top management ranks as one of the prerequisites.

A number of areas would need to be addressed, some immediately, by the Indian component players as they need to

- **Raise capital** - balance sheets have to be strengthened by divesting non-performing and non-core assets and by optimizing the debt / equity structure. Suitable investment strategies need to be defined
- **Scale capacities** - manage cost and flexibility of new assets to successfully navigate any market cyclicity. Flexible production systems and supply chain agility and scalability need to be addressed in parallel
- **Build R&D competence** - build/enhance product development, design and engineering capabilities and incorporate the frugal engineering elements across the design and manufacturing value chain
- **Develop organizations** - to manage significantly increased complexity and risk from larger capital outlays, industrial relations environment, larger customer base or customer concentration, product portfolio performance and new technology development/absorption
- **Attract talent** - Develop HR practices that enhance recruitment and retention of both management positions and skilled labour. Leadership development and stable, managed industrial relations environments will be critical for SME's. For larger companies, attracting global talent and building a performance culture will be important.

Operations need to be scaled up in a well-planned manner, and key process capabilities need to be developed in parallel. Most of the domestic suppliers have till now focused on few OEMs such as Maruti Suzuki, Hero Honda and Tata that had until recently dominated the Indian automotive industry. With the entry of many global OEMs, component suppliers will now have to manage multiple customers.

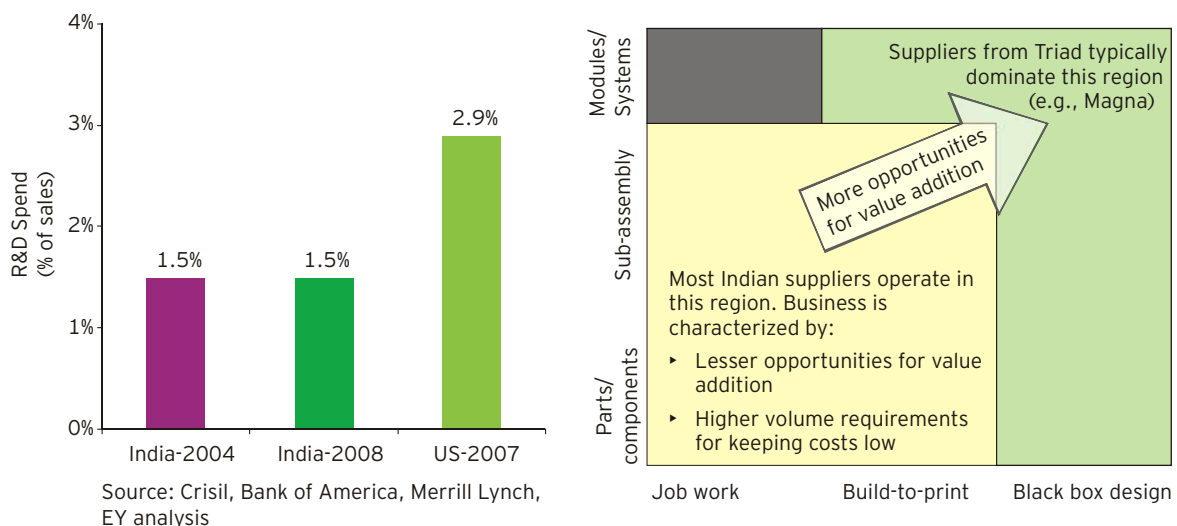
Scaling up of operations will be a key challenge for smaller component manufacturers who face constraints in raising capital, attracting talent and accessing technology. Therefore, it becomes important for larger component manufacturers to support and assist the tier 2 and 3 suppliers which are crucial for their operations. Smaller component manufacturers on their part need to show the willingness and desire for scaling up as the larger players will select only a handful of suppliers.

To support larger operations, component suppliers also need to invest in four critical enabling capabilities. These are capital management, people and organization management, risk management and IT.

Indian component suppliers need to move up the value chain

Many Indian component manufacturers are competing in the lower value-added space and produce parts/ components on either job work⁹ or build-to-print basis. Relatively larger component manufacturers that produce higher value-add components usually also have build-to-print capabilities. Such manufacturers depend on either the OEM or on their JV partners for technical/ product design capabilities.

Figure 8 R&D capabilities in Indian component industry vis-à-vis those in advanced countries



Source: Crisil, Bank of America, Merrill Lynch, EY analysis

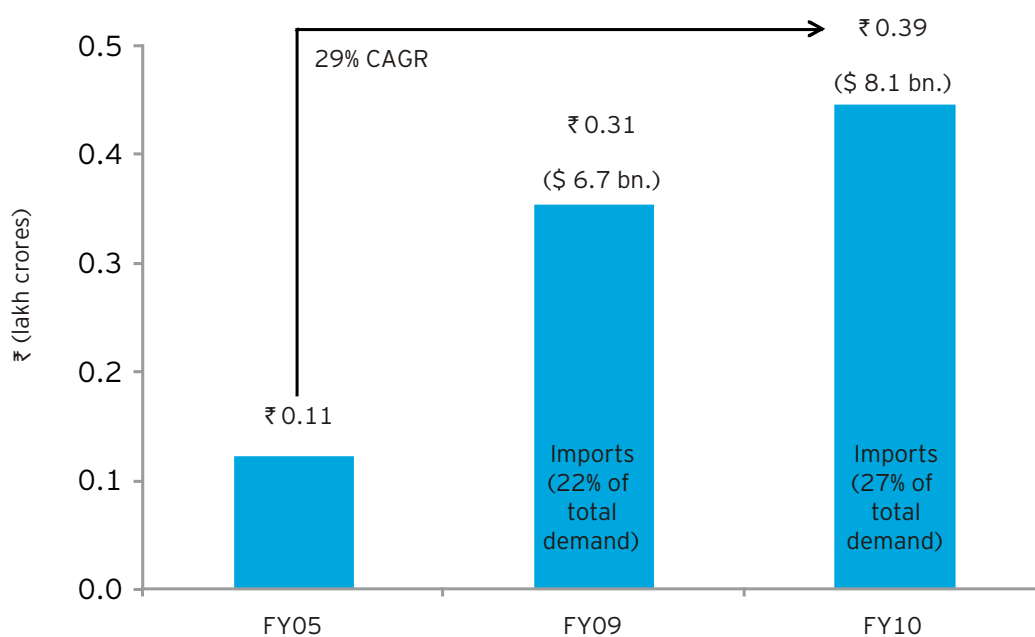
⁹Job work refers to the practice wherein, besides providing product designs to the supplier, the OEM also provides complete support in setting up the tooling. In the case of build-to-print, the OEM only provides the supplier with product designs. A black box design capability is defined as one wherein the OEM outsources the complete component design to the supplier.

In future, product design, testing and validation capabilities are expected to become even more important as OEMs increasingly depend on their suppliers for product design. This need is driven by shortening product life cycles, increasing number of new products/variants and higher localization levels.

Lower scale of the Indian industry aiding fast import growth

The strong growth of the domestic component industry has been accompanied by a much stronger growth of component imports into India. Imports, at ₹ 30,500 crores¹⁰, comprised almost 27% of the domestic demand in FY10. Majority of the recent increases in imports have been attributed to lack of capacity with Indian component suppliers and growing product line-ups of global OEMs.

Figure 9 Auto component imports into India



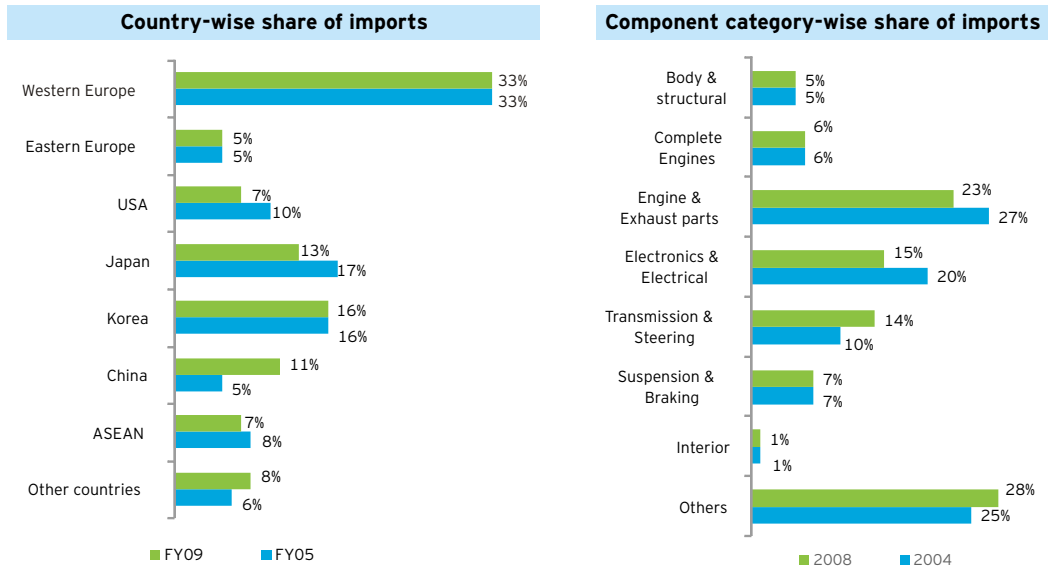
Source: ACMA, EY analysis

Western Europe remains the largest source of imports into India with a share of 33% of total imports. Almost half of the imports from Western Europe are of hi-tech engine and transmission components. Overall, the share of Triad has gone down as share of USA and Japan has decreased significantly. China's share in total Indian imports has more than doubled from 5% in FY05 to almost 11% in FY09 due to its strong cost competitiveness.

