Indian automotive sector: Creating future-ready organisations

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Automotive industry of the future: The changing paradigm

Automotive industry in India

The Indian automotive industry is seeing significant transformation with respect to its sustainable growth and profitability. The industry is crucial for the economy as it accounts for 7.1% of the country's Gross Domestic Product (GDP) and as per Automotive Mission Plan (AMP) 2016–26, its contribution is projected to increase to 12%[1]. India is expected to emerge as the world's third-largest passenger vehicle market by 2021[2].

The fundamentals for growth drivers in the automotive industry remain intact and the sector is likely to see an increased upward trend in demand in the coming years as the economic environment improves and investments increase. The Government's 'Make in India' initiative has played an important role in elevating the country's position and it has improved on nine out of ten parameters for ease of doing business in the last three to four years. Today, India is looked upon as a favourable destination for low-cost manufacturing. The World Economic Forum has ranked it 30th on the Global Manufacturing Index[3], which assesses the manufacturing capabilities of countries. The industry attracted Foreign Direct Investment (FDI) worth US$20.85 billion during the period April 2000 to December 2018, according to data released by the Government's Department of Industrial Policy and Promotion (DIPP)[1]. In this scenario, India's automotive industry (including component manufacturing) is expected to reach US$51.4–282.8 billion by 2026.

There are a number of key trends that are shaping the industry today, which are expected to have a significant bearing on its ability to realise the objectives of the AMP. In addition to automation of various processes to meet these goals, the sector is also expected to generate additional direct and indirect jobs.

Changing paradigm in the industry

Currently, India's automotive industry is at an inflexion point and is witnessing five megatrends that are expected to transform the industry in a big way[4]. Rapidly evolving customer needs, the disruptive impact of technology, the dynamic regulatory environment, changing mobility patterns and global interconnectedness are all impacting the way auto companies are doing business today globally and in India. The industry has never witnessed this magnitude of multi-dimensional change till now.

Five megatrends impacting the Indian automotive industry

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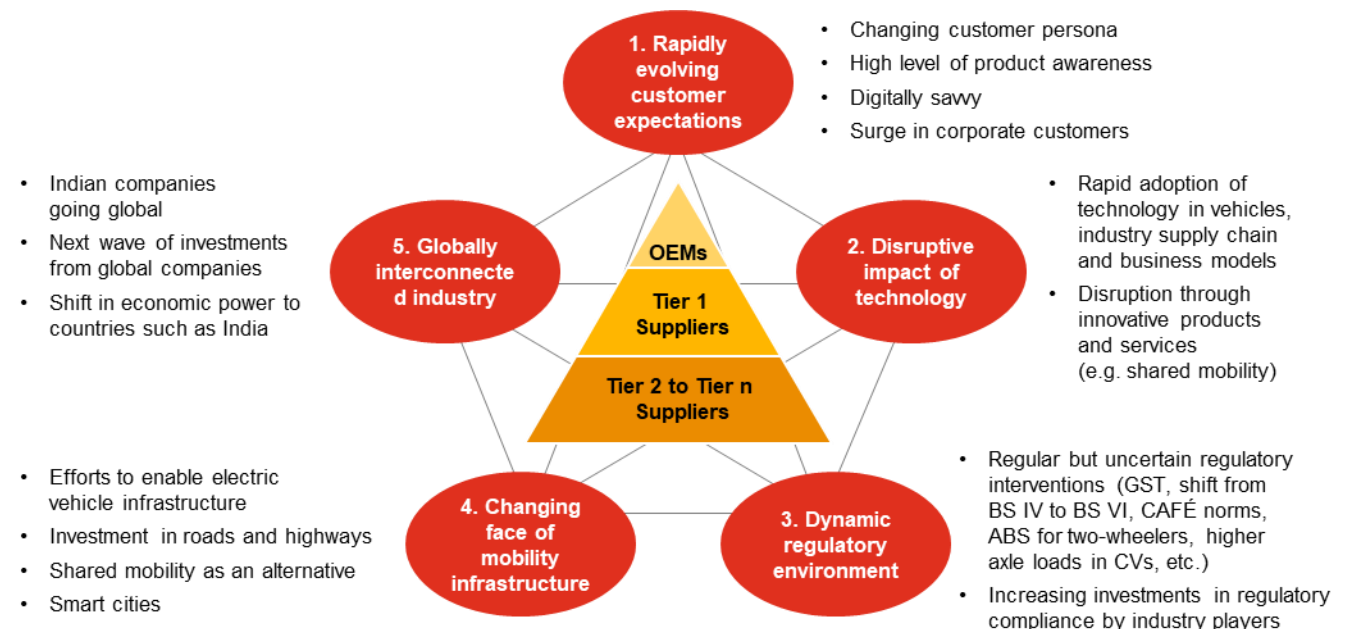
[1] Automotive Mission Plan: 2016-26 (A Curtain Raiser) (2015) http://www.siamindia.com/uploads/filemanager/47AUTOMOTIV EMISSIONPLAN.pdf (last accessed on 20 April' 2019)

