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ACMA
Automotive Component Manufacturers Association of India

Making Indian auto component industry future-ready

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Foreword

The government needs to ensure that it provides a conducive policy environment that boosts industry confidence and attracts capital for local manufacturing and innovation.

For India to become a US$ 10 tn economy in 2030 from its 2016 level of US$ 2.26 tn, and possibly the third-largest economy in the world, its real rate of growth must be at least 7 per cent per annum. However, if the real growth rate is 9 per cent , its Gross Domestic Product (GDP) will be US$ 14 tn, reflecting the future readiness of our economy to take on challenges and make the most of opportunities.

International Monetary Fund (IMF) has endorsed India as the fastest growing economy globally with a growth projection of 7.4 per cent in 2018, while its global growth forecast stands at 3.9 per cent. The manufacturing sector will be the mothership of this growth. Make in India initiative by our Hon'ble Prime Minister Shri Narendra Modi aims to increase the share of the Manufacturing sector to GDP to 25 per cent by 2022, from the current rate of 16 per cent. This will create 100 mn new jobs by 2022.

The Indian auto industry is one of the largest in the world. The industry accounts for 7.1 per cent of the country's GDP. It is poised to become fourth largest manufacturer of automobiles globally by 2020 after China, the US and Japan. Not to mention, India is currently world's second largest two-wheeler manufacturer. While governments across the world, including the Indian government, have been focusing on reducing their global carbon footprint, the disruptions triggered by the introduction of electric vehicles (EV), digitisation and connectivity across auto and auto components industry, is hard to ignore.

Going forward, it will be critical for Indian auto component manufacturers to address the following challenges and gaps across four areas:

1 Developing capability in R&D and technology in software and its integration with hardware components.
2 Addressing skill gaps in talent required for driving innovation across new technologies and product offerings.
3 Increase global footprint through M&As.
4 Improve the existing industry perception from 'print to manufacture' to a 'customisable and integrated offering' industry.

Union Budget 2018-19 was well received by the Indian auto component sector. The increase in custom duty on critical components such as engine components and transmission parts to 15 per cent from earlier 7.5 per cent is a welcome step to encourage localisation. Reduction of corporate tax to 25 per cent for MSMEs with turnover of INR 250 cr will help unorganised auto component segment as over 80 per cent of the supplier base falls under the MSME bracket. Simplification of procedure for credit availability through online system for SMEs is a welcome step too.

However, given the government's vision on electric mobility, rationalising GST rates on EVs and EV batteries and components will be critical. The government needs to ensure that it provides a conducive policy environment that boosts industry confidence and attracts capital for local manufacturing and innovation. Clarity on policy and roadmap for industry transition will be critical for Original Equipment Manufacturers (OE) and component manufacturers to meet requirements and prioritise resources and efforts.

Disruption is the new normal. This is the right time for India's automotive and auto component industry to display its resilience and capability on the global stage.

Vishesh C Chandiok
National Managing Partner
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Foreword

The industry will have to take significant measures and steps to convert from being an export deficit industry to an export surplus one

The global automotive and auto component industry is at an inflection point. Increased environmental concerns and various governments trying to meet their respective climate agenda has forced OEs to move towards cleaner and greener transportation technologies.

The global automotive industry is staring at headwinds arising out of disruptions on account of shift in powertrain technology, from traditional internal combustion engines to electric and enhanced connectivity of vehicles with myriad connected features. This disruption will change the way auto industry has been operating in the last 100 years or so, ushering in both, opportunities and challenges for OEs and component manufacturers.

The Indian auto component industry, under the AMP 2026 policy, is set to touch US$ 200 bn (currently estimated at US$ 43.5 bn). Exports are expected to reach US$ 70 to 80 bn, roughly accounting for 40 per cent share in the total turnover with key emphasis on technology and R&D development, collaboration and alliances to address capability gaps and positioning Indian auto component industry as a preferred manufacturing destination for auto components globally.

Improving exports (currently in deficit) will be key to achieve this target. The industry will have to take significant measures and steps to convert from being an export deficit industry to an export surplus one.

There will be significant challenges for powertrain engine and transmission manufacturers as ICE will witness reduced demand in coming years, putting pressure on players to develop capabilities across EV powertrain. The recent decision by the government to withdraw subsidy on hybrid vehicles and increase GST on hybrid vehicles is not favourable considering its vision to have all emission-free vehicles on road by 2030.

This paper highlights key opportunities as India's auto industry matures and covers the strategic positions that players could take in order to be relevant with changing business dynamics.

Saket Mehra
Partner
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Global Auto Industry

Migration from a Mature to a Vibrant & Emerging Economy

The global automotive industry is at a crossroad. Unlike the past cycles of booms and busts, the industry is witnessing disruptions across technology, vehicle connectivity, consumer preferences and business models, that will result in an industry that bears little resemblance to what it was just a decade or two ago. The shift to cleaner and greener transportation mediums in the form of roll-out of Battery Electric Vehicles (BEVs) coupled with vehicles that are more intelligent as ever; the integration of autonomous features across safety, driving and parking are all indications on what the future holds for the industry.

The next wave of growth in the auto industry will be led by emerging and vibrant economies. The Indian economy is projected to grow at 7.4 per cent in 2018, marking it the fastest growing emerging economy globally. The industry is witnessing a significant shift in the focus of Automotive OEs in the form of their investments aimed towards executing their market strategy though manufacturing and product roll out.

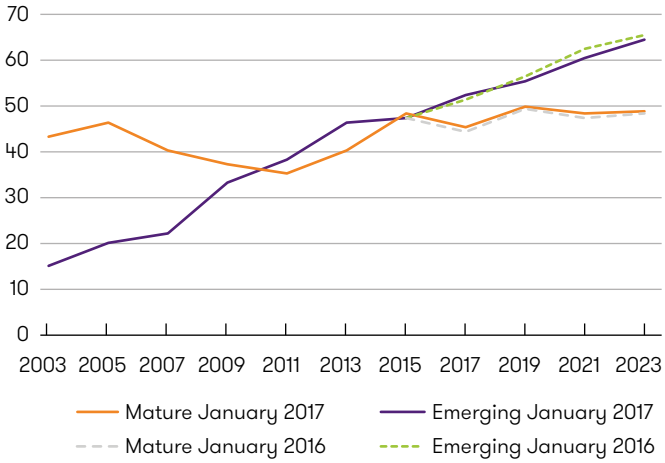
Real GDP of Major Economies

Percentage change	2014	2015	2016	2017	2018
World	**2.8**	**2.8**	**2.5**	**2.9**	**3.1**
United States	2.4	2.6	1.6	2.3	2.6
Canada	2.6	0.9	1.4	2.3	2.4
Eurozone	1.2	1.9	1.7	1.6	1.6
United Kingdom	3.1	2.2	1.8	1.6	1.2
China	7.3	6.9	6.7	6.5	6.2
Japan	0.2	1.2	1	1.1	0.9
India	7.2	7.9	6.7	7.2	7.4
Brazil	0.5	-3.8	-3.5	0.3	1.8
Russia	0.7	-2.8	-0.2	1	1.7

Source: IHS Markit

The world economy is projected to grow at 3.1 per cent in 2018. India and China are the only two economies that are projected to surpass the world's growth rate which is pegged at 7.4 per cent and 6.2 per cent in 2018 respectively. The mature economies on the contrary will witness sub 2.2 per cent average growth rates.

Emerging Markets' Potential



Source: IHS Markit

China's economic growth is expected to slowdown because of imbalances in credit, housing, and industrial markets, resulting in less momentum behind autos sales growth. Political uncertainties could lead to an "eccentric" phase of globalisation. Also, the slow pace of economic reforms in many economies with emerging market is holding back income growth and vehicle demand.

Russia and Brazil are expected to recover in 2018, but economic crises can have magnified impact on car sales and both the markets may find it difficult to chase growth targets. Wide economic dislocation has a lasting and lowering effect on car market potential.

Many mature markets have been witnessing quicker releases of newer vehicles on account of increased demand. Brexit has had significant impact on the vehicle sales in Europe. For example, Germany witnessed a 2.6 per cent increase in vehicle sales over 2016, registering sales of 3.7 mn units in 2017. UK witnessed a drop in sales by almost 6 per cent in 2017 after registering sales for 5 straight years. This trend is expected to last till 2019.