Engine and exhaust parts comprise the largest import segment along with electrical & electronics and transmission and steering items. 28% of imports are categorized as *Others*, i.e., identification by product segments is not known.

⁹ Source: DGCI&S (excluding tyres and batteries)

Figure 10 Country- and component category-wise trends and share of auto component imports

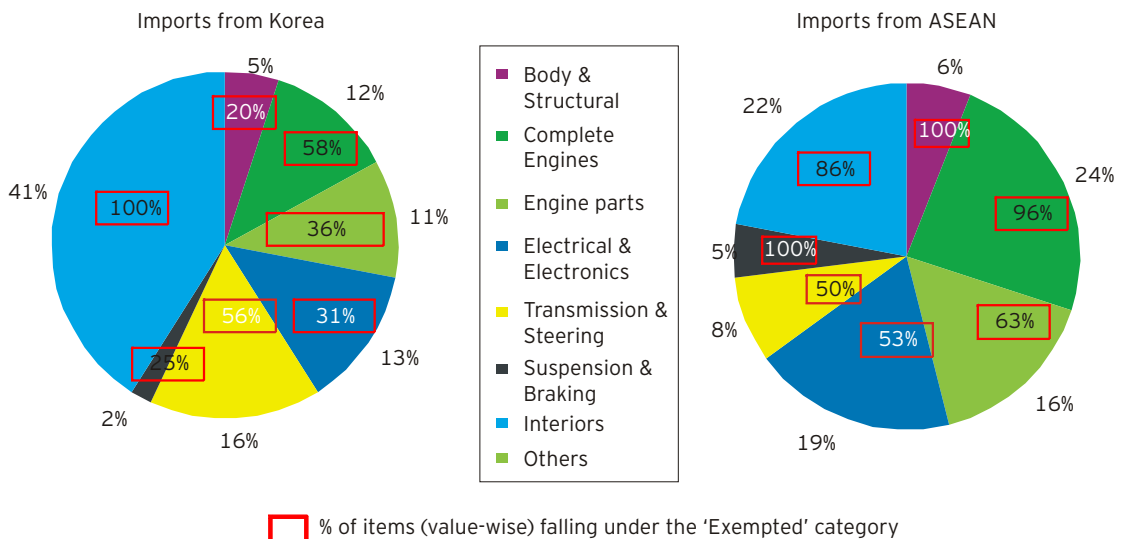


Component imports in the engine and transmission segments are expected to decrease in the future. Many foreign OEMs (e.g., VW, Toyota) that currently import engines and transmission into India, are planning to produce these aggregates locally. A higher level of localization, especially for small cars, is necessary as this segment is highly price sensitive.

FTAs could make imports more competitive

Many countries, including India, looking to improve their export prospects have not been deterred by the slow progress of the WTO's NAMA negotiations. These countries are pursuing bilateral routes and hence bilateral and regional FTAs are proliferating.

Figure 11 Composition of imports from Korea and ASEAN



Last year, India signed a FTA with ASEAN and a Comprehensive Economic Partnership Agreement (CEPA) with South Korea. A component category-wise review of the ASEAN FTA and the Korean CEPA indicates that imports in the Others category would increase the most. Almost all tariff lines under the Others category are included, which comprise 22% and 41% of imports from these regions respectively (Figure 11).

Besides, the recently concluded ASEAN and Korean FTAs, other FTAs are under negotiation. These include ones with EU, Japan, Australia and USA. Almost 70% of component imports into India are from countries with which India either has a FTA or is planning to have one soon. Even though the FTAs give an equal opportunity to the Indian players in terms of exports, the import duty on raw materials results in an inverted duty structure that makes certain Indian components (those dependent on imported raw materials) uncompetitive in both domestic and export markets.

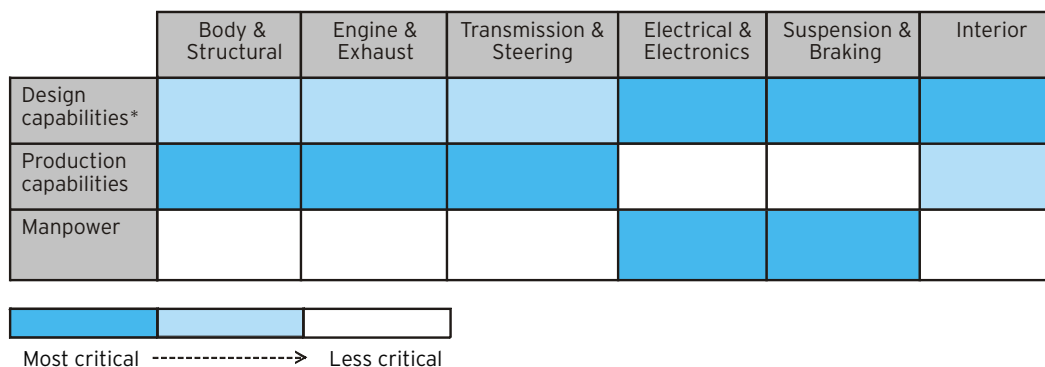
Indian suppliers should better exploit the export opportunities in markets where India currently has, or is in the process of negotiating, a Free Trade Agreement

4. Competitive environment

The key driver for outsourcing in the export markets is cost. Increasing cost pressures have driven OEMs towards low cost country (LCC) sourcing. Many different regions around the world are becoming centers for LCC sourcing. These include China, India, South East Asia and Eastern Europe. In this section we have analyzed the competitiveness of various LCCs. Besides India, other LCCs considered for comparison in this report are China, Turkey, Romania, Czech Republic, Slovakia, Hungary, Poland, Thailand, Indonesia, Vietnam and Mexico.

The key OEM requirements that drive sourcing decisions are design, cost and quality. The ability of component manufacturers to fulfill these customer requirements depend on their design and engineering skills, manufacturing skills and manpower costs. Design and engineering capabilities depend on product design, engineering/development and validation capabilities. Manufacturing skills refer to the capability of producing high quality and low cost components using modern production processes and manufacturing technologies (e.g., CNC machines). Manpower costs mainly depend on workmen wages and productivity levels. These factors that affect a company's competitiveness need to be understood to determine a country's competitiveness.

Figure 12 Critical factors affecting competitiveness of auto component manufacturers



¹¹ There would always be some components in all component segments that would not follow the general guidelines depicted in Figure 12. The above table is only indicative and illustrates the point that certain skills are more critical than others in any component category. Hence, component suppliers need to be able to distinguish more critical capabilities than less critical ones while making their export competitiveness assessments.

In certain component segments, customer requirements make design & engineering capabilities more critical than manpower costs¹¹. In the engine segment, components such as cylinder heads are typically designed by OEMs themselves. Hence the design and engineering skills are less critical for component suppliers as compared to having sophisticated production processes for manufacturing these high precision components. In case of interior segments (e.g., car seats) design and engineering skills are more critical than lower manpower costs as OEMs routinely place design and engineering requirements on their component suppliers.

To analyze India competitiveness, it is necessary to understand how India ranks on these key industry specific elements vis-à-vis other LCCs. Additionally, analysis of other supporting factors affecting a country's competitiveness is also needed. These include local demand base, presence of an established supplier base, government policies in terms of taxes/incentives, availability of quality raw material at competitive prices and the presence of modern infrastructure.

Infrastructure and commercial environment affecting India's competitiveness

A comparison of India vis-à-vis other LCCs is shown in the figure below¹². Across many factors India is more competitive than most LCCs except China and Czech Republic. India is currently more competitive in manpower costs (even after taking into account low productivity levels), manufacturing skills, local market size and an established supplier base. Over the next few years, as income levels rise within India, manpower costs will escalate. But this phenomenon is expected to take place in other LCCs also such as China and East European countries. With the increasing economic integration between Western and Eastern Europe, LCCs in Eastern Europe are expected to become less competitive than India and China. Moreover, as the size of the local demand in China and India increases, greater scale will help companies in these countries to offset cost increases by higher productivity levels.