[2] IHS Auto Database, Light Vehicle Sales Forecast, ihsmarkit.com (last accessed on 20 April' 2019)

[3] The Global Competitiveness Report 2018 https://www.weforum.org/reports/the-global-competitveness-report-2018 (last accessed on 20 April' 2019)

[4] https://www.livemint.com/Companies/FpQ6YCFflJHYPGiX6in4AN/ What-are-CAFE-norms-and-why-do-they-matter-in-the-ToyotaSuz.html (last accessed on 20 April' 2019)

1. **Rapidly evolving customer expectations:** In view of the increasing disparity and gap between middle class population growth versus middle class average income growth[5], customers' purchase patterns are bifurcating between luxury and economical vehicles. And with disparate and varying spend capacity, high levels of awareness of products, rapidly evolving expectations and the demand for personalised products and services, customers are taking the centre stage in the automotive ecosystem in the country today. In this scenario, development of organisational capabilities that are aligned to business lines and/or segments and are dynamic will help the industry understand changing customer needs and deliver accordingly to meet these needs.

2. **Disruptive impact of technology:** The car of the future will be electrified, automated, shared, connected and updated yearly to make driving easier, safer, cheaper and more comfortable. In addition, with increasing acceptance of digital solutions, a new wave of emerging technologies are on the cusp of affecting the industry at three levels:

   a. Vehicles (electric, driverless and connected; with smart sensors, real time vehicle tracking, geo fencing, driver analysis and remote diagnostics)

   b. Supply chain and operations (digitised trucking, upcoming logistics hubs, automated warehouses, robotics, augmented reality and IoT)

   c. Business models (mobility as a service and vehicle sharing)

   The Indian Government has the ambitious target of ensuring that only electric vehicles are sold in the country within the next few years. The Ministry of Heavy Industries has shortlisted 11 cities in the country for introduction of electric vehicles (EVs) in their public transport systems under the Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles in India (FAME) scheme6. The first phase of the scheme has been extended to March 2019. In February 2019, the Government approved the FAME-II scheme with a fund requirement of INR 10,000 crore (US$1.39 billion) for FY20-22. The number of vehicles supported under the FAME scheme increased to 192,451 in March 2018 from 5,197 units in June 2015.

Going forward, with new technologies coming in, organisations' technology capital will be the key differentiator. Digital transformation and speed of execution will be the key requirements for the survival of most automotive organisations.

3. **Dynamic regulatory environment:** India, an emerging economy, has been traditionally looked upon as a favourable destination for low-cost manufacturing. However, regulatory pressure and the benefit of industry enablers are expected to have a disruptive effect on the portfolios of vehicles and the automotive supply chain. Major regulatory interventions such as the following are planned:

   a. Adoption of BSVI norms in Delhi/NCR by 2019 and pan India by 2020 for all new four-wheeler vehicles sold

   b. Change in tax structure—GST and resultant costs

   c. Government investment on the automotive sector and its plans for infrastructure development (*Pradhan Mantri Gram Parivahan Yojana, Bharatmala Pariyojana*, etc.)

   d. Adoption of safety standards in line with international norms

   e. Formulation of end-of-life or scrappage policies

   f. Implementation of Corporate Average Fuel Efficiency norms[4] under which manufacturers need to improve their fuel efficiency by 10% between 2017 and 2021 and 30% or more by 2022

   g. Adoption of EVs and alternative fuels through FAME-2

Stringent vehicle-related standards are leading to a shift in vehicular technology. Automotive organisations therefore need to invest in developing various technical skills that are relevant in this era of changing vehicular technologies.

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5 PwC. (2014). Adapt to survive: How better alignment between talent and opportunity can drive economic growth. Retrieved from http://www.pwc.com/gx/en/hr-management-services/publications/talent-adaptability/index.jhtml (last accessed on 20 April' 2019)

6 Indian Automobile Industry Analysis: A Sectoral Report. Indian Brand Equity Foundation. (2019). https://www.ibef.org/industry/automobiles-presentation (last accessed on 20 April' 2019)