The Indian economy is projected to grow at 7.4 per cent in 2018 as against China's 6.8 per cent, making it the fastest growing emerging economy globally. The acceleration in India's growth rate ahead comes after the slowdown last year due to demonetisation and the implementation of Goods & Services Tax (GST). The government's impetus on Make in India, investment in road and transportation infrastructure & Smart Cities, rising middle class disposable income and lower inflation will cumulatively contribute to this growth.

What this means for the Automotive industry is a strategic shift in focus from mature economies to vibrant emerging economies. The industry will witness a significant shift in the demand for components too. Tightening of regulatory environment, intensifying safety standards and greater adoption of technology has triggered disruptions in the form of Electrification, Autonomous driving, and Connected cars. The migration of powertrains from traditional Internal Combustion Engine (ICE) platform to Electric, connected feature evolution in the form of V2V and V2I connectivity, translates into significant opportunities and challenges for OEs and component manufacturers.

Component manufacturers across engine parts and drive transmission segments will witness maximum heat emerging out of headwinds EV migration. However, manufacturers across body part and chassis, suspension and braking, electric equipment and parts will not witness and challenges.

Survival of the fittest

Although 2016 witnessed decreased M&A deal value (-34 per cent), the volume of reported deals stood well past 580, down 1.4 per cent in the global automotive industry. Unlike past, where M&A deals were focused on, the future of M&A deals will be largely governed by technological acquisition and new service and business model expansion.

M&A within the Automotive Component Manufacturers will be largely governed by an intent to access expertise and technology across three broad areas:

1 Migration from traditional platforms to self-driving and electric platforms
2 Driver and Vehicle interface technology &
3 Electronics Technology

In 2016, China, the US and Japan contributed to over 80 per cent of the deal value (~US$ 32 bn) as acquirer countries, however, China, US and Germany remained key target nations for M&A accounting for over 50 per cent of deal volume.

Deal Landscape 2016 (non-exhaustive)

Year	Target	Acquirer	Region Target	Region Acquirer	Value (US$ Mn)
2016	GETRAG GmbH & Cie KG	Magna International Inc	Europe	ROW	2,670
2016	CGS Holding AS	Trelleborg AB	Europe	Europe	1,250
2016	Alliance Tire Group BV	Yokohama Rubber Co Ltd	Europe	Asia	1,180
2016	Punch PowerTrain NV	Yinyi Group Co Ltd	Europe	Asia	1,100
2016	Gestamp Automocion SL	Corporacion Gestamp SL	Europe	Europe	990
2016	Key Safety Systems Inc	Ningbo Joyson Electronic Corp	US	Asia	900
2016	Vibracoustic GmbH	Freudenberg & Co KG	Europe	Europe	830
2016	Faurecia SABumpers business	Compagnie Plastic Omnium SA	Europe	Europe	720

Source: Secondary Sources

India witnessed 22 mainstream IPOs raising US$ 2.5 bn in the YTD 2017. Key sectors were banking and financial services, healthcare and pharma, transport, education and IT & ITES.

India entered deals worth US$ 47.8 bn in YTD 2017, 34 per cent higher than YTD 2016. In spite of ambiguity among PE investors on the impact of GST, the deal activity exhibited 74 per cent growth in YTD 2017 as compared to last year.

M&A vales recorded a promising 22 per cent growth as the country saw increasing domestic consolidation. There have been 11 M&A seals from Jan-May 2017 in the automotive sector, up by 170 per cent to US$ 254.8 mn as compared to the last year.

PE investment rose 607 per cent to US$ 90.2 mn resulting from three deals in Auto Parts and Equipment. These included Piramal Finance's investment of US$ 42.5 mn in RSB Transmissions India and US$ 44.9 mn in IndoShell Mould. SAIF Partners India invested around US$ 2.8 mn in Fiem Industries.

Select M&A deals 2016-18.

1 **M&M's acquisition of BSA:** M&M acquired classic British motorcycle brand BSA for INR 28 crore as a part of M&Ms business strategy to create more lifestyle brands and expansion of segment offering. Mahindra has already announced that it will not be launching the BSA motorcycles here in India very similar strategy as we have seen Peugeot Motorcycles.
2 **Ashok Leyland acquiring LCV business from Nissan Motor Corporation:** In late November Ashok Leyland completed the acquisition of Nissan Motor's stake in each of its three joint ventures formed between the two companies. Under the new deal Ashok Leyland will continue to build Dost, Mitr and Partner LCVs which are based on Nissan's design and technology under a licensing agreement.
3 **M&M's acquisition of Turkey based Erkunt Traktor Sanayii:** Mahindra & Mahindra Ltd., the world's largest tractor company by volume and part of US$ 19 bn announced its second acquisition in Turkey on 20th September 2017. After acquiring stake of 75.1 per cent in Hisarlar in January 2017, M&M agreed to acquire Erkunt Traktor Sanayii, the 4th largest tractor brand in Turkey, and an associate company for an enterprise value of US$ 117 mn. It will acquire 100 per cent of tractor making operations for US$ 76 mn and 80 per cent of foundry business which provides castings to machine services for US$ 41 mn. This deal would not only allow M&M to tap the fourth largest tractor market in the world, but also to have a strong brand presence, wide portfolio of products and access to manufacturing capacity, dealer network and neighbouring markets such as Middle East, CIS, & North African markets.
4 **Mahindra & Mahindra and Ford Motors:** Mahindra & Mahindra has entered into a partnership with American car giant Ford Motors Company in September 2017. This association is expected to help Mahindra & Mahindra expand its global outreach, and help Ford Motor Company gain some more market in India, benefiting from the successful business model of its new partner. Besides helping each other get better markets within and outside India, the two car companies will cooperate in endeavours like mobility programmes, connected vehicle projects, and product development. One pivotal avenue in the partnership between Mahindra Group and Ford Group will be developing electric vehicles. This will be a crucial step forward in times when other auto companies are also looking to make a mark in the emerging electric vehicle segment.

There were few M&A deals within the Auto Component space. Select example include:

1 **Bharat Forge's acquisition of Walker Forge Tennessee, PMT Holdings:** With the deal valued at INR 95 cr, Walker Forge Tennessee has been renamed as Bharat Forge Tennessee, which is a supplier of complex and high alloy steel, engine and chassis components and has a diverse group of customers across automotive and industrial sector.
2 **Bharat Forge Ltd and Analogic Controls India Ltd:** Auto components maker Bharat Forge Ltd completed the acquisition of balance 40 per cent shares of Analogic Controls India (ACIL) on 21st September 2017 post which ACIL has become wholly owned subsidiary of Bharat Forge. Hyderabad-based Analogic's founders agreed to sell the stake as the company had a negative net worth of INR 7.88 crore as of March 2017. Bharat Forge acquired a 60 per cent

stake in the company in 2013. Bharat Forge said Analogic is "strategically important" as it has the resources and technical capability to execute projects related to defence, aerospace and electronic components and sub-systems.

3 **IMC International Metalworking Companies BV and L&T Cutting Tools Ltd:** On 16th August 2017, Larsen & Toubro Ltd (L&T) agreed to sell its entire stake in its unlisted unit L&T Cutting Tools Ltd to IMC International Metalworking Companies BV, owned by Warren Buffett-led Berkshire Hathaway Inc., for INR 174 cr. The sale is part of L&T's strategy to exit non-core businesses. L&T Cutting Tools, incorporated in 1952, manufactures fabricated metal products.

4 **Motherson Sumi's acquisition of auto business unit of Abraham and Co:** Hungary based Abraham and Co was acquired by auto component major Motherson Sumi Systems Ltd (MSSL) for about INR 77 cr in October 2016. MSSL, through its 100 per cent subsidiary, would acquire the land, building and machinery of Abraham and Co Ltd for a purchase price consideration of EUR 10.4 mn. This acquisition will help MSSL to further expand is synergies through supplies to SMR and to the new upcoming facilities in Europe.

The Indian auto component space is largely fragmented with family owned businesses. There is an increased need for small business houses to embrace globalisation in order to be competitive by actively looking at opportunities across M&A, JVs and technical collaborations to address gaps in R&D, Technology, Trade and Global expansion & Skillset and Talent. M&A in component industry is largely driven by large Tier 1 suppliers.

These companies need to embrace the right governance and culture in order to attract investors or joint venture partners. Their ability and skills need to be realigned towards a global competitive environment through demonstration of right practices, policies and working environment.