¹² These rankings are based on country performance in select indicators. For example, manpower cost is a function of two indicators labor rate and productivity. Data for such indicators is sourced from World Economic Forum and World Bank.

Figure 13 Comparison of factors affecting competitiveness of LCCs

		Other supporting factors							
		Design & engg. skills	Manufacturing skills	Manpower cost	Domestic demand	Commercial environment	Supplier base	Raw material	Infrastructure
East Asia	Korea	1	1	7	9	1	3	2	1
	China	4	4	1	2	12	3	1	4
	Thailand	8	11	7	8	1	6	11	2
	Indonesia	8	7	3	9	5	7	11	11
	Vietnam	13	13	7	14	5	12	15	11
Eastern Europe	Czech	1	1	7	9	5	1	6	3
	Romania	13	13	7	6	10	14	13	15
	Poland	8	9	15	8	3	8	13	6
	Slovakia	11	4	7	14	5	10	6	5
	Russia	5	11	3	1	10	14	3	8
	Hungary	3	9	7	2	12	13	10	8
	Turkey	13	7	6	9	3	8	5	8
Latin America	Brazil	6	4	7	2	15	3	9	6
	Mexico	12	13	3	6	5	10	4	13
	India	6	3	1	2	12	1	6	13

■ India is more competitive
 ■ India is comparable
 ■ India is less competitive

Note: Number inside each cell indicates country ranking

One of the key areas affecting India's competitiveness is the commercial environment that includes tax policies and rates, bank lending rates and availability of capital. Total indirect taxes on raw materials and finished products can add to almost 30% of final sale price. With the expected roll-out of GST in the near future, incidences of multiple and disparate taxes are expected to be addressed. As an example, imported raw material costs are higher in India and affect competitiveness.

Infrastructure is another major area that unfavourably impacts India's competitiveness. India ranks poorly in terms of power (both availability and quality), and logistics infrastructure such as roads and ports. Lack of power adversely impacts costs, productivity and quality levels. Captive generation of power is expensive and requires additional investments.

India can become a highly competitive location for component manufacturing

Figure 14 shows how India compares with other LCCs in terms of competitiveness in various component segments. This takes into account the various factors that affect competitiveness in the auto component industry (Figure 12) and how India is placed vis-à-vis other LCCs (Figure 13)¹³

¹³. This analysis does not take into account logistics costs in assessing competitiveness and is intended to be a comparison of competitiveness across countries based on their structural and commercial factors

Figure 14 Category-wise competitiveness of LCCs

		Body & Structural	Engine & Exhaust	Transmission & Steering	Electronics & Electrical	Suspension & Braking	Interior
East Asia	Korea	1	1	1	1	1	1
	China	3	3	3	3	3	3
	South East Asia	7	7	7	7	7	7
Eastern Europe	Czech	2	2	2	2	2	2
	Eastern Europe (excl. Czech)	6	6	6	6	6	4
Latam	Brazil	5	5	5	5	5	6
	Mexico	8	8	8	8	8	8
	India	3	3	3	4	4	4

■ India is more competitive
 ■ India is comparable
 ■ India is less competitive

Note: Number inside each cell indicates country/region ranking

Overall, besides South Korea¹⁴, China is as competitive, if not more competitive than India across various component segments that involve greater levels of design/engineering and manufacturing skills. One of the IPOs reported that their sourcing strategy was to use the Indian supply base for advanced purchasing whereas the strategy for China was still based on best cost. The Czech Republic is the other key competitor for India. With the expected growth in volumes, India has the potential to improve its competitiveness in automotive component manufacturing. This requires timely policy interventions and investments in infrastructure.

Indian suppliers need to protect and grow their competitiveness as the overall export base is small and India ranks 26th with 0.7% share of the total global auto component exports. While the last two years may have been difficult as export demand fell, many suppliers small and large have reported during interviews that they have benefitted from their export experiences. It has helped them improve quality and delivery performance, and also refine their sales and marketing capabilities and other business practices.

Suppliers need to have a strategic view on exports as part of the overall business, and sustain the focus, particularly in the current environment of significant growth in domestic demand

¹⁴ Even though South Korea is not a LCC, we have included it in this section as it is a major exporter of auto components

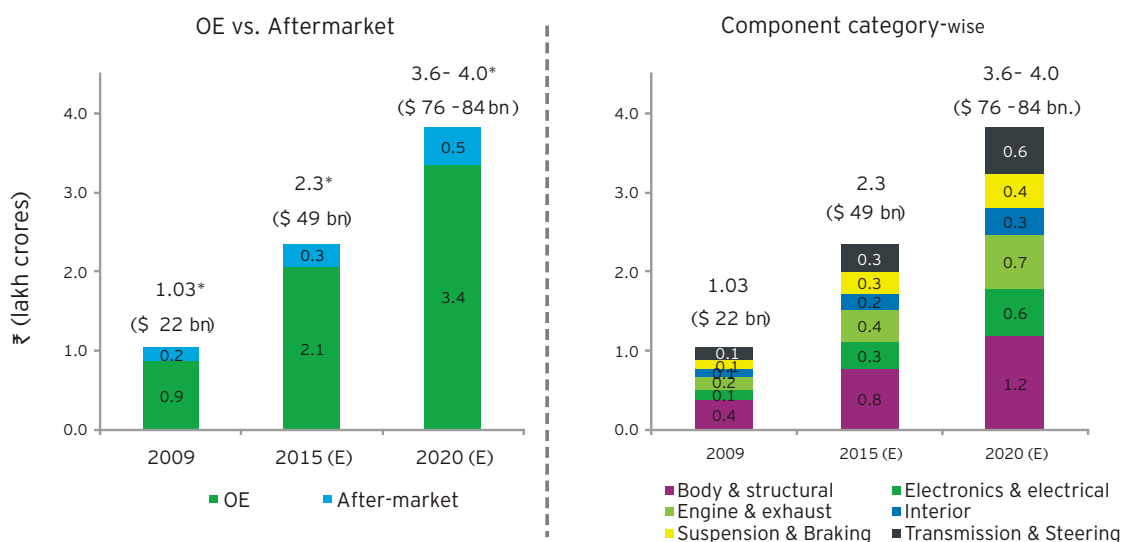
5. Potential for the Indian auto components industry

In order for the Indian auto component industry to achieve its potential the key stakeholders auto component manufacturers, Central and State governments and OEMs need to work collaboratively.

Domestic market potential for Indian component industry is ₹ 3.6 - 4.0 lakh crores (USD 76 - 84 billion) by 2020

As discussed in chapter 3, the domestic demand for auto components is expected to be ₹ 5.1 - 5.6 lakh crores (USD 108 - 119 billion) by the year 2020. Out of this demand, the revenue potential for Indian component manufacturers would be ₹ 3.6 - 4.0 lakh crores (USD 76 - 84 billion) by 2020. The remaining demand will be met by imports, which are expected to marginally rise to 29% of the total domestic consumption as compared to 27% currently. With increase in vehicle localization levels, the proportion of imports is projected to remain at similar levels.

Figure 15 Domestic market potential



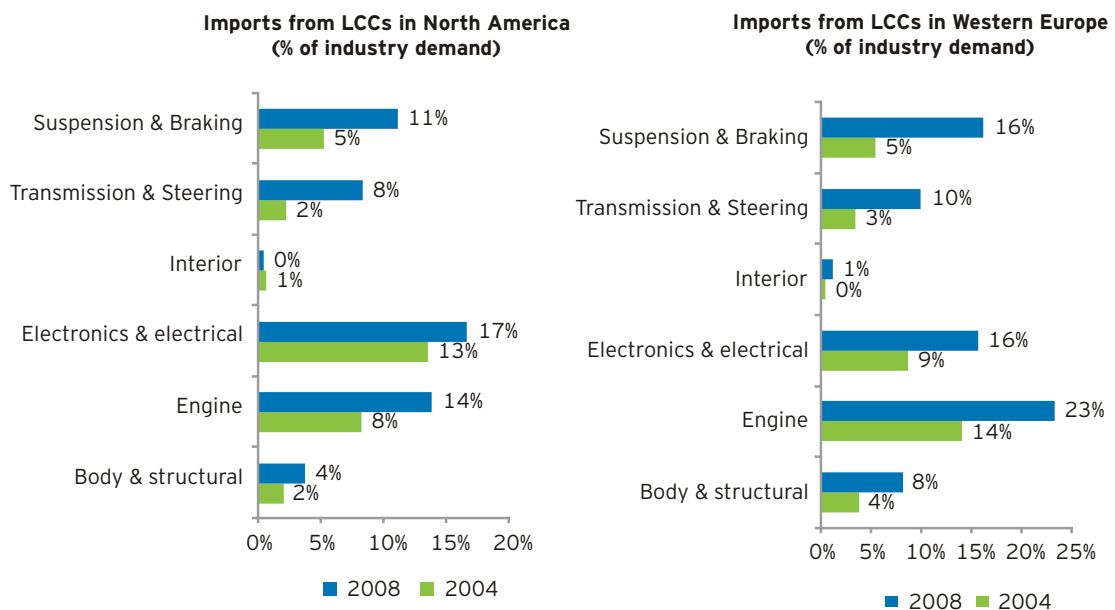
* Demand for construction equipment components also includes that from compactors, skidsteer loaders, wheel dozers, road rollers, bull dozers, etc.