4. **Changing face of mobility infrastructure:**
Self-driving vehicles, ride-hailing services and other technologies are transforming mobility. The development of alternative modes of mobility (e.g. autonomous vehicles and electric vehicles) alongside that of smart infrastructure (e.g. smart cities, optimisation of parking space, artificial intelligence (AI)-driven traffic lights and the focus on enablement of EV-charging infrastructure) is projected to transform mobility infrastructure. In this environment, India's efforts to support EVs are likely to focus on two-wheelers, public transport and fleet operations such as taxis and three-wheelers. According to the report by Bloomberg New Energy Finance (BNEF), India will see much progress on electric two-wheelers, rickshaws and electric buses over the next 10 years and by 2040, EVs will constitute 40% of the total passenger vehicle fleet in the country[7]. However, while transportation infrastructure continues to be augmented, EV-charging infrastructure (with less than 1000 charging stations in India) is yet to take off. In this scenario, the industry is expected to face unique challenges with changing mobility infrastructure, the specifications of fast-charging standards and exploration of enhanced technology options.

5. **Globally interconnected industry:** Global and local markets offer a sustained growth potential for the Indian automotive industry. An increase of FDI in India and the emergence and adoption of globally emerging megatrends and technologies in the country are expected to result in the country's increased dependence on other countries at every step of the automotive value chain, e.g. R&D, purchase of raw material, power electronics, manufacturing support and sales. Therefore, automotive organisations' ability to put in place and implement effective global and local strategies to manage risks and build their capability to drive their strategies will be of paramount importance.

These megatrends are already affecting the industry, and as we look ahead, we realise that thriving in this changing environment will require automotive organisations (across the value chain) to make several fundamental changes in their way of working in order to drive profitable growth and remain relevant in the market. This will also mean a shift in the way the industry thinks about talent and capability requirements in the future. These changes will also offer an opportunity to automotive industry participants to use digitalisation as an enabler to create a unique competitive advantage across the value chain. The industry will therefore need to gear itself for a cultural shift, structural changes, job disruptions and major skill and capability building to compete with global players, maintain and create a competitive edge, and cater according to global requirements and standards.

Achieving success in the digital world will require new ways of thinking, especially in the area of talent. The need for transformation of the workforce in the digital age will require much more than simple automation of routine processes[8]. It will be about collaboration between technology and talent to unleash organisations' full potential. This will mean finding people with the right skills and capabilities or providing the workforce with the required skills, while protecting employees' experience and helping them build a trusting relationship with society.

This may pose major challenges for industries, workers and policymakers as they grapple with shifts in the structure of employment and jobs, which will bring about significant changes in business models, downstream services and organisations. It is to meet this need that this report sets out to predict the fundamental impact of these megatrends, the development paradigm required by the automotive industry in terms of timescale, volume and complexity, and the role of HR and leadership.

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7 https://about.bnef.com/electric-vehicle-outlook/#toc-download (last accessed on 20th April' 2019)

8 PwC's. (2018). Workforce of the future. Retrieved from https://www.pwc.com/gx/en/services/people-organisation/publications/workforce-of-the-future.html) (last accessed on 20th April' 2019)

2

Organisation and workforce of the future in the automotive industry

2.1. Impact of megatrends on organisations and the workplace

Usage of Information Technology (IT) and integration of technological research on manufacturing products and processes is not a new phenomenon in the automotive industry. However, what is new is the level of sophistication and speed of application of new age technologies such as IoT, AI, machine learning and robotics as part of the Industry 4.0 evolution. The speed of change is leading to a paradigm shift in the way the manufacturing sector operates. In the area of megatrends, disruptions and new ways of working are expected to result in irreversible changes in the automotive industry, which are likely to generate significant opportunities in the sector. As per the Automotive Mission Plan 2016-26 (AMP 2016-26), the Indian automotive industry is poised to become one of the largest job-creating engines in the country, with the creation of approximately 65 million jobs in the next decade. This should contribute significantly to the country's growth, provided the sector is able to address and resolve the twin challenges of low employer attractiveness and the gap in supply of a skilled workforce to meet the requirements of future jobs. Moreover, what needs to be borne in mind is that there are many changes that are unforeseen and unknown today.

Going forward, automotive organisations will need to successfully manage the following seven key shifts to thrive in the new world order in the automotive industry.

Seven shifts faced by automotive organisations

Impact of megatrends on automotive organisations

1. Departure from traditional manufacturing
2. Shorter cycles of innovation, development and production
3. Changing face of service and support ecosystem
4. Digital becoming the new normal
5. Evolution of new jobs and associated skills
6. Requirement for new skills and capabilities
7. Shift in workforce composition and metrics

"There are no changes being experienced or foreseen immediately, and many of the advances made in technology, including designing of EVs, are at a nascent stage in India. Discerning the kind of skills required and the training needed to meet future requirements will require some crystal gazing."