The Indian Auto Component Industry

Migration from a Export Deficit to Export Surplus

The Indian auto industry is one of the largest in the world. The industry accounts for 7.1 per cent of the country's Gross Domestic Product (GDP). Global disruptions arising out of EVs, connected and autonomous vehicles is poised to have a significant impact on the industry. While the industry is poised to become 4th largest manufacturer of automobiles globally by 2020 after China, US and Japan (India is currently world's second largest two-wheeler manufacturer), the industry is still at a nascent stage with regards to the level of preparedness and evolution maturity for facing headwinds emerging out of disruption from EV platform migration, vehicle connectivity and evolution of autonomous features.

The production output of the Indian automobile industry stood at 25.32 mn vehicles including PV, CV, 3W, 2W during 2016-17 against an output of 24.0 mn vehicles in 2015-16, registering a growth of 5.4 per cent.

Indian Automobile Production Trend

Category	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Growth Rates
Passenger Vehicles	3,146,069	3,231,058	3,087,973	3,221,419	3,465,045	3,791,540	9.40%
Commercial Vehicles	929,136	832,649	699,035	698,298	786,692	810,286	3.00%
Three Wheelers	879,289	839,748	830,108	949,019	934,104	783,149	-16.20%
Two Wheelers	15,427,532	15,744,156	16,883,049	18,489,311	18,830,227	19,929,485	5.80%
Grand Total	**20,382,026**	**20,647,611**	**21,500,165**	**23,358,047**	**24,016,068**	**25,314,460**	**5.40%**

Source: SIAM

The growth of the Indian auto component industry largely depends upon the growth of OEs and after-market demand. The OE demand accounts for ~80 per cent of the total component demand; the remaining 20 per cent is primarily by replacement/after-market segment. The Indian auto component industry is valued at US$ 39 bn in 2016, growing at the rate of over 8.5 per cent y-o-y and contributing to over 2 per cent of India's GDP.

The sector is largely unorganised comprising over 10,000 players operating in the unorganised segment primarily catering to replacement/after-market segment which contributes to ~15 per cent of total industry revenues. The replacement demand off-late has been decreasing, putting pressure on tier 3 and 4 players.

The organised sector comprises big players supplying components directly to OEs. There are over 700 players operating in this segment comprising of Tier 1 & 2 players. They contribute to 85 per cent of the market revenues.

The automobile industry is considered to be a job engine for India, and simultaneously, India is upgrading its existing contribution in the automobile Global Value Chains (GVC) to reap higher economic benefits. In general, high-value activities are skill intensive and low-value activities are labour intensive. Since bulk of India's thrust till now has been sustenance for its people – much of our GVC participation in automobiles is along labour intensive assembly, components, and basic manufacturing.

High-value activities like R&D, design, standards-development, specifications, and market development are performed in India, though at lower scales comparable to developed nations. Thus, the viciousness of the cycle is that upgrading India's GVC contribution will lead to a developed India, and a developed India will attract upgradation of GVC contribution.

Export & Import in Auto Component Industry

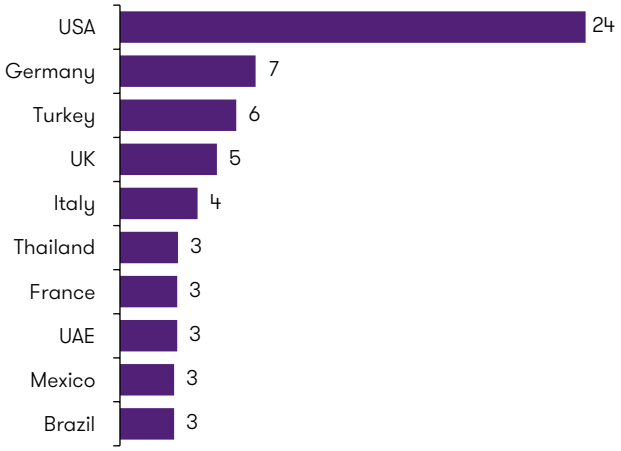
The automotive component exports in 2016 was estimated at US$ 10.9 bn, registering a CAGR of ~18 per cent from 2011, while the imports were estimated at US$ 13.9 bn in 2016, registering a CAGR of ~13 per cent since 2011; imports form 35 per cent of the total industry turnover.

Demand from Asia and Europe increased in 2016-17 witnessing a growth of ~4.5 per cent and 2.5 per cent, respectively. North America witnessed a de-growth in the demand to the tune of ~3.9 per cent on account of lower replacement demand due to increased buying in 2015-16 on vehicle purchase. The industry is expected to have a significant impact on auto sales in 2018 due to federal rate hike impacting cost of borrowing and interest rates on loans including auto loans.

Currently the Indian auto component industry exports to more than 160 countries. Key auto components exported from India include gear boxes and parts, hydraulic power steering systems and steering gear systems and its parts, diesel engine parts, drive-axles and parts, suspension systems and parts, brakes and servo-brakes, spark ignition and parts, among others.

Engine, transmission and steering parts contribute to over 40 per cent of the total export portfolio. The remaining 60 per cent comprises products including chassis, bumpers, rubber products, etc.

Exports: Top 10 Destinations (figures in per cent)



Source: ACMA

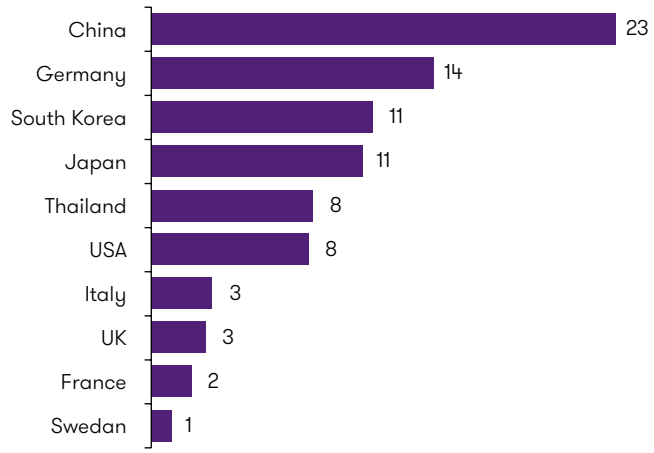
The share of imports from Asia witnessed an increase by ~2.5 per cent in 2016-17; imports from North America and Europe witnessed a de-growth of ~14.5 per cent and 7.1 per cent.

Nearly 30-35 per cent of the auto components used by OEMs are imported. The share of imported consumption has significantly increased over the last one decade with the entry of new global OEs.

In 2015-16, imports from top 10 countries comprised over 80 per cent of India's imports of auto components. Region wise, share of Asia was the highest at 58.6 per cent. This was followed by Europe comprising about 31 per cent of India's imports. About 8 per cent imports of auto components came from North America. Central and South America, Africa, New Zealand and Australia formed the remaining share of the Indian imports of auto components.

Engine transmission, steering and suspension parts account for over 50 per cent of the total component import portfolio.

Imports: Top 10 Destinations (figures in per cent)



Source: ACMA

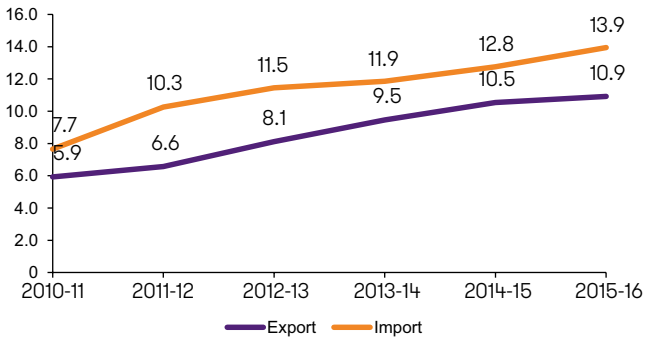
The dependence on the imports presents itself as both a threat and an opportunity for the Indian auto component manufacturers, considering the fragmented nature of the Indian auto component industry, OEs will look at forming long-term supply contracts with suppliers overseas, therefore putting pressure on local manufacturers. The opportunity for local manufacturers is to understand OEs requirements and move up the value chain while focusing on cost and quality competitiveness. For example, Chinese components are at least 30-35 per cent cheaper as compared to Indian products. The India customer is price conscious. OEs will look at bringing down the component costs to ensure competitive platform pricing.

Localisation of components will be critical too. While most of the mass brands are sourcing locally, the opportunity across component requirements for luxury platforms and upcoming electric vehicles will be a crucial for auto component manufacturers. Luxury car manufacturers at the moment look at local assembly due to scale and attractive taxes on assembly versus CBU. Indian auto component manufacturers would need to focus on developing capabilities to tap into such opportunities though modularisation.