Component imports in Triad markets expected to increase

Intense pricing pressure has forced OEMs in mature markets to increase sourcing of components from LCCs. As OEMs in mature markets continue to pursue strategic cost reduction initiatives, finding low-cost suppliers with right product quality, will remain a key imperative.

Although divestments and bankruptcy enforced restructuring has led to improved cost structures for component suppliers in mature markets, they are yet to be cost competitive with LCC suppliers.

Figure 16 Imports from LCCs in North America and Western Europe



Source: International Trade Centre, EY Analysis

In the longer term, however, LCCs can lose their cost advantage due to rising wages and income levels. But as these factor advantages erode over time, LCCs are expected to build a sizable industrial base that provides greater economies of scale. India and China are the two countries that are most likely to benefit from scale advantages.

A combination of four factors will result in greater imports into mature markets from the LCCs. These are increasing pressure on OEMs to outsource for cost reduction, low cost-competitiveness of local component industry, lower levels of governments support and stronger capabilities of suppliers in LCCs.

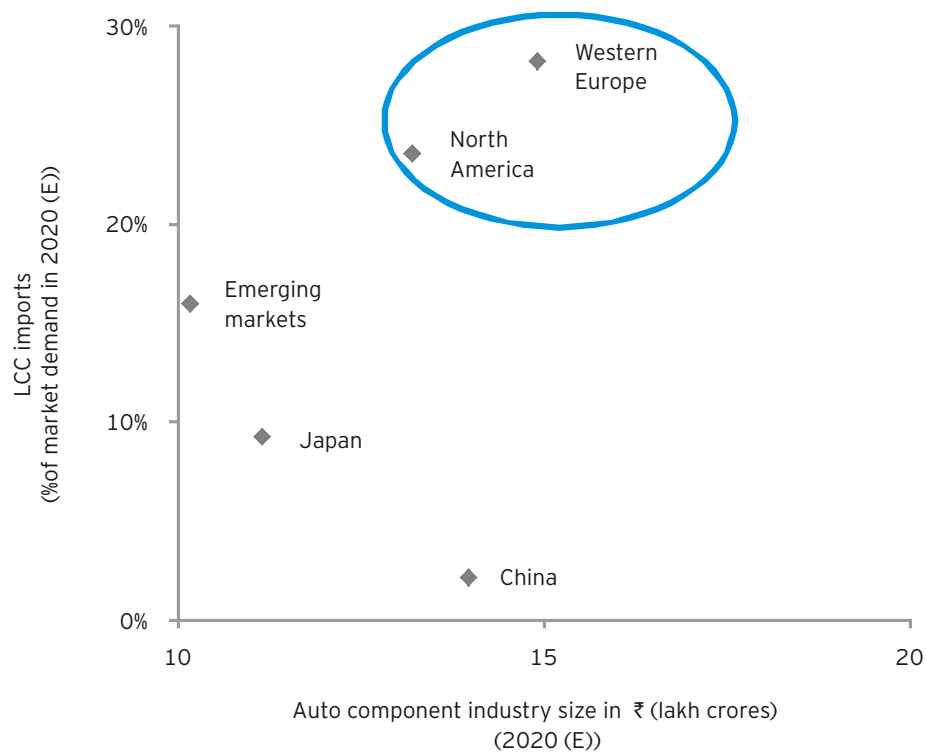
North America and Western Europe to remain most attractive export markets

As discussed above, North America and Western Europe will continue to rely significantly on auto component imports from LCCs. Japan, which has traditionally been a closed market for auto component imports, is expected to gradually rely more on LCC sourcing in future. OEMs like Toyota have recently announced their low-cost sourcing initiatives. OEMs in Japan are increasingly considering and awarding work for new programs to Indian suppliers as they make global sourcing decisions. However China is expected to remain the major LCC supplier to Japan.

Other than the Triad, emerging markets such as China, Brazil, Russia and Mexico would also generate larger demand for auto components. Out of these, China currently sources most of its imports from Western Europe and US. Other LCCs account for a very small share of China's imports and this trend is expected to continue because of China's strong cost competitiveness.

Other emerging markets, besides China can provide an opportunity for Indian

Figure 17 Attractiveness of export markets



component manufacturers to diversify their exports.

Distant LCCs to gain greater market share in key export markets

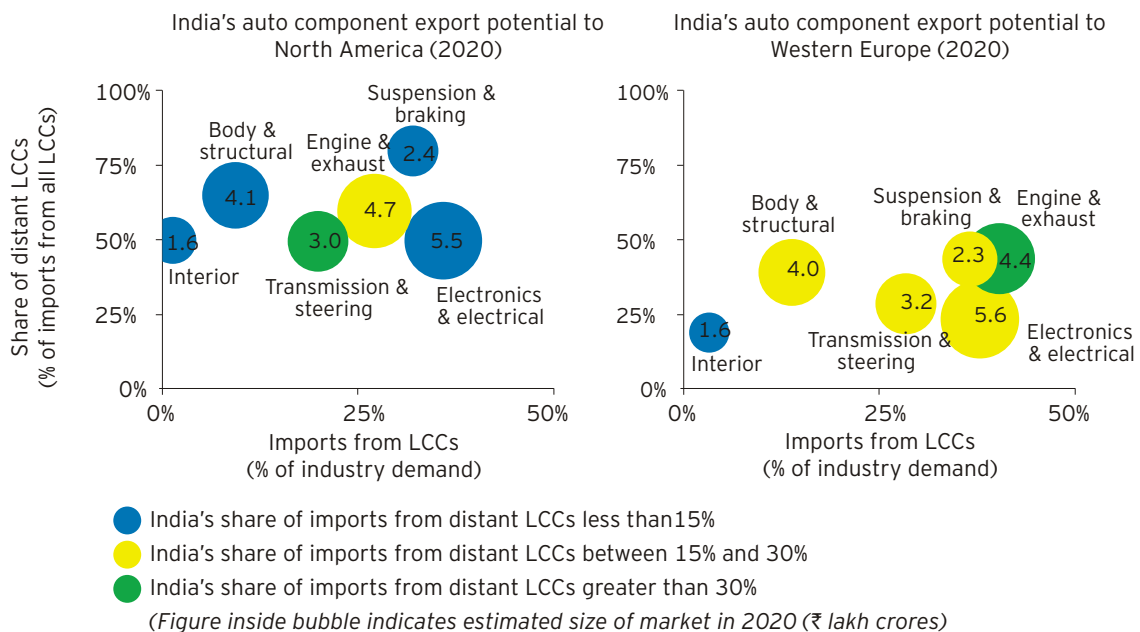
LCCs can be split into two categories - close-to-home LCCs and distant LCCs. Close-to-home LCCs include Mexico for US/Canada and East European countries for Western Europe. Distant LCCs include India, China and South East Asian countries such as Thailand and Malaysia for the North American and Western European markets.

Close-to-home LCCs dominate the auto component imports into North America and more so in Western Europe. Low transportation costs from close-to-home LCCs give them an advantage over distant LCCs. However, the share of distant LCCs in auto component imports into North America and Western Europe is expected to increase over time due to the following reasons.

- India and China are more competitive than almost all the close-to-home LCCs for North America and Western Europe.
- Scale of the domestic auto component industry in key distant LCCs, India and China, will be far bigger than that in other LCCs. This would result in a substantial cost advantage for these distant LCCs.
- Wage rates in East European LCCs are expected to achieve parity with that in Western Europe as these countries get more closely integrated into the European Union.

Among the distant LCCs India will compete, primarily, with China for the North American and Western European markets.