– HR leader of the Indian arm of a leading European car manufacturer

1. **Departure from traditional manufacturing:** Today, vehicles are no longer viewed as only being a means for commuting or transporting people and goods. The experience and utility of driving a car is very different from what it was a decade ago. Thanks to new age technologies, customers' expectations have risen high on three counts: a vehicle's performance, its smart and safety features and their experience. In addition, all stakeholders – the customer, government bodies and regulators, and social institutions – are also talking about the environmental impact made by the sector. Furthermore, to bring emissions down and encourage sustainable driving, there is a huge emphasis by the Indian Government on adoption of EVs. All these factors put together are gradually making traditional manufacturing and existing vehicles outdated. This means that infrastructure and assets deployed by automotive companies in the era of Industry 2.0 and Industry 3.0, and the skills and capabilities that are utilised to operate these assets will no longer suffice. Consequently, automotive players across the value chain will need to gear up to meet these changing requirements, both in terms of infrastructure and the skill-sets of people in the new environment. The challenges posed will be accentuated as new and traditional ways of working continue to coexist and evolve.

2. **Shorter cycles of innovation, development and production:** The advent of electrified and autonomous vehicles and the emergence of new mobility patterns driven by connected and shared vehicles, coupled with the regulator pressures, are expected to accelerate the speed of innovation in the automotive industry. The cycle for introducing new models and their variants is also projected to shorten. This will put pressure on (Original Equipment Manufacturers (OEMs) to shorten their Research & Development (R&D), planning, and production and delivery cycles, while constantly integrating the latest technology in new models and variants. This will mean revamping the entire operating structure and its interaction with the ecosystem.

3. **Changing face of service and support ecosystem:** The concept of service and support in the automotive industry is likely to take a new meaning altogether. With the advent of EVs and hybrid vehicles (HVs), the downtime for vehicles is likely to reduce drastically. Even the infrastructure and capabilities required to support and service EVs and HVs will be very different from those used today. And while advances in the autonomous vehicle segment in India are still ambiguous due to multiple reasons, it is certain that the services and support required in the future will be very different from those prevalent today. Therefore, there will be a need for automotive companies to revamp their service networks and build specialised expertise in the field of electronics (and not just mechanics) in order to manufacture these advanced vehicles.

4. **Digital and automation becoming the new normal:** To keep in step with developments in the industry, automotive organisations in India are digitising their plants and value chains. This is taking place at a must faster pace today compared to three years ago. The automotive-manufacturing setup of the future will bare very little resemblance to the one that exists today. Digitisation will not only drive automation, but also changes in processes and facilities that will be automated. In these circumstances, maintaining the momentum for digital adoption will require a different kind of culture and workforce as well as a shift from the existing patterns in which automotive companies are acclimatised to operate. Digitisation is also expected to lead to democratisation of information and increase transparency across organisations. Managing this new status quo will require a proactive change in management functions.

5. **Evolution of new jobs and associated skills:** For decades, automotive companies in India have had the benefit of operating in an environment that was relatively static and controlled. Therefore, many jobs across OEMs and suppliers have been around for years on end in their current shape and form. With the impact of disruptive forces becoming more pronounced and automation taking place at a much faster pace, jobs in the sector will witness a sea change. New jobs are already emerging across the different parts of the automotive value chain and repetitive ones are becoming automated. The pace of adoption of EVs, HVs and autonomous cars will further determine the speed and quantum at which new jobs will emerge. Going forward, new jobs are likely to be added in the area of IoT, mechatronics, robotics, 3D printing, AI, machine and deep learning, and analytics.

6. **Requirement of new skills and capabilities:** The megatrends and challenges emerging from these trends are interlinked. The shifts in manufacturing infrastructure, customers' preferences and changes on account of automation will require a workforce with diverse skills and capabilities. Some of these skills that will be critical will be in the field of mechatronics, 3D manufacturing, electrical engineering and electronics. Human workers will also need skills using which they can coexist and work with robots. The demand for this workforce, which is equipped with the new skills, is only going to rise. This will make the current set of

engineers, operators, technicians and shop floor workers redundant in the next few years. Availability of skilled manpower in adequate numbers is already a concern raised by many automotive majors. Therefore, it will be imperative for automotive companies to deploy a multi-pronged approach to bridge the talent-skill gap between the white collar and blue collar workforce.

7. **Shift in composition and metrics of workforce:** Another major impact of these megatrends that will be felt by automotive companies in the form of changes in the composition of their workforce. Some of this change will also be driven by the fact that many automotive companies have employed people for life and they are reaching a stage wherein they will experience a churn on account of superannuation. This will pave the way for hiring fresh talent from outside their organisations, especially for critical roles for which a ready pipeline of leaders may not exist within their enterprises. Automotive companies will need a multigenerational workforce that will come together to deliver on a new agenda that is driven by technological and digital enhancements. This will require these organisations to evaluate their productivity norms and metrics in order to see a significant change in the future.