While policy plays a crucial role in assisting local manufacturers (e.g. anti-dumping duties, localisation and sourcing norms, etc.) there will also be a need to address the dichotomy with regards to being truly global. Component manufacturers in India will be forced to go beyond their comfort zone to ensure they remain relevant in the competitive market.

Foreign trade with regards to Export and Import has witnessed a steady growth over the last five years. However, the share of imports has been far more than exports.

Export Import Trend (figures in US$ bn)



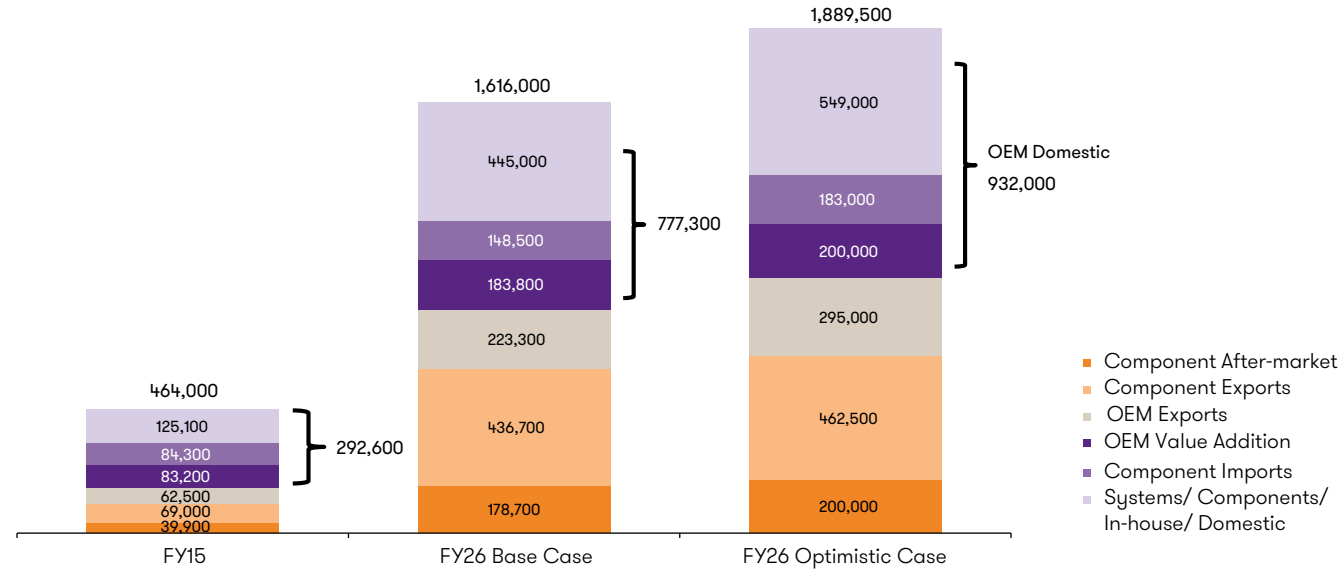
Source: ACMA, GT Analysis

The Automotive Mission Plan 2026 (AMP 2026), is a collective vision of the Government of India and Indian automotive industry defining growth path for Indian OEs and auto component manufacturers. The main objective is to be among the top three nations globally in engineering, manufacturing and exports of vehicles and components by focusing on five key areas:

1 Making Indian automotive industry as a driver for growth and steer the Make in India programme.
2 Generating employment and becoming a significant contributor to Skill India programme.
3 Enhance universal mobility by focusing on cleaner and smarter transportation mediums aimed at reducing pollution, congestions and global warming.
4 Increase exports of Indian vehicles and components by positioning India as a major export hub.
5 Act as an enabler for policy dispensation.

The AMP 2026 has set stringent targets for Indian automotive industry (including OEs and Component Manufacturers). It envisages that industry will grow 3.5 to 4 times in value from its current output i.e. from ~US$ 74 bn to US$ 260-300 bn (2015-26).

AMP 2026 Targets and Sector Glide Path



Source: ACMA, AMP 2026 Policy (Figures in INR Cr)

The Indian component industry, under the AMP 2026 policy, is set to reach a size of US$ 200 bn which is currently estimated at US$ 43.5 bn. The exports in 2015 were estimated at US$ 10.9 bn and is expected to reach US$ 70 to 80 bn i.e. roughly accounting for 40 per cent share in the total turnover. The AMP 2026 also aims at developing the industry competitiveness through:

1 Developing capabilities in Automotive Electronics and System Integration.
2 Collaboration with academia and other non-automotive stakeholders such as IP firms and software companies.
3 Development of testing and validation facilities as a source of revenues, both domestic and international.
4 Establishing and positioning India as a preferred manufacturing hub for auto components globally.

Exports will form a key component in achieving this target which currently is in deficit (imports greater than exports).

The industry will have to take significant measures and steps to convert from being an export deficit industry to an export surplus industry. Component manufacturers will need to focus on redefining their business models, product portfolio and offering in line with emerging demands from regions across the globe while continuously meeting global quality standards on product offerings at a competitive price.

Addressing challenges related to acquisition of technology (mechanical to electronics), investing in R&D, attracting and retaining talent and skillset within organisation, access to global markets and emphasis on changing brand perception of Indian auto component manufacturers and industry at large will be key to facing headwinds from industry disruption.

Disruptions in Auto Industry & their Impact on the Indian Auto Component Industry

The current generation of customers as we look around know vehicles that are driven by ICE. Vehicles powered by ICEs have been the technological solution that defined mobility and dominated the automotive industry though transport systems and platforms globally. Growing concerns over climate change and the urgent need to decarbonise the world economy, has led to the development of alternative powertrain technologies. Hybrid and fully electric powertrains are attracting considerable investments from OEs, and so do new mobility concepts and services at the interface of the transport and the energy system.

How industries adapt, which alternatives emerge, how rapidly they become competitive and eventually substitute the incumbent technologies, however, depend on country-specific factors, including policy frameworks, the existing industrial structure and specialisation, demand conditions, etc.

Auto component manufacturers will not be left untouched from such changes. The component manufacturers will be faced with opportunities and challenges to be relevant amidst this transition. Unlike the past disruptions in the automotive industry (which was mainly within the ICE space), the migration of ICE to Hybrid and Electric Powertrain and increasing vehicle connectivity and autonomous vehicles backed by digitisation pose significant headwinds for auto component manufacturers.

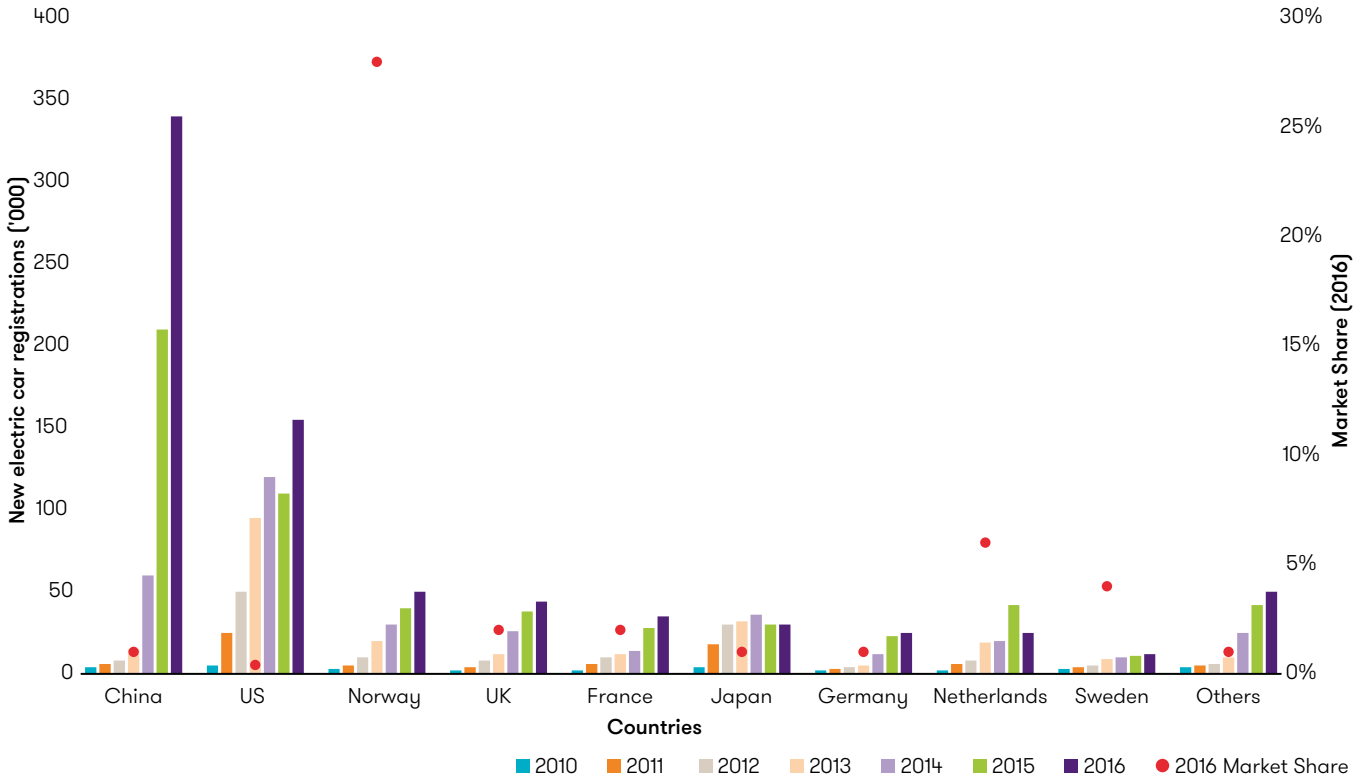
The future mobility powertrains will be mainly electric implying lesser component requirements unlike today's powertrains. What this means for auto component manufacturers, big or small, remains a key priority.