Figure 18 India's auto component export potential to North America and Western Europe in 2020

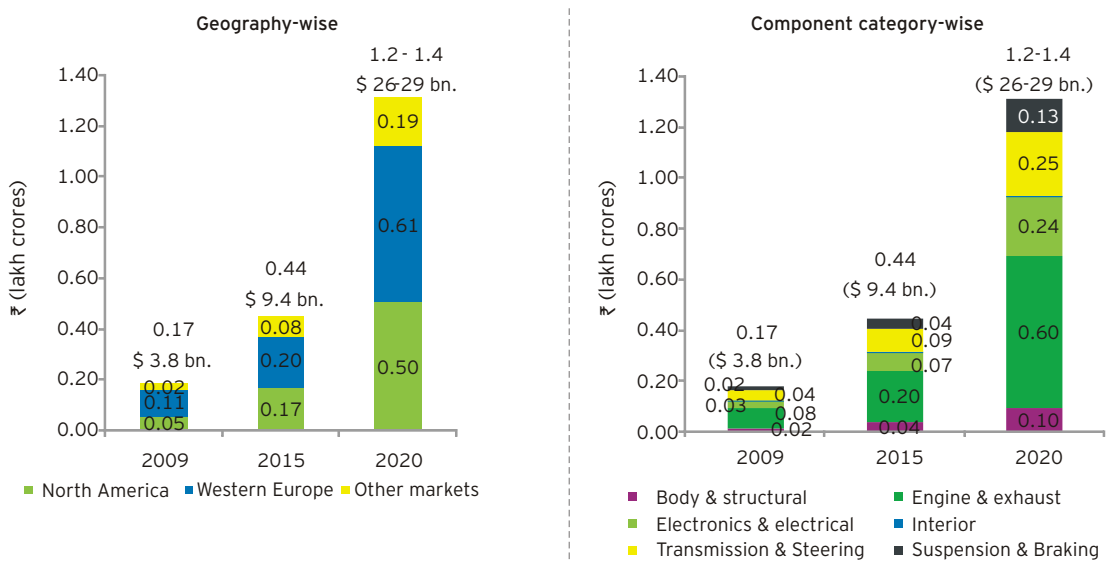


As shown in Figure 18 above, body and structural component segments (e.g., bumpers) are expected to have a smaller share of imports from distant LCCs as these parts are typically not amenable to distant sourcing. In contrast, components belonging to the engine segments (e.g., asbestos free gaskets, sensors) and electrical segments (e.g., micro motors) are expected to have a higher share of imports as these can be more economically transported over longer distances.

The export market potential for Indian component industry could be ₹ 1.2 - 1.4 lakh crores (USD 26 - 29 billion) by 2020.

Share of distant LCCs, specifically China and India, is likely to increase in export markets

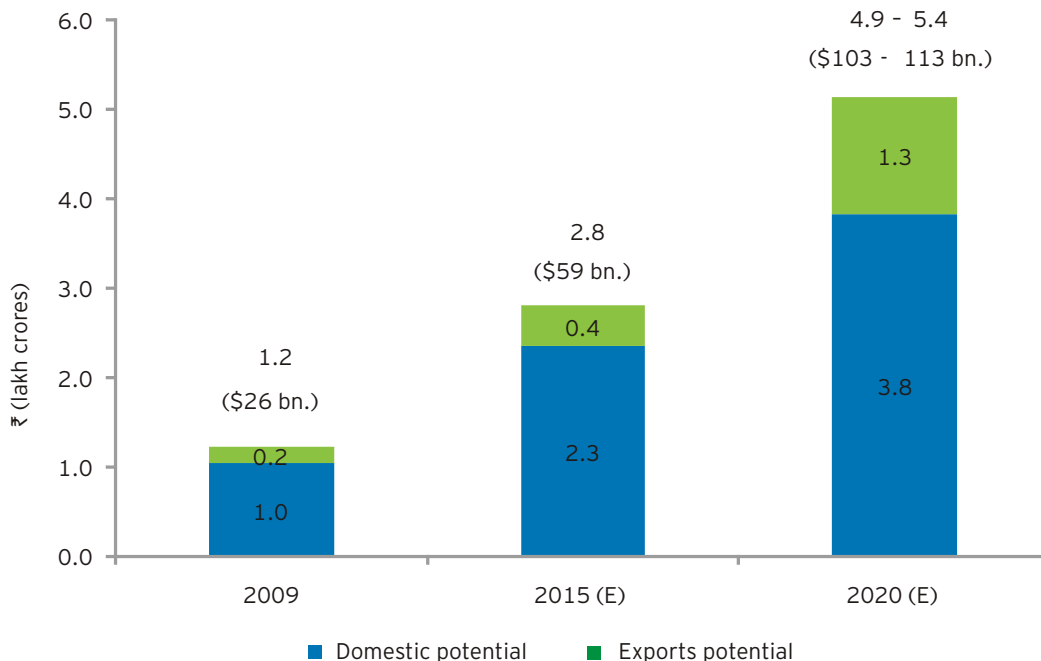
Figure 19 India's export potential



Total potential for Indian component industry is ₹ 4.9 - 5.4 lakh crores (USD 103 - 113 billion) by 2020

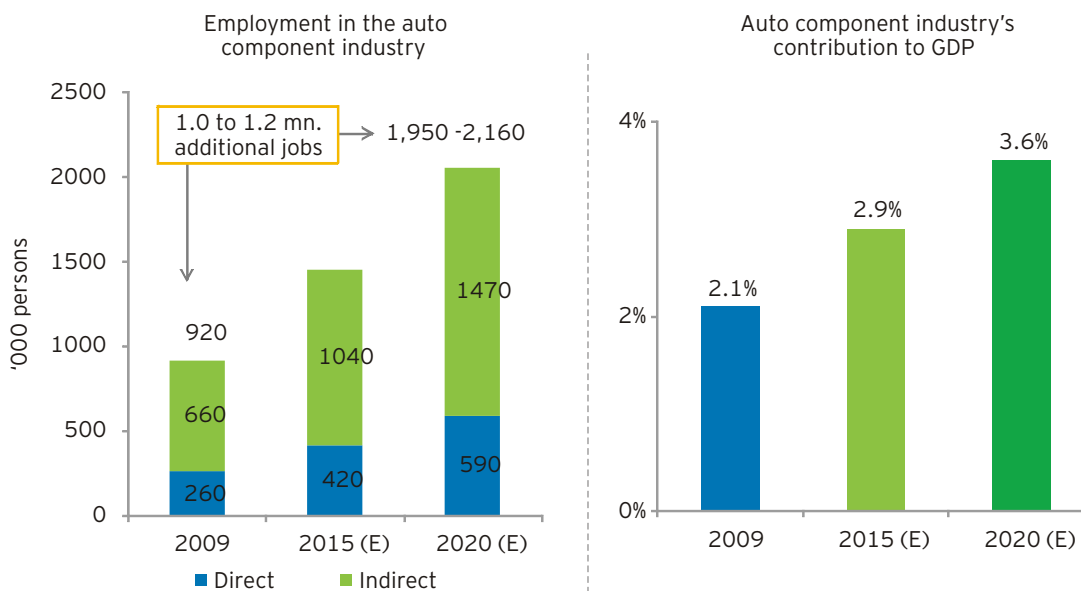
The Indian auto component industry can grow to ₹ 4.9 - 5.4 lakh crores (USD 103 - 113 billion) by 2020. This includes the domestic demand and the export potential, but excludes revenues from international operations.

Figure 20 Total potential



The auto component industry can be an engine of India's economic growth as it has the potential to contribute 3.6% of the GDP by 2020, up from the current level of 2.1%. In order to realize its full potential the auto component industry would require to employ 1.0-1.2 million additional personnel - both direct and indirect.

Figure 21 Auto component industry's contribution to employment generation and to India's GDP



Source: Economic Survey FY08, IMF, EY Analysis

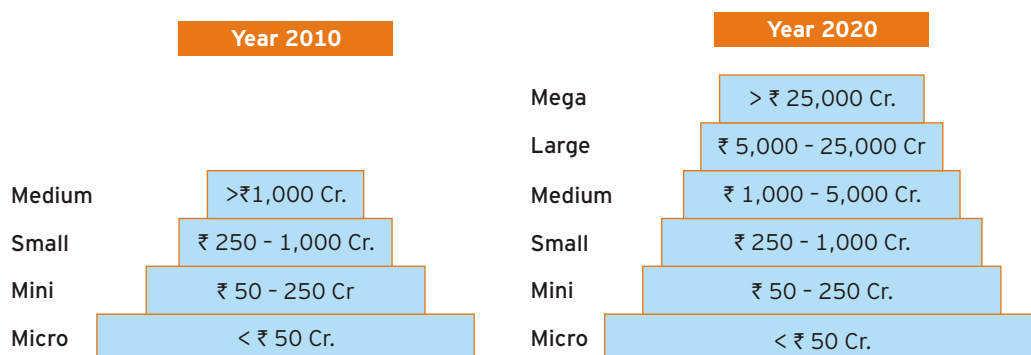
Further the auto component industry would require an average investment of ₹ 0.16 lakh crores (USD 3.5 billion) per annum totaling ₹ 1.6 - 1.8 lakh crores (USD 33 - 38 billion) of additional investments by 2020. According to ACMA the total investment in the last five years up to FY10 was ₹ 0.25 lakh crores (USD 5.25 billion). Due to the high asset-intensity and low return on capital in the industry, Indian component suppliers would need to have well planned investment strategies to cater to the large investments requirements. Support from OEMs and major suppliers for scaling up of operations of the supply base will become critical in the near future.