2.2. Building the organisation and workplace of the future

The Indian automotive industry comprises a divergent set of players from OEMs to tier 'n' suppliers, with each playing a critical role in the value chain. This dispersion has led to heterogeneity in the type of ownership, operating structure, workforce model, scale of operations, demand for skills, supply of jobs and their availability. The automotive industry also thrives on a strong forward and backward linkage with other prominent industries such as logistics and transportation. This integration is set to take new shape as vehicles become more and more connected. Globally, the automotive Industry is already witnessing this phenomenon with many non-traditional partnerships (e.g. with IT product, OTT, electronics and telecom companies). This highly integrated value chain within the industry and its new interlinkages with allied and/or adjacent industries intensifies the impact of disruptive forces.

In this backdrop, every organisation in the industry, depending on its stage of growth and where it is in the automotive value chain, will experience the disruptive forces and their impact differently. The leaders of various automotive companies in India share this sentiment and are articulating their assessment of this impact in terms of the time, speed and scale required in varying degrees. However, irrespective of the speed and scale of the impact, organisations will have to quickly prepare themselves to respond to and thrive in the new work order.

'Organisational agility' will be an important theme for the sector for it to be able to respond to disruptive forces quickly. Organisational leaders will need to unlock new levers to ensure that their organisations are agile enough to respond promptly to changes – known and unknown –the future may bring. This will entail their building nimble operating models and structures, adaptable systems, and processes, agile workforce models as well as continuously upgrade their people's learning. In addition, in order to respond to and react quickly to such requirements, organisations will have to build their digital IQ. This will require them to digitise essential processes across their value chains and put in place structures to strategise, plan and enable digitisation.

In order to drive 'organisational agility', automotive organisations will have to focus on two key aspects:

2.2.1. Building and organising for structural agility

Building an agile organisation structure will start by assessing how disruptive forces are likely to impact the organisation and aligning its key stakeholders to build a common understanding of its future state. Making automotive companies structurally agile will mean a shift from their traditional process-centric command and control structure, which most of them have in place because of their business models in the past, to an empowered and customer-centric structure.

- **Transformative project team structures with a sound base structure:** Leaders will need to identify those parts of the business that require greater agility and ensure that robust mechanisms are in place to enable formation of project teams in a seamless way based on organisations' emerging requirements. It will be important to evaluate and rethink how various dimensions of structure will be effective in a project-related environment. An efficient structure should enable effective, lean and scalable management with changes in roles and responsibilities, work content, span of control, etc., required to drive the kind of structural agility automotive organisations will need.

- **Analytics-driven decentralised decision making:** Traditionally, automotive companies have had a command and control structure, which has enabled them to drive excellence in their processes and achieve manufacturing excellence. With so many changes under way and diverse variables at play, there will be a need

for accelerated speed in the decision-making process while retaining governance and managing associated risks. The number of layers involved in the decision-making process will have to be significantly reduced with a decentralised approach on the back of Big Data and analytics. This will require increased autonomy for employees across levels.

- **Appointing custodians to 'build and manage the organisation of future':** Automotive companies will need to take that informed leap of faith and acknowledge how disruptive forces are going to impact their business. They will have to constantly communicate how AI and automation can increase productivity and what will it take to actually operationalise these within their business. Appointing people and teams to take charge of this change and hiring people at the management level to focus on becoming organisations of the future could be a starting point. This will be an arduous task for some companies as it would require a departure from their current state. In addition, they will have to challenge the status quo on multiple fronts.

2.2.2. Building an agile workforce and talent models

Building an agile workforce and talent models for the future will be the second-most critical imperative for the automotive companies in order to achieve the organisational agility they aim for[9]. Automotive companies have been managing their workforce strategies by using a traditional pyramid approach, which has served them well in the past. Keeping up with workforce shifts and deploying new workforce strategies and models will not be easy, especially for large and complex organisations. Traditional linear models of workforce planning and talent deployment will not fit new requirements. Therefore, automotive companies will need to plan for dynamic multiple evolving scenarios. The key to success will be their ability to identify microcosms within their organisations, which they can use to pilot new approaches.

- **Widening the 'talent catchment':** India's automobile industry is uniquely structured on the talent catchment front. While the managerial talent pool has seen a significant shift in hiring from different geographies within India, shop floor workers, operators and other blue-collar workforce are largely hired from local catchments. Therefore, in view of the high demand for a skilled workforce, automotive companies will need to redefine their talent catchments. This will require

them to eliminate obstacles and put in place support structures to enable free movement of skilled labour, diploma-holders and engineering graduates. Automotive organisations will need to think more widely about sources of talent, and not only explore new sectors and geographies but also invest in their current employees and encourage them to do new things. Moreover, the willingness of their employees to embrace change and apply their skills somewhere new will be important for them to respond to the changes driven by disruptive forces. An adaptable and flexible workforce will therefore be invaluable for such companies to address skills gaps in their operations.