Powertrain Migration: ICE to Electric

Electric powertrain is poised to take over the conventional ICE powertrain in coming years. In 2016, over 750,000 new electric vehicles were sold globally.

China is the largest market for electric powertrain in 2016, with sales of over 336,000 electric vehicles, which is more than double than that of USA where sales in 2016 stood at ~160,000. European countries accounted for ~215,000 electric vehicles in sales dominated by Norway, UK, France, Germany, Netherlands and Sweden. Globally, 95 per cent of electric car sales are taking place in just ten countries: China, the United States, Japan, Canada and six leading European countries.

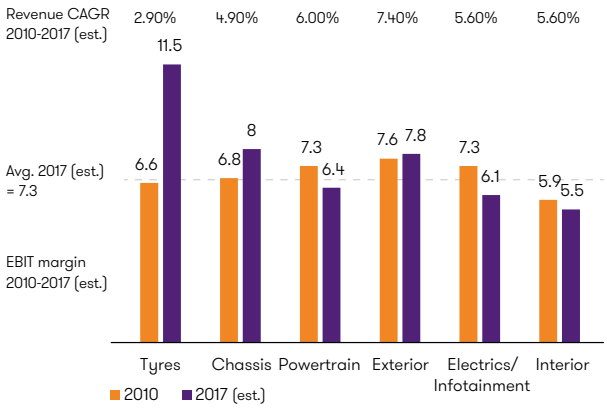
World's Top 10 EV markets



Source: ICE

The disruption across powertrain migration has had a significant impact on global auto component manufacturers.

EBIT Margins: Powertrain Manufacturers (Global)



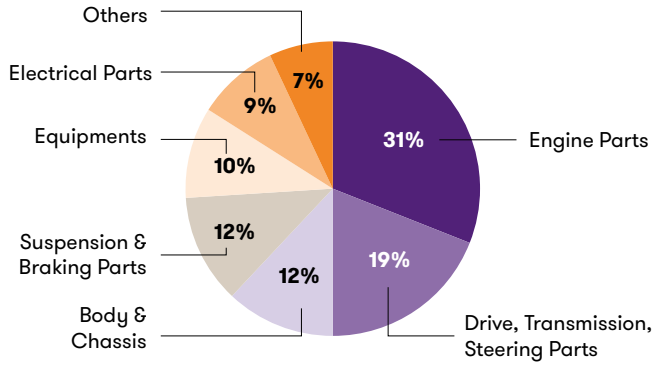
Source: Roland Berger

Manufacturers of Powertrains are facing increased pressure on their profitability witnessing a sharp decline in the EBIT margins from 2010-17 at 7.3 per cent to ~6.5 per cent on account of migration of powertrains (from ICE to Electric) along with increasing competition in this space.

India's EV market is at a nascent stage with ~0.4 mn units of two wheelers, <0,1 mn e-rickshaws and <5000 units of PVs in 2016. This segment has gained considerable importance and attention among OEs, global component manufacturers and the government.

The Indian auto component manufacturers comprise of over 700 component suppliers within the organised segment and over 10,000 players in the unorganised segment. The organised sector contributes to around 85 per cent of the total auto component industry turnover while the remaining 15 per cent is contributed by the unorganised sector.

Product Classification - Indian Auto Component Industry



Source: ACMA

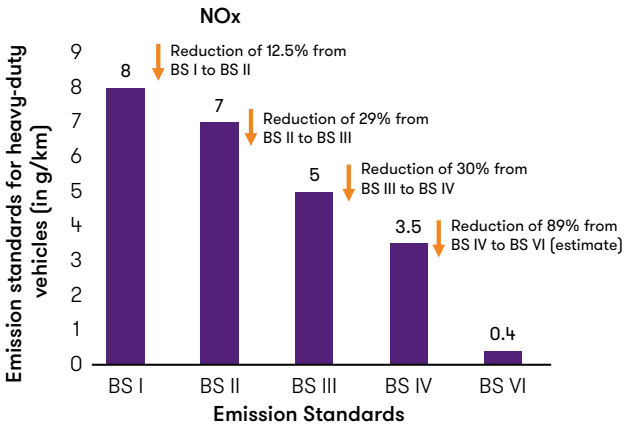
Engine components fall into three broad categories: core engine components, fuel delivery system and others. This segment accounts for 31 per cent of the auto component market (by value) and includes products such as pistons, piston rings, engine valves, carburettors, crank shafts, sump connecting rods, etc. These are the most critical components and require high level of precision and quality adherence. Accordingly, there is high level of coordination between component manufacturers and OEMs.

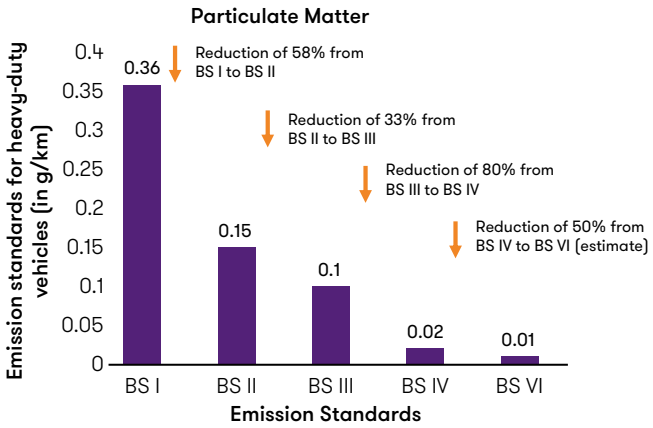
The drive transmission and steering component segment accounts for around 19 per cent of the auto component market. This segment consists of products like gears, wheels, steering systems, axles and clutches. Clutch discs, cover assemblies and kits components are the key sub-categories in clutch sub-segment.

The migration of ICE to EV powertrain means that OEs would no longer require engine parts and drive transmission components. Component suppliers will have to relook at their product offerings, R&D efforts for developing and supplying electric motors (PM and induction motors), inverters, converters, rectifiers, EMS (Powertrain Components).

The Indian OEs are struggling to achieve a smooth transition to BS VI emission norms (deadline being 2020) as this is dependent on policy environment. BS VI technology is an advanced one, it is not possible for the country to develop the same locally. So the base technology might come from Europe and it has to be made suitable for the domestic market through innovation. Unlike the local arms of the global automakers that have parent companies to fall back on, Indian companies will have to develop solutions with the help of global firms specialising in emission control technologies. Early introduction of technology would also require support from the oil companies for BS VI fuel availability. Thus, companies would have to develop requisite technologies and capabilities locally as against importing them because of much bigger scale.

Emissions Levels





Source: GT Analysis

Further, it is important to note that BS VI norms will address one of the inherent flaws in the European emission standards which permits diesel cars to emit more particulate matter and nitrogen oxide (NOx). In diesel cars, the jump to BS VI norms will result in reduction of nitrogen oxide emission by 68 per cent and particulate matter, which has a damaging effect on air quality and human health, by 82 per cent. Similarly, in heavy duty vehicles like trucks, the shift to BS VI norms would result in reduction of nitrogen oxide emissions by 87 per cent and particulate matter by 67 per cent.