6. Recommendations to achieve potential

Currently, the Indian industry is comprised of a large number of small and medium size players. This structure is not expected to change significantly by 2020¹⁵. Even though consolidation is expected, the industry will continue to have a base of small, mini and micro players. Component manufacturers that are unable to scale up their businesses would either get acquired or be eliminated. Many OEMs are actively planning to or reducing their supply base and looking at fewer, large suppliers. New component manufacturers will also keep entering the automotive ecosystem either with improved existing products or innovative new products.

Indian component manufacturers can aspire to become much larger by 2020. Currently, there are no mega but only a handful of large suppliers. Very few companies today have consolidated turnover of more than ₹ 5,000 Crores (USD 1.1 billion).

Figure 22 Auto component industry structure



Note : Numbers in the boxes represent typical revenue profile of these suppliers

As foreign OEMs scale up their Indian operations, they are likely to have more suppliers from their home countries setting up production bases in India. For example, Toyota Europe has around 200 suppliers, roughly half of which are of Japanese origin, or JVs between Japanese and local European companies. Korean suppliers such as Hyundai Mobis have also followed the same route. In case domestic component manufacturers are unable to scale up operations rapidly to meet OEM demand, OEM's may be forced to import or engage with foreign component manufacturers to establish/grow their presence in India.

¹⁵ The intent here is not to discuss the tiered structure of the Indian automotive industry. Hence, these size-based segments should not be confused with hierarchical supplier tiers.

Indian suppliers can also expect to move overseas with the Indian OEM's as they establish overseas vehicle assembly operations as part of their globalization strategies.

Evolution of the Korean auto components industry

In 1999, the Korean auto components industry, had a similar profile as that of the current Indian industry. The industry turnover was USD 16.4 billion and it comprised of about 1,100 suppliers (mostly smaller) averaging 240 employees. The industry also included some large foreign players like Bosch, Delphi, Valeo, Denso and Visteon. The domestic component manufacturers largely depended on a few OEMs. In early 2000s, 51% of the companies supplied parts to a single OEM and only 7% supplied to all four OEMs - Hyundai/ Kia, GM-Daewoo, Renault Samsung and Ssangyong.

By 2005, large US and European suppliers, that brought along fresh capital and state-of-the-art manufacturing practices helped improve local quality. Korea's parts makers started offering components that were of better quality than their Chinese competitors and at costs that were lower than those of Japanese suppliers.

By 2007, the industry turnover reached USD 54 billion. The current industry structure includes a number of large suppliers both foreign and domestic. Domestic suppliers that have become big include Hyundai Mobis, Daewoo Telecom, Mando Corp. and Korea Automotive Systems Co. However, the industry still remains fragmented and has about 910 suppliers.

There still remains a need for further diversification of the customer base, restructuring, and consolidation among domestic suppliers. The government is promoting consolidation and has set up a Won 1 trillion fund (USD 845 million) which can be used to buy stakes in foreign suppliers. The government also plans to exempt component suppliers from certain taxes to promote scaling up through M&A.

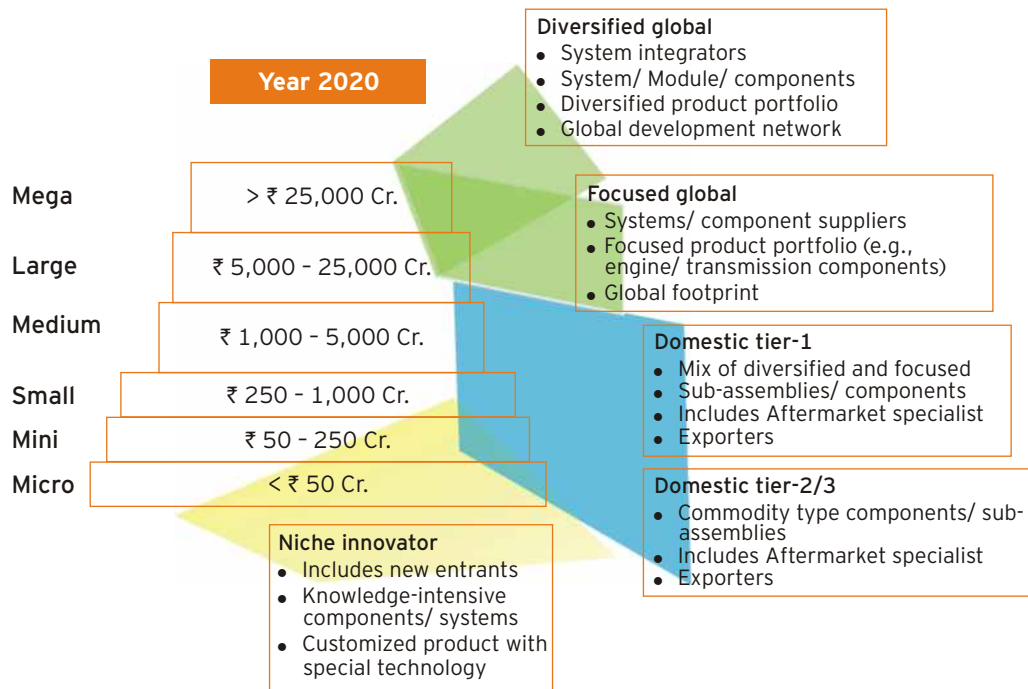
Source: Korea Automobile Manufacturers Association, Korea Auto Industries Coop. Association, Global Insight, EY analysis

Component manufacturers can aspire for one of the five strategic positions

The new scale of operations that would result by 2020 provides an opportunity for component suppliers to position themselves in five possible ways.

Figure 23 Potential strategic positions

Typical supplier characteristics in 2020



Indian component suppliers will need to develop a unique set of capabilities to reach their identified strategic positions.

Diversified global

A diversified global supplier would span multiple component groups and geographies and position itself as a system integrator. For example, the supplier could be manufacturing body & structural, suspension and interior components as part of its product portfolio. It would need to have a global manufacturing footprint to support key customers in multiple geographies. Inorganic growth could be a key element of its growth strategy. Supplier would invest in R&D and would have in-house product design, testing and validation facilities. Strong system integration and system/ module development capabilities with deep program management and risk management skills. Supporting capabilities would include advanced IT systems to manage and optimize global operations.

Figure 24 Capabilities for becoming a successful diversified global component manufacturer

Core capabilities	Design, engineering & validation <ul style="list-style-type: none"> • System integration & design • Program management • Global design centers • Innovation I system functionality 	Manufacturing <ul style="list-style-type: none"> • Global development network • Tax-efficient supply chain • Flexible manufacturing • Strong assembly operations • Global sourcing 	Sales & marketing <ul style="list-style-type: none"> • Brand management • Account management • Product portfolio management
	Enabling capabilities		
Enabling capabilities	Information technology, Capital management, Risk management <ul style="list-style-type: none"> • Advanced decision support systems for optimizing global operations • Strong balance sheet along with world-class financial reputation • Managing operating leverage, i.e., fixed costs • Acquisition due-diligence (both financial and market) and integration management 		
	People and organization <ul style="list-style-type: none"> • Decentralized operations and decision-making • Strong in-house M&A function to support inorganic growth • Global mobility for middle/ top management 		

Focused global

A focused global player would position itself as a global leader in its core segment. Such a player would be at the forefront of its product category and would actively shape the industry developments. It would have a global manufacturing footprint and would acquire evolving technologies inorganically. The supporting capabilities required for such a supplier would be similar to that of a diversified global supplier. Additionally, it would need to be able to bet on the right products and technologies that would succeed in future.

