

Need to Recast the AMP 2026 in Light of Disruptive Trends that will Transform the Auto Industry

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[Abstract: The curtain has been raised from the Automotive Mission Plan 2016–2026 (AMP 2026), which shall be implemented as soon as AMP 2016 comes to an end this year. AMP 2026, unveiled in September 2015, does not take into account the impact of disruptive technology trends that will transform the auto industry, thereby impacting the incumbent players and the projections. The objectives and goals projected in the present AMP draft will undergo a sea change owing to the impact of these trends. This paper advocates a hard relook at the AMP 2026, recognizing the trends in technology developments globally on the horizon.]

The Automotive Mission Plan (AMP) was placed in position in 2006 to map the aspirations of the auto and auto component industry and to promote India as a preferred global manufacturing destination. It includes intervention and prescription mechanisms for promoting the industry. As of 2016, the automotive sector is a \$74 billion industry, and is expected to achieve a turnover of \$300 billion—clocking a CAGR of 15 per cent. The AMP 2006–16 broadly focused on five aspects: economic growth, passenger comfort, sustainability, quality, and cost competitiveness.¹

The notable achievements of AMP 2016 are:

1. The automotive industry has achieved the target of incremental employment creation of 25 million jobs over the past decade.
2. India has attracted a significant investment of Rs 1,57,000 crores in this sector.
3. The cumulative domestic sales volume targets of commercial vehicles, passenger vehicles and tractors have been achieved. However, components as well as two and three wheelers have fallen short of their targets. By the end of FY16, automobiles will have exceeded the target of

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¹ Jain, A. (2015), 'Indian Automotive Industry: The Road Ahead,' *Forbes*, October 20. Available at: <http://forbesindia.com/blog/business-strategy/indian-automotive-industry-the-road-ahead/>

Rs 5,49,000 crores in exports while the auto component segment will witness a shortfall of Rs 1,20,000 crores. Weighed against the economic slowdown in global economy post 2008, the achievement of the sector is satisfactory.

4. India has emerged as a global hub of small cars.

As of FY15, around 31 per cent of the small cars sold world-wide are manufactured in India. India has also emerged as a world leader in the manufacture of (i) diesel and petrol engines of small capacity, (ii) two wheelers and three wheelers, (iii) low-powered tractors, (iv) engine and transmission related components, especially those requiring complex machining, grinding, forging, etc., and possibly assembly operation, and (v) components requiring relatively low-complexity manufacturing.²

In September 2015, the Government unveiled the Automotive Mission Plan 2016–26 (AMP 2026). The key highlights³ of the AMP 2026 are.

1. Indian automotive industry to grow 3.5 to 4 times of the current value of \$74 billion to \$ 260 billion to \$300 billion.
2. By 2026, passenger vehicles are likely to increase between 9.4–13.4 million units, commercial vehicles between 2.0–3.9 million units, two wheelers to grow to 50.6–55.5 million, and tractors to 1.5–1.7 million.
3. India to be among the top three automotive industries in the world.
4. Contribute over 12 per cent to India's GDP.
5. Generate 65 million more jobs.
6. Indian Automotive industry to emerge as the engine of Make in India initiative.
7. Exports will increase manifold to reach 35–40 per cent of overall output.

² Auto Tech Review (2015), 'The Automotive Mission Plan: 2016–26 (A Curtain Raiser),' October. Available at: autotechreview.com/latest-issue/item/download/575.html

³ ET Auto (2015), 'Automotive Mission Plan 2016-2026 Unveiled: Here are the Key Highlights,' from *The Economic Times*, September 12. Available at: <http://auto.economictimes.indiatimes.com/news/industry/automotive-mission-plan-2016-26-unveiled-here-are-the-key-highlights/48772090>

8. There will be an End of Life Policy for vehicles and components.
9. BS V norms will be adopted by 2019 and BS VI norms to be implemented by 2023 for passenger vehicles.
10. Components will grow from Rs 5,93,500 crores to Rs 7,32,000 crores.

The AMP 2026 expects that the government will adopt a trade policy conducive to the sector, with a duty structure designed to incentivise domestic production of items such as electronic components and systems, high-end plastics, moulds and dyes which continue to be imported. In the same vein, it is expected that the duty structure will disincentivise the import of completely built units (CBUs) and used vehicles. Similarly, free trade agreements (FTAs) with countries whose automotive industries are similar to or less developed than those in India will be encouraged. However, in case of advanced industries, automotive components and systems will be kept away from the ambit of FTAs.

According to AMP 2026, the impact of domestic taxation on the sector will soften with the implementation of GST.

While it is expected that the weighted tax deduction incentives for Research and Development will be maintained, a technology acquisition fund may also be established to acquire cutting edge technologies through technology transfers, joint ventures, acquisitions and buyouts.

AMP 2026 recognizes that the sector has a vast potential for emulating as well as facilitating the development of sophisticated labour force skills. It expects to meet the challenge through a sector-specific skill development council which will identify skill requirements and grant certification.