FAME India: GoI introduced the Faster Adoption and Manufacturing of Hybrid and Electric Vehicle (FAME India) as a part of National Electric Mobility Mission Plan in 2015 aimed at offering incentives on EVs and hybrid vehicles of up to INR 29,000 for bikes and 1.38 lakh on cars. The scheme envisaged INR 795 cr to support the first two fiscals from 2015-17. This subsidy was discontinued for diesel mild hybrid vehicles in April 2017. This scheme would have helped in transition of powertrains to pure electric in a phased manner as OEs would have migrated to hybrid from ICEs and then to pure electric.

Absence of Hybrid Powertrains: The Indian government has taken a strong and selective stand on Hybrid powertrains by imposing a 43 per cent duty (28 per cent GST + 15 per cent Cess) as against 12 per cent on EVs. Globally, Hybrids have become the vital transition platform to EVs as a hybrid platform uses energy from electric batteries as well as conventional ICE. The government has mandated that by 2030, all vehicles in India should be 100 per cent electric. While this is an ideal scenario, the road to such transition will be difficult and have many casualties along the value chain, especially for Indian auto component manufacturers.

The discontinuation of FAME subsidy has put OEs and component manufacturers' resources on a freeze as the focus then was to develop Hybrid powertrains. The absence of such incentives now have put OEs and suppliers with a dead investment proposition.

Exploring Alternative Fuels: While the government has been pushing for 100 per cent EV roll out by 2030, there are several opinions on exploring alternative fuels that are sustainable, cost efficient to drive future mobility requirements including methanol based transportation systems. This contradicts the earlier notion of EV roll out creating confusion in the minds of OEs and component manufacturers.

Supporting OEs with electric powertrain components by 2030 will be a major challenge for Indian auto component manufacturers and the industry is bound to put a few players out of business. The ability to adapt and invest in R&D, and shortening the "time to market" will be key to survival.

Union Budget 2018-19

The Union Budget released on February 1, 2018 was received well by the Indian auto component industry. It was a budget focused on development of rural economy, manufacturing, infrastructure, education, ease of doing business, attracting investments and encouraging innovation and digitisation all, contributing to the growth of the vibrant Indian economy.

The increase of Custom duty will contribute towards increased localisation and promote local sourcing from OEs. This segment will emerge as an attractive segment, attracting significant investments and encouraging R&D and technology development. Engine, Powertrain, Gearbox and Transmission component account for over 50 per cent of US$ 43.5 bn domestic component industry's turnover and over 30 per cent of its US$ 11 bn exports. Duties on components such as engine and transmission parts, brakes, gear boxes, airbags, etc increased from 7.5 per cent to 15 per cent.

Mass formalisation of the MSME sector post-demonetisation and GST impact will benefit the auto component sector to a larger extent. Further, reduction in corporate tax to 25 per cent for MSMEs with turnover of up to INR 250 cr will facilitate the medium and small Indian auto component manufacturers as over 80 per cent of the supplier base fall within the MSME bracket. This measure, has also enhanced budgetary allocation of INR. 3,794 cr for credit support, capital and interest subsidy and will also have a liberal impact on the smaller enterprises. That apart, simplification of procedure for credit availability through online system for SMEs is a very welcome step.

The Union Budget 2018-19 has focused on increasing the farm income through various measures like productive and gainful on-farm and non-farm employment for farmers and landless families, fixation of Minimum Support Price (MSP), earmarking a fund for developing agricultural markets and creation of new 42 state-of-the-art mega food parks. The increased outlay will boost farmer's income, generate employment resulting into a push to the two-wheeler and entry level car segment.

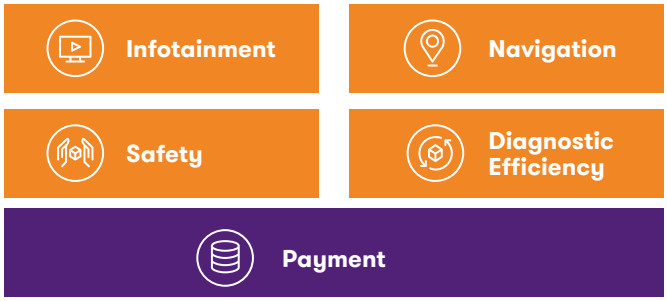
Increased outlay on infrastructure and roads will contribute to the demand for vehicles across commercial vehicles, construction equipment and passenger vehicles thereby giving a fillip to the demand for auto components.

However, given the government's vision on electric mobility, rationalising GST rates on EVs and EV batteries and components was expected in the Union Budget which somehow remained unaddressed. Moreover, allowance of weighted deduction on Research & Development to 200 per cent from the current 150 per cent could have given a boost to EV batteries and component makers.

Connected Cars

As the world dawns into a new era of digital and smart mobility, the smartphone and the vehicle will become more connected as ever. With the advancement of high speed cellular networks, the connected car Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) technology is becoming more sophisticated, from real time locations to in-car-infotainment, geo-fencing applications that gets tagged to digital services and integration of popular operating systems such as iOS and Android, the connected car will be a key differentiator for OEs.

Connected Car Landscape



Source: GT Analysis

The strategy for any OEs concerning connected cars will be largely based on big data (internal & external). The combination of market strategy and big data will not only optimise costs and business agility, but also create newer revenue streams across industry and stakeholders. OEs and Consumers (either or both) will be benefited via predictive information on maintenance, vehicle performance dashboards, supply chain efficiencies, dealer satisfaction, mobility services including dynamic navigation and parking space ready identification and roadway connectivity, etc.

Component base mix: Shift from Mechanical to Electronics

The connected cars will have a significant impact on component suppliers. Components such as Electronics and Electrical Components will witness greater applications across platform offerings, driven by increased dependence on electronics to enhance mechanical system performance such as powertrain control modules and advanced electronic control units, all contributing to emission control and efficiency enhancement of the vehicle.

Example: Carburettor, could be a connected component as the cars become smarter by way of OBD (on-board diagnostics) system which can be accessed via a smartphone app for diagnosis. Such connectivity means carmakers can not only notify drivers the second a part fails, they can also in theory guide them to the nearest dealer with the part in stock, and predict the likely waiting time for that part and/or send it via an online order.

The implications for auto component suppliers will be addressing complexities on how suppliers add software and integration elements to their offerings that will identify their products when problem diagnoses occur, otherwise they may be left out of diagnostics reports. If independent after-market suppliers choose not to make a connected product and ones that satisfy Automotive OEM's specifications, they might still be able to manufacture a superior part to the original, but that part may not register on newer diagnostics boards.

Braking, suspension, and steering will remain largely commoditised offering. As connected cars and ride-sharing adoption increase, passengers would not opt for on-road performance information. Regenerative braking in electric vehicles reduces wear and tear and may drive down demand for replacement brake parts considerably.

Standard plastic body components would witness a significant decline in the demand by OEs and they will be replaced with more of glass for greater visibility.

Body glass could become more important in the future if the need for metal and plastic structural components declines and future designs feature more glass for greater visibility. We may see designers integrate more and more displays into the glass, enhancing the rider experience.

As the vehicle platforms move towards increasing connectivity and electrification of powertrains and components, the markets will tend to witness commoditisation of select components and segments which will be priced competitively as there will be a volume play in body parts, battery cases, electronic panels, accessories, etc. dominated by a large number of smaller suppliers catering to Tier 1 suppliers who will be assembling in large volumes for OEs. It will be critical for such suppliers to consolidate supply chain so ensure margin effectiveness.

Some auto component manufacturers will take up niche positions in the markets focusing on design and development of high value components. It will be critical for component manufacturers to incorporate sensors across component offerings that will help them gather data on part performance and application environment. This will help them in R&D and gain competitive advantage.

Software to take precedence

The cockpit will be a battle ground place for every component supplier; this is a medium for driver and passenger integration and experience.

There will be a significant increase in demand by drivers and passengers in the form of advanced audio, video, telematics, infotainment, telematics, and e-commerce related features in their cars. This will require additional electronic content and connected service integration, backed by powerful in-car computing hardware and software and touch and heads-up units.