Figure 25 Capabilities for becoming a successful focused global component manufacturer

Core capabilities	Design, engineering & validation <ul style="list-style-type: none"> • System/ component design • Strong R&D & innovation management • New product introduction • Global design centers 	Manufacturing <ul style="list-style-type: none"> • Global flexible, manufacturing footprint • Backward integration/ global sourcing • Tax-efficient supply chain 	Sales & marketing <ul style="list-style-type: none"> • Global function • Brand management • Account management (OEM's & SI's) • End-consumer research
	Enabling capabilities		
Enabling capabilities	Information technology, Capital management, Risk management <ul style="list-style-type: none"> • Integrated IT systems for optimizing global operations • Managing risks of launching new products and technologies • Managing operating leverage, i.e., fixed costs • Acquisition due-diligence - both financial and market 		
	People and organization <ul style="list-style-type: none"> • Global mobility for middle/ top management • Global multi-cultural workforce • Talent management 		

Domestic tier-1

A domestic tier-1 would be mainly an India-based supplier that would focus on the Indian OEM market, exports and the domestic Aftermarket. Such a player It would need to have unique capabilities to enable it succeed in the Indian market. The product portfolio of a Domestic Tier-1 supplier could be diversified or focused. Supplier development , especially of the smaller tier 2 and 3, would be critical for its success. It would need to have design, engineering and validation capabilities.

Figure 26 Capabilities for becoming a successful domestic tier-1 manufacturer

Core capabilities	Design, engineering & validation <ul style="list-style-type: none"> • System/ component design, engineering and validation • Frugal engineering • Technology alliances/JV's 	Manufacturing <ul style="list-style-type: none"> • Manufacturing footprint in all domestic auto hubs • Large automated plants • Flexible manufacturing/ S&OP • Supplier development 	Sales & marketing <ul style="list-style-type: none"> • Brand development • Account and product portfolio management • Channel management
	Information technology, Capital management, Risk management <ul style="list-style-type: none"> • Core transaction and decision support systems for optimizing domestic operations • Treasury function • Alliance/ JV management • Supplier risk management 		
	Enabling capabilities People and organization <ul style="list-style-type: none"> • Strategic business units (SBUs) for managing diversified businesses • Focused function for Aftermarket channel management • Formal HR policies, processes and systems 		

Domestic tier-2/3

A domestic tier-2/-3 supplier would also be an India-based manufacturer and would focus on supporting the domestic tier-1 suppliers and the Aftermarket. It would need large volumes to keep costs low. A diversified customer base spread across different auto and non-auto sector would help in having appropriate scale. Critical success factors would be its ability to raise capital, deploy decision support systems and build deep process engineering capabilities.

Figure 27 Capabilities for becoming a successful domestic tier-2/ -3 manufacturer

Core capabilities	Design, engineering & validation <ul style="list-style-type: none"> • Build-to-print design/ job shop • Technical alliances • Strong process developmnt • Manufacturing engineering 	Manufacturing <ul style="list-style-type: none"> • Manufacturing footprint in all domestic auto hubs • Strong raw material/ commodity sourcing • Operational excellence 	Customer management <ul style="list-style-type: none"> • Managing diversified customer base across auto and non-auto industries
	Information technology, Capital management, Risk management <ul style="list-style-type: none"> • Scalable IT & management information systems (MIS) • Raising expansion capital • Foreign exchange management to minimize export/ import currency risks 		
Enabling capabilities	People and organization <ul style="list-style-type: none"> • Flatter organization structure; focused function for Aftermarket management • Talent acquisition and retention • Formal HR policies, processes and systems 		

Niche innovator

A niche innovator would focus on product innovation and develop new products requiring special technology. It would leverage India's strong IT skills and potential in R&D. For example, such a company could produce niche components (e.g., sensors, plastic parts) or systems (e.g., navigation systems, immobilizers) based on IT, embedded software or newly invented recyclable composite materials or polymers.

Figure 28 Capabilities for becoming a successful niche component manufacturer

Core capabilities	Design, engineering & validation <ul style="list-style-type: none"> • Strong R&D focus on specific pdts./ technologies • Customized solutions • Innovation management 	Manufacturing <ul style="list-style-type: none"> • Domestic manufacturing footprint • Operating smaller plants efficiently 	Sales & marketing <ul style="list-style-type: none"> • Customer acquisition • Customer loyalty management
	Information technology, Capital management, Risk management <ul style="list-style-type: none"> • IT systems focused mainly at product design and development • Raising risk capital • Cash flow management • Managing risks of launching innovative products 		
Enabling capabilities	People and organization <ul style="list-style-type: none"> • Innovative recruitment techniques to attract talent • Talent retention 		

Indian government support must for scaling up domestic component industry

The Indian government, over the last few years, has been undertaking several initiatives to support the automotive and the broader manufacturing sector. For example, the government recognizes that infrastructure is one of the major bottlenecks constraining growth of Indian manufacturing. To address the issue, it has made huge budgetary outlays to construct and upgrade roads and ports. Similarly, to address the inefficiencies created by a plethora of indirect taxes, the government plans to roll out the GST regime in the near future. The government also launched the National Skills Development Corporation (NSDC) last year to facilitate development and upgradation of the growing Indian workforce through its training programs.

Going forward, besides keeping the momentum on existing initiatives, the government would need to address other critical issues specific to the auto industry. These issues, if left unaddressed would restrict the Indian auto component industry from scaling up and achieving its Vision 2020 goals.

Capital

Access to and availability of cost-effective capital will be critical for the industry, given the size and speed of investments that are needed. This is an immediate imperative as investments of ₹ 1.6 -1.8 lakh crores (USD 33 - 38 billion) are needed by 2020. This is many multiples of the average investment of USD 1.1 billion over the last 5 years. Moreover, because of the rapid demand growth last year the auto industry today is constrained by both vehicle assembly and supply chain capacity in certain segments. The growth momentum is continuing with growth rates in FY11 are at 33% for the period April to July 2010 on a year-on-year basis.

This creates an imperative for the industry to be able to access capital to fund the investments required. Support from the government would be needed to attract and facilitate investment in auto component companies, given the pace and scale of capacity ramp-up required. The government should consider options to facilitate and attract capital and consider providing incentives to retail and private investors, domestic financial institutions, and strategic investors that invest in the domestic auto components sector.

Technology

There is a need for significant infusion and absorption of technology to build domestic capability and to support faster product development plans of OEM's. The government should consider setting up a Technology Development & Upgradation Fund for the auto components industry. This would provide much needed access to technology, particularly to the small and medium enterprises that make up a bulk of the industry. This would also ensure that the Automotive Mission Plan 2016 objectives are achieved.

There is also a need to create an environment for R&D through stable and long-term incentives to individual companies and fostering linkages between industry and academia for pre-competitive research. Such linkages would help component manufacturers develop and extend frugal engineering concepts and address current issues around design, engineering, testing and validation. These incentives need to be stable and for the long-term since the desirable benefits of these investments would accrue after a gestation period due to the long product development and R&D cycles in the industry.

Infrastructure

Creation of auto supplier parks that provide high quality infrastructure would enable the large number of small and medium enterprises that today individually need to address a host of common infrastructure issues. Such supplier parks can be set up in the regional auto hubs (NCR, Pune, Chennai, etc) and should provide basic facilities to component suppliers like continuous power supply, park-to-port rail links, tooling centers, technical training centers for workmen skill upgradation, and banks for providing easy access to capital.

The Korean government has also set up an auto parts innovation center in Ulsan city. The city hosts the Ulsan Auto Valley that includes, besides the innovation center, a parts and raw material complex and graduate school of automotive technology to develop engineers and skilled workmen to feed the Ulsan Auto Valley.

Shortage and quality of power supply reduces competitiveness of many automotive product categories in comparison to other low cost countries. The power situation has a direct bearing on the cost, quality and delivery performance of the auto component industry and needs to be addressed on priority.

Land acquisition reforms are required so that new plants can be set up quickly to meet rising demand levels. The current pace of land acquisition is too slow and results in project delays. The State governments need to play an active role in this regard.

The Indian government is undertaking various initiatives with huge budgetary outlays for improving power, ports, road network. Such initiatives need to be executed on a priority basis and infrastructure project execution in the regional auto hubs needs to be accelerated. Enhancing port connectivity and last-mile connectivity to the regional auto hubs should be accorded priority.

Support of the State governments will also be needed to accelerate local programs in these hubs.

Trade policy

Current trade policy development does not have enough focus on the auto sector. To establish India's position as a global vehicle manufacturing hub, specific focus is recommended to enhance the overall competitiveness and export potential. Trade policies need to have a long term and stable outlook as the industry lead times for product development are over 2 to 3 years. A stable trade environment would enable auto component suppliers to confidently invest in export development.

In addition to existing FTA negotiations, the Indian government should also consider having FTAs with major auto producing countries which need similar products and are poised for growth. This will help Indian companies to supply their products at competitive prices in these large markets.

The existing inverted duty structure makes value addition less competitive in those components that require imported raw material. The government needs to rectify this anomaly such that Indian component manufacturers remain competitive in domestic and export markets.