The AMP 2026 seeks to establish automotive-specific infrastructure to facilitate the movement of raw materials, components, assemblies and also finished vehicles, both within the country and across sea-ports. This will require dedicated berthing and parking facilities at the ports, flexi deck auto-wagons, weighbridges network, electronic toll collection system, etc. Besides, transport nagars, the

railways, roads and ports will have to be revamped with state-of-the-art facilities. For switching over to electric and hybrid vehicles, there will have to be a network of charging outlets in urban as well as rural areas⁴.

The structure of AMP 2026 is an incremental shift from that of AMP 2016. The two plans are rooted in the concept that for more than 100 years the automotive industry has created competitive advantage mainly through engineering excellence. However, going forward, it will no longer be sufficient.⁵ The automotive industry is poised to be engulfed by disruptive technology. The electric vehicle is one such example. The Tesla model has been setting speed records for cross-country road trips and is a reliable drive. However, its popularity is proving to be disruptive for conventional models.

The next generation vehicle will be one step ahead of the electric vehicle—one that will not require manual driving. Such autonomous vehicle technology is on its way with a promise. Companies like Google have carried out driving tests, navigated obstacles and corners. There is a promise that one may cross distances while engaging in other jobs, free from the hassles of driving. The technology is obviously disruptive.

Self-parking technology wherein the car parks entirely on its own while the driver stands outside of the car has also been tested. Another disruptive technology which has been tested is that a driver will not be able to drive the vehicle if his/her alcohol level is above permissible limit.⁶

Strategies for technology development will have to be replanned otherwise India will relegate further down in the technology race. With the onset of disruptive technologies in the automotive sector, value pools will get rearranged. A 2013 McKinsey Global Institute study identified the technology of autonomous or near-

⁴ *Op cit.* 2

⁵ IBM (2015), 'Digital Disruption and the Future of Automotive Industry: Mapping New Routes for Customer-centric Connected Journeys,' IBM Centre for Applied Insights.

⁶ 'Disruptive Tech: Latest Automotive Technology Trends,' *compare.com*, July 01, 2015. Available at: <http://www.compare.com/auto-insurance/guides/most-disruptive-technologies>

autonomous vehicles as one of the advanced disruptive technologies on the horizon and estimated that the potential economic impact in 2025 across sized applications of \$0.2 trillion to \$1.9 trillion could save 30,000 to 1,50,000 lives from potentially fatal traffic accidents.⁷ In a globally connected economy, the fall out of technology development of this magnitude is bound to be there on the Indian automotive sector, which is being missed out in AMP 2026. It is happening despite the fact that industry players represented by Automotive Manufactures Association of India (ACMA), the Society of Indian Automobile Manufacturers (SIAM) and the government have discussed the impact of disruptive technologies and changes in regulatory environment on business models of the vehicle industry and the auto component manufacturers at the national conference on *Driving Affordable and Accessible Technology Innovations* held in July 2015. Both the industry and the government have understood that the growing importance of electronics and connectivity in cars and developing less expensive electronics architecture will expedite the demand for electronics and sophisticated functionalities. It is recognized that the Indian software firms will have to play a vital role in forming effective partnership with industry stakeholders to create cost-effective electronic solutions and connected vehicles. In keeping with the global trend, the auto industry is converging with other industries to develop connected and safer vehicles to enhance in-vehicle experience.⁸ Despite such recognition, the AMP 2026 does not stress that OEMs and auto component players in India should engineer low-cost solutions without compromising on quality to make technologies affordable and accessible in the upcoming tech areas based on module and internet technology which are transforming the passenger vehicle from a mere mode of transportation to a virtual office, entertainment centre and a safety cocoon. Many of the disruptive technologies in the automobile industry do not come from traditional players, but

⁷ Manyika, J. *et al.* (2013), 'Disruptive Technologies: Advance that will Transform Life, Business, and the Global Economy,' Report – McKinsey Global Institute, McKinsey & Company. Available at: <http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/disruptive-technologies>

⁸ National conference on *Driving Affordable and Accessible Technology Innovations*, jointly organised by Automotive Component Manufacturers Association of India (ACMA) Society of Indian Automobile Manufacturers (SIAM), on July 28, 2015. Available at: <https://home.kpmg.com/in/en/home/media/press-releases/2015/07/national-conference.html>

from new start-ups as well as from internet and big data-driven companies that will completely change the process of buying, owning, driving, maintaining or resale of vehicles.⁹