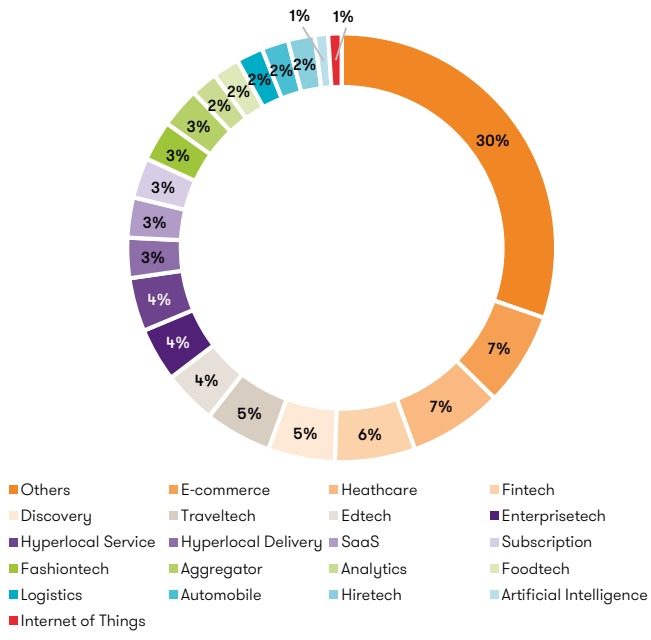
Component suppliers will need to develop capabilities for development and integration of software in components that are customisable as per OEs requirement (digital and physical). Component manufacturers will face heat from players outside the industry as historically, component manufacturers have focused on innovation and design on 'mechanical' side of business offering. Investment in R&D and testing will be key to first-mover advantage. The development of software, its testing and integration with hardware will become the backbone for connected car components going forward.

Component supplier will need to explore strategies to enhance product development cycles and address gaps related to talent and skills at the same time.

India's connected car landscape is at a nascent stage. While India is still in the transformation stage from BS IV to BS VI. There aren't many tech-companies building solutions around the connected vehicle industry in India. The 2015 start-up bubble is a proof that most companies that raised billions in funding were mostly e-commerce service based companies. Automotive as a sector was not the flavour. In 2017, however a few companies have started to pivot themselves in this direction.

It is ironical that most of the companies that are investing in building solutions for global automotive multinationals are based out of India, as most of the R&D is done in India. However, India remains low in connected vehicle technologies due to challenges across infrastructure required for V2V and V2I technology roll out, consumer acceptance and awareness levels, maturity level of auto component manufacturers (dominated by tier 2) and regulatory policy.

2015-16: Start-up Funding Landscape



Source: Secondary Sources, Press Articles & GT Analysis

Indian auto component industry is highly fragmented dominated by unorganised sector (over 10,000 companies accounting for 15 per cent of industry revenues). These companies will face stiff challenges to upgrade their product offerings due to changing application of components. It will be critical for component manufacturers in India to focus on R&D and build capabilities across software and hardware integration. Traditional Tier 1 Indian manufacturers will not be left out of this too as they lack scale, skills and global OE relationships as compared to global multinationals.

Grant Thornton conducted discussions with select automotive professionals in the Indian auto industry to take their point of view on Connected Cars. The key insight gathered indicated that India is far below western countries for roll out of connected car features (V2V, V2I), although select features are currently available in few high end Indian luxury car platform, that only a small section of the available customer base has access to.

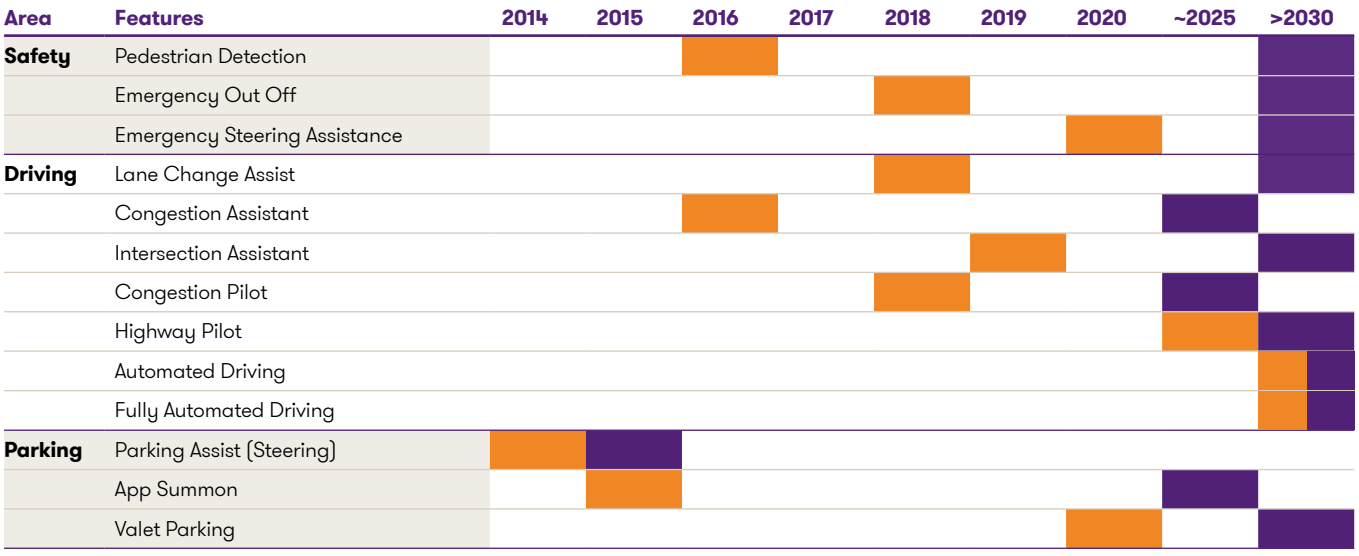
The key reasons are attributed to the following:

OEM's side: Challenge in developing adaptive machine learning algorithms based on existing driving and road conditions due to:

- Erratic and dangerous driving habits of drivers on roads
- Broken traffic lights
- Driving conditions: Integrating V2V and V2I technology into existing road and traffic condition with roads varying from well-made black top to dirt tracks, abandoned signages, broken road and traffic lights and animals and pedestrians venturing into busy roads

Fact: "India ranks 60th among 79 developing economies in The World Economic Forum's Inclusive Development Index as of 2017. Connected Car deployment would need to have a well-developed and an 'integrated' infrastructure (physical and digital). India accounts for highest number of road deaths in the world* with more than 1.46 lac fatalities annually. This accounts for 10 per cent of global road accidents.

Connected Car Roll Out Landscape: Global vs India (V2V & V2I)



Source: GT Insights

We asked the business executives on their point of view about connected V2V and V2I feature roll out runway. Some of the features such as Pedestrian Detection, Lane Changing Assistance, and Parking Assist are currently being offered by select luxury segment platforms such as BMW and Tesla, among others, in western countries. In India, select features such as Assisted Parking are currently available in select luxury cars, but not in mass segment.

Most of the offering in coming 3-5 years will have connected features inside the car cabin including advanced audio, video, telematics, infotainment and payments as this segment has latent consumer aspiration both within luxury and mass brands offered. OEs will be selective in sourcing such components. However, it will be the premium segment that will take the first-mover advantage as customers of luxury segment will be more willing to pay premium on new features as compared to masses. Also, the roll out of such features across platforms in mass segments will take time.

Challenges & Considerations for Indian Auto Component Manufacturers

The Indian auto industry is poised to become the 4th largest automobile market globally overtaking UK and Germany. Stringent environment regulations and compliance with environment sustainability agenda have forced the government and stakeholders to go beyond the conventional ICE platforms and offer electric powertrains by 2030, putting pressure on OEMs to develop Electric Powertrains for future roll out.

As the technology evolves, demand for connected features is also bound to increase as this will be key to OEs platform differentiation. Component manufacturers will be forced to explore technology and capability development across digital and hardware integration to remain relevant.