Rationalization of procedures involved in trade to make the processes more efficient by removing redundant approvals as well as using technology to integrate disparate systems used by various agencies can help in reducing the transaction times and costs.

Manpower

The current labor laws disincentivize manufacturers to hire large number of permanent workmen. This results in manufacturers under-investing in workmen skills and productivity improvement. One of the key criteria to achieve productivity improvements is the existence of a stable workforce that can be trained and motivated to achieve continuous improvements. The existing labor laws also drive manufacturers to set up multiple sub-optimal plants with a distributed workforce with varying standards. Improving labor policies would have a significant impact on enhancing productivity levels and the overall competitiveness of the Indian auto component industry. Revised labor policies should allow manufacturers to maintain a flexible workforce.

The government should ensure that the supply of manpower from the various training and educational institutions matches the industry's skills requirements. Increasing interaction levels between such institutes and the industry would also help in minimizing the gap between skills requirement vs. availability. It should ensure that the curriculum in these institutes is developed in collaboration with industry. The creation of the Automotive Skill Development Council is a welcome step in this direction.

Other areas

The broad spectrum of indirect taxes on goods and services are expected to be rationalized the new GST regime. This is a step in the right direction and the government needs to ensure that it is implemented on a priority basis.

Role for ACMA

ACMA is the nodal agency for the Indian auto component industry. The association is helping in policy formulation and is actively involved in trade promotion, technology up-gradation, quality enhancement and collection & dissemination of knowledge and information to its members. It is also involved in participation in international trade fairs, overseas trade delegations and bringing out publications on various subjects related to the automotive industry.

To help the industry scale up successfully, ACMA needs to continue with its existing activities and should also focus on the following initiatives:

ACMA should set up a Vision 2020 Task Force to monitor the progress of various initiatives with the Government as well as provide periodic updates to the members. The automotive industry in India is expected to experience substantial growth related changes, many of which have been discussed in this report. These need to be monitored and periodic updates on emerging trends provided to the members to enable them adjust their strategies and plans proactively.

ACMA should further enhance its efforts to promote the Indian auto component industry domestically as well as internationally to make it more attractive to investors. Raising capital would be the key for scaling operations. Globally, capital is looking for attractive investment destinations and lots of industries are vying for the same. As a result, the profile of the Indian auto component industry needs to be further raised so that it can attract capital more easily.

The scope of cluster-based initiatives should be broadened to include a wider array of operational issues faced by component manufacturers. Just like the quality cluster, ACMA can set up clusters for improving throughput, productivity, marketing (especially in export markets), and logistics operations. One of the priority areas would be on raising capital and investment planning.

Efforts to foster strong links with educational institutes to help align the curricula with industry requirements are needed. Such efforts would help both address two imperatives for the industry. Technology upgradation - through research and development, and skilled manpower availability of graduates that are more in line with industry's skill requirements. ACMA should liaise with training and education institutes to help align the institutes' curricula with industry requirements.

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Ernst & Young Offices

Ahmedabad
2nd Floor, Shivalik Ishaan
Near CN Vidhyalaya,
Ambawadi,
Ahmedabad - 380 015
Tel: + 91 79 6608 3800
Fax: + 91 79 6608 3900

Bengaluru
"UB City", Canberra Block
12th & 13th floor
No.24, Vittal Mallya Road
Bengaluru - 560 001
Tel : + 91 80 4027 5000,
6727 5000
Fax: + 91 80 2210 6000
(12th Floor)
Fax: + 91 80 2224 0695
(13th Floor)

Chennai
TPL House, 2nd floor
No 3, Cenotaph Road
Teynampet
Chennai - 600 018
Tel: + 91 44 4219 4400
Fax: + 91 44 2431 1450

Gurgaon
Golf View Corporate Tower - B
Near DLF Golf Course
Sector 42
Gurgaon - 122002
Tel: + 91 124 464 4000
Fax: + 91 124 464 4050

Hyderabad
205, 2nd floor
Ashoka Bhoopal Chambers
Sardar Patel Road
Secunderabad - 500 003
Tel: + 91 40 6627 4000
Fax: + 91 40 2789 8851

Oval Office
18, iLabs Centre
Hitech City, Madhapur
Hyderabad - 500081
Tel: + 91 40 6736 2000
Fax: + 91 40 6736 2200

Kolkata
22, Camac Street
Block 'C', 3rd floor
Kolkata - 700 016
Tel: + 91 33 6615 3400
Fax: + 91 33 2281 7750

Mumbai
6th floor & 18th floor
Express Towers
Nariman Point
Mumbai - 400 021
Tel: + 91 22 6657 9200 (6th floor)
Fax: + 91 22 22876401
Tel: + 91 22 6665 5000 (18th floor)
Fax: + 91 22 2282 6000

Jalan Mill Compound
95, Ganpatrao Kadam Marg
Lower Parel,
Mumbai - 400 013
Tel: + 91 22 4035 6300
Fax: + 91 22 4035 6400

Block B-2, 5th Floor
Nirlon Knowledge Park
Off. Western Express Highway
Goregaon (E)
Mumbai - 400 063, India
Tel: +91 22 6749 8000
Tel: +91 22 6749 8200

New Delhi
6th floor, HT House
18-20 Kasturba Gandhi Marg
New Delhi - 110 001
Tel: + 91 11 4363 3000
Fax: + 91 11 4363 3200

Pune
C-401, 4th floor
Panchshil Tech Park
Yerwada (Near Don Bosco School)
Pune - 411 006
Tel: + 91 20 6601 6000
Fax: + 91 20 6601 5900

Automotive Component Manufacturers Association of India

HEAD OFFICE

6th Floor, The Capital Court, Olof Palme Marg, Munirka
New Delhi-110 067, India
Tel: +91-11-2616 0315, 2617 5873, 2617 5874, 2618 4479
Fax: +91-11-2616 0317, E-mail: acma@acma.in
Website: www.acmainfo.com

REGIONAL OFFICES

Eastern Region

Room No. 309
C/o Adityapur Industrial Area Development Authority (AIADA)
Vikas Bhawan, Adityapur, Jamshedpur-831 013, Jharkhand, India
Tel: +91-657-3203261
Telefax : +91-657-2372397, Email: acmaer@acma.in

Western Region

80, Dr. Annie Besant Road, Worli,
Mumbai-400 018, Maharashtra, India
Tel: +91-22-2493 3507, 2497 5877, 2498 0502
Fax: +91-22-2493 6527, E-mail: acmawr@mtnl.net.in

Western Region Zonal Office

Office No. C,
10th Floor, Godrej Eternia "C"
Old Mumbai-Pune Highway
Wakdevadi, Shivaji Nagar
Pune 411 005, Maharashtra, India

Southern Region

1-B, "Crystal Lawn",
20, Haddows Road, First Street,
Chennai-600 006, Tamil Nadu, India
Tel: +91-44-2833 0968, 2833 0949
Fax: +91-44-2833 0590, E-mail: acmasr@airtelmail.in

Southern Region Zonal Office

(Karnataka & Hosur)
Shop No. 1, 1st Floor
NGV Commercial Complex
National Games Village
Koramangala, Bangalore 560 047, Karnataka, India
Tel: +91-80-2570 2855
Fax: +91-80-4093 9689, Email : acmakh@airtelmail.in

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Automotive Component Manufacturers Association of India

The Automotive Component Manufacturers Association of India (ACMA) is the nodal agency for the Indian Auto Component Industry.

Its active involvement in trade promotion, technology up-gradation, quality enhancement and collection and dissemination of information has made it a vital catalyst for this industry's development. Its other activities include participation in international trade fairs, sending trade delegations overseas and bringing out publications on various subjects related to the automotive industry.

ACMA is represented on a number of panels, committees and councils of the Government of India through which it helps in the formulation of policies pertaining to the Indian automotive industry.

For Exchange of Information and especially for co-operation in trade matters, ACMA has signed Memoranda of Understanding with its counterparts in Australia, Brazil, Canada, Egypt, France, Germany, Iran, Italy, Japan, Malaysia, Pakistan, South Africa, South Korea, Spain, Sweden, Thailand, Tunisia, Turkey, UK, USA and Uzbekistan.

ACMA represents over 600 companies. In the domestic market, they supply components to vehicle manufacturers as original equipment, to tier-one suppliers, to state transport undertakings, defence establishments, railways and even to the replacement market. A variety of components are being exported to OEM's and after-markets world-wide.

ACMA is inseparably linked with the auto component sector and hence forms the channel through which business contacts are established with the Indian Automotive Industry.

Further information and data on the Indian automotive industry is available on the ACMA Website: www.acmainfo.com

ACMA is an ISO 9001:2000 certified Association.