- **Rebalancing workforce through alternative talent hiring and deployment plans:** The automotive sector, being the major employer in India, continues to face a challenge in attracting the best talent (partly due to the demand-supply gap, as well as its lack of attractiveness and career growth opportunities). Booming IT, e-Commerce and finance institutions pose tough competition to the automotive sector when it comes to attracting talent. Attracting the best-fit talent will be about creating a compelling employee value proposition and striving to increase the inclination of Gen Y to work in a manufacturing environment at leading OEMs and auto-component companies. However, building manufacturing excellence requires capability-building around innovative production techniques and the introduction of integrated streams such as mechatronics. In order to build excellence in R&D, an increased focus and investment will be required on new digital platforms and technologies. Hiring from outside the industry could also be a solution, especially on the digital skills front, but, this option will be limited in many areas that may require automotive- specific skills. While some OEMs and auto-component manufactures are partnering with engineering colleges, their focus on this needs to increase. Organisations will therefore need to shift their hiring strategies to take advantage of changing market dynamics. Speed of deployment, ability to flex workforce plans and adaptability of talent will be critical for them to keep pace and compete with their competitors. They will have to increasingly tap into alternative sources of talent (e.g. a 'liquid' workforce) to drive flexibility in their workforce as well as in HR's role. This will be extremely critical in creating new and innovative channels to attract the right talent.

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[9] Workforce agility (https://www.pwc.co.uk/services/human-resource-services/human-resource management/workforce-agility.html) (last accessed on 20 April'2019)

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Required skills and capabilities in the automotive sector
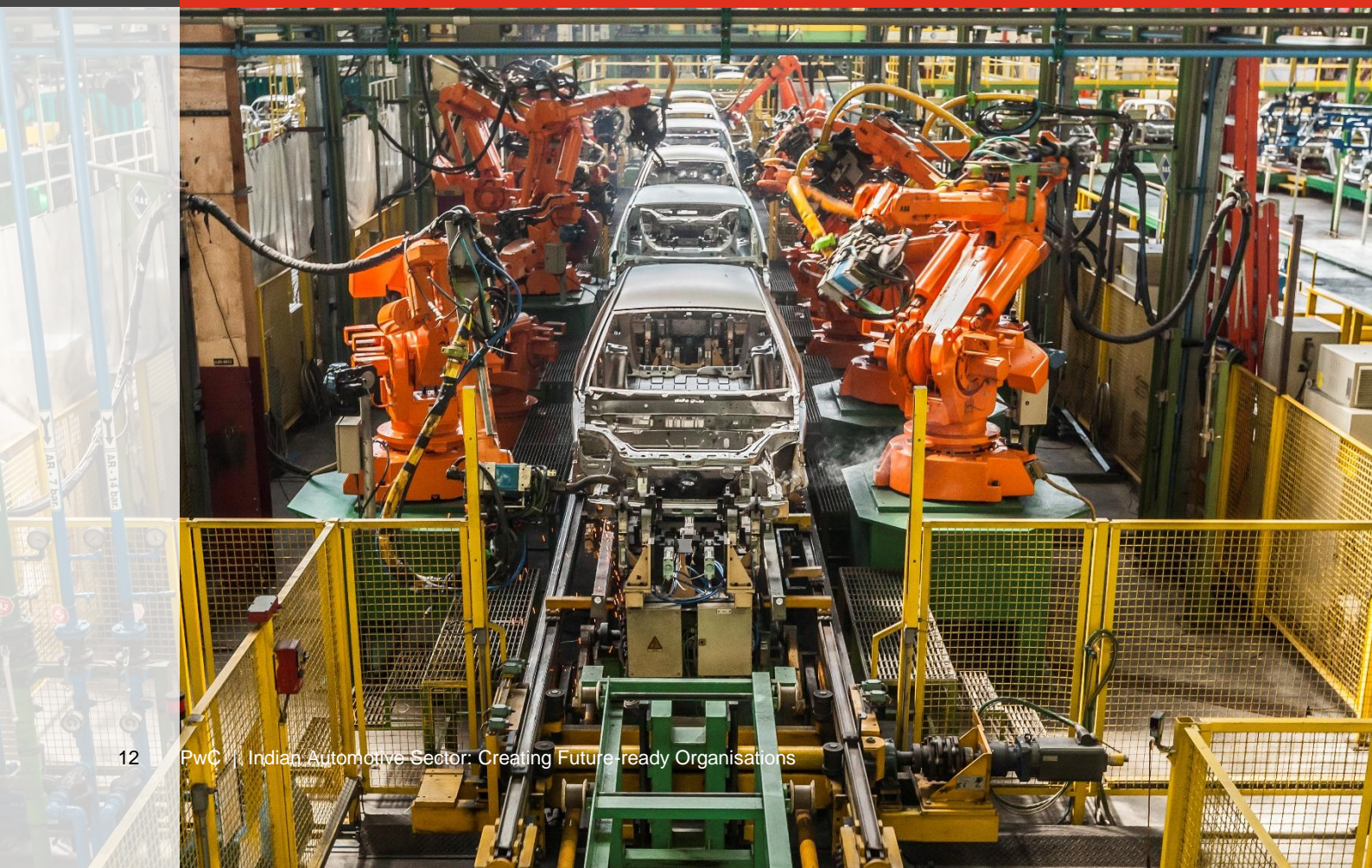
3.1. Skills of the future in the automotive industry