Key challenges and imperatives for component suppliers include:

Area	Description	Impact on Suppliers
Time to Market – (powertrain migration & connected features)	• OEs will be pressured to launch EVs by 2030 in line with government's policy • OEs will be forced to look at modularisation of features, develop alternative powertrains, introduce ADAS and connected features that will be critical for OEs platform differentiation • OEs to make selective calls on vendor tie ups depending on pricing, supplying capacity, quality, technology and supply chain alignment with OEs	• Manufacturers of powertrains & transmission will be under pressure as they will be forced to invest in R&D, develop technical capability as well as reduce time to market; the ability to invest in powertrains will be largely governed by the level of alignment and scale of operations that supplier will have with OEs (both in India and globally) • Suppliers will also be forced to look at acquiring software development and integration capabilities • Medium and smaller level suppliers will be finding themselves amidst cash crunch in R&D • Absence of hybrid powertrain will further squeeze breathing space for component suppliers • Increased competition from technology and consumer product companies to match quality and price
Pricing and Viability	• Indian customer is price conscious. It will be challenging for OEs to sell EVs considering infrastructure inadequateness (charging infrastructure) and developing a viable business case for customer w.r.t total cost of ownership for EVs • Connected features will be available in luxury platforms. OEs offering mass market platforms will face pressure to introduce connected features	• Margins for powertrain and transmission manufacturers will be under severe pressure • Component suppliers will need to find innovative ways to differentiate offerings w.r.t connected components by way of software integration to command price premium • Increased competition from technology and consumer product companies to match quality and price

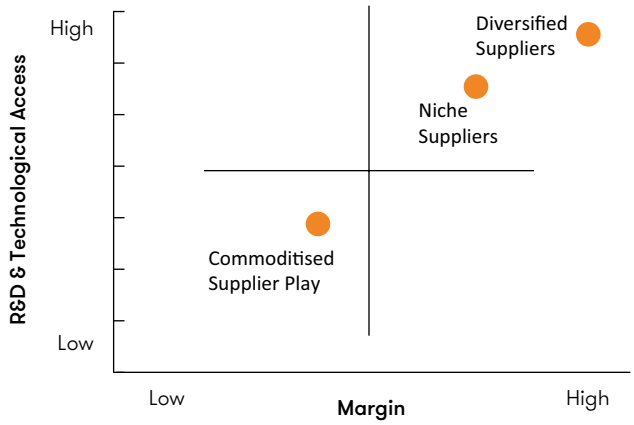
The survival of the Indian auto component manufacturers will be largely dependent on how soon and effectively are they able to adapt and transform their business models in line with the industry disruption.

Suppliers of Auto component will have to reimagine their business models and assess where they are and where they want to play in line with their competencies and their appetite to endure disruption.

The industry will give several opportunities for component manufacturers, defining where to play and how to play will be dependent on the component manufacturers in line with their long term strategy and ability to respond to changes.

The level of R&D requirement and profitability/margin will be key parameters that will determine strategic playground for component manufacturers.

Strategic Play: Component Suppliers



Source: GT Analysis

Commoditised market play

Suppliers willing to operate in this segment will have to build their business on the basis of scale, pricing, level of alignment with OE demand as well as quality. Suppliers operating in this segment will have to focus on multiple geographies, customer contracts and expansion of global footprint via alliances, exclusive contracting, and M&A. The prospect of M&A will be largely dependent on the appetite to invest and ability to take risks, as the products will be fairly standard and commoditised and such players will operate on lean margins.

Niche market play

Suppliers willing to operate under this segment will have to take a calculated call on deciding their niche with regards to products and customer and regions as this segment will be largely dependent on R&D and technology integration. It will be critical for suppliers to develop software capabilities with acquisition of technologies through M&A. This segment will also be the most competitive as traditional component suppliers will face stiff competition from new entrants including software & technology and consumer product companies.

Diversification

As the market evolves, suppliers will have to constantly evaluate diversification options within the automotive industry as the industry transitions from pure mechanical to data and software driven market. They will be forced to look at options such as charging stations, fleet management, and after-market servicing businesses that will be built around differentiated offerings and requirements. This will be a good reinvention point for suppliers facing declining volumes and margins on account of inability to face and endure challenges.

Conclusion

The global automotive industry is at a crossroad. The shift to cleaner and greener transportation mediums in the form of roll out of Battery Electric Vehicles (BEVs) coupled with connected features and vehicles and the integration autonomous features across safety, driving and parking are all indicators of what the future holds for the industry.

The world economy is projected to grow at 3.1per cent in 2018. India and China are the only two economies that are projected to surpass the world's growth rate which is pegged at 7.4 per cent and 6.2 per cent in 2018, respectively. OEs globally are focusing their efforts and investment from mature economies to vibrant and emerging economies. The industry will witness a significant shift in the demand for components too. Tightening of regulatory environment, intensifying safety standards and greater adoption of technology, has triggered key disruptions in the form of electrification, autonomous driving, and connected cars. The migration of powertrains from traditional ICE platform to electric and connected feature evolution in the form of V2V and V2I connectivity means significant opportunities and challenges for OEs and component manufacturers.

Component manufacturers will be forced to build capabilities beyond traditional Mechanical field. M&A within the automotive component manufacturers will be largely governed by an intent to access expertise and technology across three broad areas:

1 Migration from traditional platforms to self-driving & electric platforms
2 Driver and vehicle interface technology and
3 Electronics technology

The Indian auto component industry will not be left untouched from this disruption too.

The sector is largely unorganised comprising over 10,000 players operating in the unorganised segment primarily catering to replacement/after-market segment contributing to ~15 per cent of total industry revenues. The organised sector accounts for 85 per cent of the industry revenues.

The AMP 2026 has set stringent targets for Indian automotive industry (including OEs and Component Manufacturers). It envisages that the industry will grow 3.5 to 4 times in value from its current output i.e. from ~US$ 74 bn to US$ 260-300 bn (between 2015 and 2026).

Exports will form a key component in achieving this target which currently is in deficit (imports greater than exports). The industry will have to take significant measures and steps to convert from being an export deficit industry to an export surplus one.

High dependence on imports will be an opportunity and threat for component manufacturers in India; while OEs will look at forming long-term supply contracts with suppliers overseas, local manufacturers would need to move up the value chain, focusing on cost and quality competitiveness. Localisation of components will be critical too especially across luxury platforms that are mostly undertaking assembly route. Indian auto component manufacturers would need to focus on developing capabilities towards modularisation.

The industry faces headwinds on account of shift of powertrain from ICE to Electric and integration of connected features in vehicle platform due to changing customer needs and requirements.

Engine components and drive transmission account for 50 per cent of the industry's portfolio. The migration of ICE to EV powertrain means that OEs would no longer require/have reduced demand for engine parts and drive transmission components. Component suppliers will have to relook at their product offerings, R&D efforts for developing and supplying electric motors (PM and induction motors), inverters, converters, rectifiers, and EMS (powertrain components).

Absence of Hybrid powertrains in the Indian context due to government decision to stop subsidy under FAME India has added extra burden on OEs and component manufacturers.

A clear roadmap and clarity on policy and implementation by the Government will be beneficial for industry stakeholders to meet requirements and prioritising resources and efforts towards R&D and Technology development for EV & Alternative fuels based transportation.

Component manufacturers will also be faced with challenges to develop capabilities for development and integration of software in components that are customisable as per OEs requirement (digital and physical). Component supplier will need to explore strategies to enhance product development cycles and address gaps related to talent and skills at the same time.

Most of the offering in coming 3-5 years will have connected features inside the car cabin including advanced audio, video, telematics, infotainment and payments as this segment has latent consumer aspiration both within luxury and mass brands offered. However, it will be the premium segment that will take the first-mover advantage as customers of luxury segment will be more willing to pay premium on new features as compared to masses. Also, the roll out of such features across platforms in mass segments will take time.

The survivability of the Indian Auto Component manufacturers will be largely dependent on how soon and effectively they are able to adapt and transform their business models in line with the industry disruption.

Suppliers of auto component will have to rejig their business models and assess where they are and where they want to play in line with their competencies and appetite to endure disruption.

As the industry matures, the component suppliers are expected to take their respective industry positions that defines their strategic turf. Few component manufacturers will be expected to play in a commoditised market segment that are driven by volumes and margin. Players under such segment will be seen to operate under multiple geographies, have multiple customer contracts and expansion of global footprint via alliances, exclusive contracting, and M&A.

Few players will choose to operate in a niche segment that will be driven by R&D and innovation across product, customers and regions. It will be critical for suppliers to develop software capabilities with acquisition of technologies through M&A. Players will also face competition from software and consumer companies.

Some players will completely diversify into new markets and product offerings such as charging stations, fleet management, and after-market servicing businesses.

The disruption from electric and vehicle connectivity is a single biggest disruption after the invention of mobile phone and internet. While industry disruption poses challenges, it creates newer opportunities for players.

Irrespective of the position that players take, the Industry would need to focus on three critical areas to be future-ready:

1 Focus on R&D and Technology through M&As, JVs, and technical collaborations, both within component industry as well as software developers.
2 Focus on addressing skill gap development through increased industry and academia interaction as well as investment in training and certifications.
3 Embrace globalisation by creating an in-house company culture of being truly global.

There has been no better time for innovation in the history of automotive industry.

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