With the advances expected to be made in respect of electronic cars, it can be anticipated that within five years from now electric cars with a range of 500 miles and enough super charging stations for all combinations of travel and exploration will be introduced in advanced countries. This development will impact OEM suppliers, dealers and service networks of the automobile industry. Electric vehicles will have fewer parts than gasoline vehicles. For example, they do not need pistons, blocks, seals, fuel injectors, spark plugs, transmission oil, radiators, and fuel tanks. This will have consequences on the ancillary industries in a big way and cause major disruption. Besides, electric vehicles will not require much servicing or maintenance, thereby impacting service networks. There will also be some impact on manufacturing jobs, service jobs, and assembly line jobs. Electric car assembly lines are usually automated. Thus, the disruption will run deep; this trend will not remain confined to developed economies. The effects will be equally drastic for economies like India and China which are rapidly expanding their green technology and automation in manufacturing. These countries may leapfrog into electric cars (there are already electric vehicles on road and government providing incentives for the expansion of supply base and supplies) as they did in the telecom sector by bypassing landline route and going to mobile telephony. With the widening of the base, the costs of manufacturing cars and batteries will also come down globally. Overall, the impact on manufacturing jobs worldwide will be negative.

With the advancement in electric cars (to be followed by automotive cars), brands like GM, Ford, Chrysler, MB, and BMW will become unsustainable as there will hardly be any difference among them. Virtual manufacturers like Google, Tesla, Apple, etc., will challenge the existence of the existing elite brands.

⁹ Gajanan Gandhe (2015), 'Disruptive Innovation,' Auto Tech Review, December 16. Available at: <http://autotechreview.com/news/item/2954-disruptive-innovation.html>

Overall, the advent and growth of electric vehicles will be a boon to the consumers, the economy and the planet (more enhanced if charging is done using solar energy). However, consequent shocks will have to be addressed.¹⁰

Apart from the electric car and its impacts on the horizon, there are impacts on account of emergence of the phenomenon of shared mobility, e.g., car sharing, e-hailing and connectivity services promoted through apps, remote services, software upgrades which, according to an estimate, have the potential to expand automotive revenue pools by about 30 per cent (equivalent to \$1.5 trillion) in the period 2015–30. This will translate into total revenue of 5.2 trillion up from 3.5 trillion in 2015. According to the same estimate, despite a shift towards shared mobility, vehicle unit sales will continue to grow but at a lower rate of about 2 per cent per year from the current rate of increase of 3.6 per cent. The decline in sales is to the extent of net drop in sales on account of enhanced wear & tear of shared vehicles. As a result of the changing consumer mobility behaviour, one out of ten cars sold in 2030 will be a shared vehicle, signifying that in dense urban environments the use of private cars will decline from 76 per cent in 2000 to 71 per cent in 2013. On these projections, one out of three new cars sold could be a shared vehicle as early as 2050. Number of shared vehicles in congested cities like London and New York will perceptively be on the decline.

In the context of medium-term reality, the advance driver assistance system (ADAS) is set to play a crucial role by 2030—preparing regulators, consumers, and corporations for the reality of cars taking over control from drivers. Once regulatory issues come to light, including consumer acceptance, autonomous vehicles will offer the facility of working while commuting, or convenience of using social media while travelling. The scenario is that by 2030, 15 per cent of the passenger vehicles sold worldwide may be fully autonomous.

¹⁰ Hingorani, P. (2015), 'The Coming Disruption of the Auto Industry,' Pulse, September 24. Available at: <https://www.linkedin.com/pulse/coming-disruption-auto-industry-prakash-hingorani>

The share of electric vehicles could range from 10 per cent to 50 per cent of the new vehicle sales in 2030. Adoption rates will be highest in developed, dense cities with strict emission regulation and consumer incentives. With declining battery costs, the electric vehicles will achieve cost competitiveness by 2030.

Thus, the incumbent players will be forced to compete simultaneously on multiple fronts and co-operate with competitors. Mobility providers, tech giants (such as Apple, Google) and specialty OEMs (Tesla, for instance) will increase the competitiveness of the landscape. Traditional automotive players that are under continuous pressure to reduce emissions and become more capital efficient will feel the squeeze, thereby leading to shifting market positions in the evolving automotive and mobility industries, and further to consolidation or new forms of partnerships among incumbent players. Besides, automakers will be required to share, seek and collaborate with infotainment and software industries in a big way.

Incumbents in the automotive industry cannot predict the future with certainty. Nevertheless, through strategic policies and moves, they can shape the industry's evolution. Possible approaches could include identifying new business models by anticipating new market trends and exploring complimentary alternatives to traditional business models. It will be required to leverage new partnerships and alliances around infrastructure for autonomous electrified vehicles. OEM's will be required to align their skills and processes to address new challenges like software-enabled consumer value definition. Besides traditional car sales and maintenance, the incumbent players will be required to integrate their business model to include mobility services and online sales.¹¹

From the forgoing analysis it is clear that AMP 2026 needs to be given a hard look before it is finally adopted by the end of 2016. In its present form, it exhibits lack of appreciation of disruptive trends in the industry which are already taking place.

¹¹ Gao, P. *et al.* (2016), 'Disruptive Trends that Will Transform the Auto Industry,' Report, McKinsey & Company, January. Available at: <http://www.mckinsey.com/industries/high-tech/our-insights/disruptive-trends-that-will-transform-the-auto-industry>