The automotive sector has been a major employer in India for decades. As per the Automotive Mission Plan 2016-26 (AMP 2016-26), it is poised to become one of the largest job-creating engines in the Indian economy with approximately 65 million jobs being added in the next decade[1].

However, jobs in the sector and associated skills are rapidly evolving with many new jobs expected to be added to the employment landscape in the next three to five years. Skill-related demands from existing jobs will also be different. The industry has been investing heavily in automation and digitisation over the past few years – this is true for Indian as well as global players operating in India and the trend is likely to continue.

> "Robots have enabled almost 70 to 100 per cent automation in weld shops, press shops, cast shops and paint shops and are further penetrating into assembly operations to enable a higher degree of automation and lower costs for the manufacturer."
> **– HR leader at a Korean automotive company**

When we spoke to the business leaders of various automotive companies – OEMs as well as Tier 1 and 2 suppliers – we heard some interesting views on skills that will assume significance in the future. Based on the views of these leaders and PwC's analysis (based on secondary research), we have outlined the skill buckets that will be most relevant. (Note: The list provided is not exhaustive.)

1. **Mechatronics:** The shift to EVs and HVs will fuel the demand for specialists in mechatronic engineering. From electrical motor control to battery and power management, sensor-making to computational skills, employers will be looking for talent specialising in this growing sector.

   Note: Mechatronics, which is also called mechatronic engineering, is a multidisciplinary branch of engineering that focuses on engineering of both electrical and mechanical systems, and includes a combination of robotics, electronics, computer, telecommunications, systems, controls and product engineering.

2. **AI and machine learning (ML):** As automation and connectedness become the centre of the automotive industry, AI and ML will play an integral role in vehicles and factories of the future. Understanding how AI works and its application in the automotive context will become critical for employees across organisations and deep skills will be required in R&D, production, supply chains and services.

3. **Robotics:** Robots and their usage in automotive manufacturing is not new. However, given the speed of change and shortening of cycle time, their usage has accelerated and their application gone beyond manufacturing processes. Skills to be built for robotics do not only involve coding applications for robots in vehicle-manufacturing, but also encompass its usage in R&D.

4. **Digital:** In today's world, customers are viewing almost everything as an experience. Unlike in the past where every customer would visit a dealership to experience a vehicle or on occasions make a purchase decision without this experience, today almost every customer is 'experiencing' vehicles online. Many of them would have already decided or narrowed down on the vehicles of their choice, based on online research and crowd-sourced views gathered through their peer networks. Digitisation of the entire value chain is required to serve this new customer, anywhere and anytime.

5. **Data mining and analytics:** Designing and assembling vehicles have become increasingly complex with the integration of automation and IoT. Additionally, the design to dealership shelf cycle is shortening. In order to cope with these constraints, it is imperative for organisations to deploy tools that can collate, analyse and generate insights from data collected from every lifecycle stage of a vehicle – design to production.

In addition to these skills, there are certain non-technical skills and competencies that will assume increased significance going forward. Problem-solving and decision-making will continue to be a necessary foundational skill for employees across levels. Agility in learning and adapting to changes will be amongst some other important competencies required. From the leadership perspective, leading and managing change will be critical.

"Skilled talent is available but in a fragmented manner and may not possess the skills of the future. There is a need for close partnership with ITIs and other educational Institutes to update curriculums and create a steady flow of talent equipped with future skills. There is a need to build a complete ecosystem for learning. This cannot be done in isolation. The next three to five years are very critical for India from the skill building perspective for the Indian automotive industry."

– Chairman of a leading auto component manufacturer

"While automation is non-negotiable and going to benefit the industry in many ways, its perceived impact on employment has been articulated as a concern by many people. With automation, there will be an increased need for skilled workforce in new areas and their ability to implement and manage the new automated workplace. Furthermore, certain complex manufacturing jobs may not lend themselves to automation and will continue to need human intervention. In this background, we will have to constantly work on training and reskilling our people to keep their skills current and relevant."
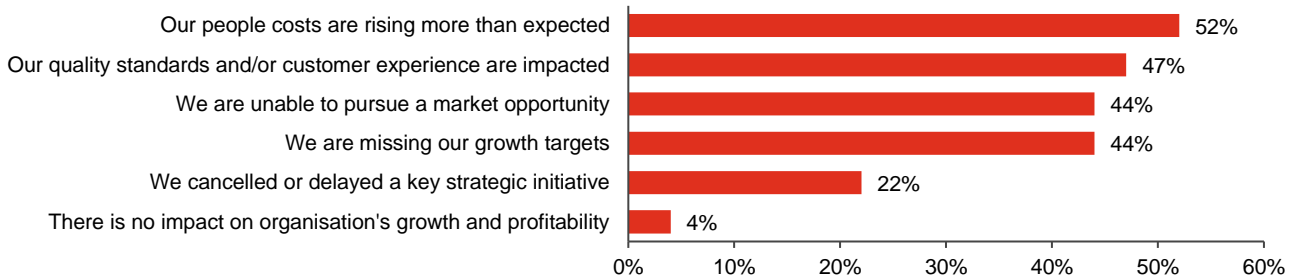
– HR leader at a leading OEM

Training conducted for engineers, operators, technicians and shop floor workers in the Indian automotive industry may not be useful after two or three years. Industry leaders envisage that as EVs come into the mainstream, requirement for components, engines and batteries will change significantly with the number of parts becoming fewer but more sophisticated. This will require operators and their supervisors on the shop floor, along with technicians, to acquire these new skills fast. Requirement is -

- Upskilling in the following areas: mechatronics, telematics, robotics, autotronics, data analytics, lean manufacturing, process knowledge, quality core tools training, computer-aided engineering, robotics, programmable logic control, 3D modelling software and machine- handling skills

- Building functional capabilities: Capacity for innovation, emotional intelligence and the ability to adapt to different cultures

- Focus on building 'multi-hatted' talent with combined business and technical acumen to enhance cross-functional execution capability and credibility

- Promoting lifelong learning and adaptability through regular re-skilling to meet changes in market events or business models

- Revisiting corporate training programmes and augmenting these with open online courses and other externally available content.

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PwC's 22nd CEO Survey[10] reveals that CEOs are more worried than ever about skills and the skills gap is a particular pain point, impeding innovation and prompting higher people costs. As CEOs turn to what they can actively control inside their organisations, they confront the cracks in their own capabilities, especially the information and skills gaps illuminated in our survey sections on data and analytics and artificial intelligence (AI). Organisations struggle to corral data into useable and actionable intelligence, and the main reason for their frustration is 'lack of analytical talent', followed closely by 'data silos' and 'poor data reliability'. Without clean, relevant, and labelled data, organisations are stymied in their efforts to move aggressively on AI, which CEOs overwhelmingly 'agree' will have a significant impact on their business within the next five years. One of the more striking findings in this year's survey is the fact that the 'information gap'—the gap between the data CEOs need and what they get—has not closed in the ten years since we last asked them these questions.
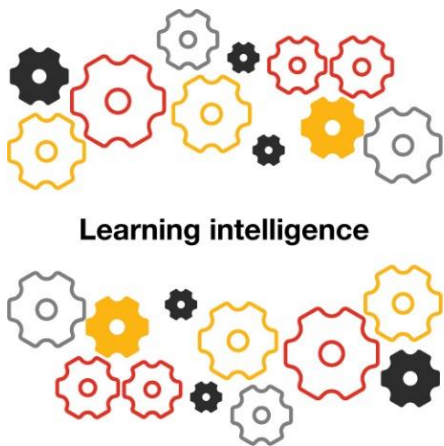
Response	Percentage
Our people costs are rising more than expected	52%
Our quality standards and/or customer experience are impacted	47%
We are unable to pursue a market opportunity	44%
We are missing our growth targets	44%
We cancelled or delayed a key strategic initiative	22%
There is no impact on organisation's growth and profitability	4%

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10 PwC. (2018). 22nd CEO Survey (last accessed on 20th April 2019)

Closing the skill gap for the automotive industry of the future

Closing the skill gap for the automotive industry of the future will require auto companies to adopt the three-pronged strategy of building, buying and borrowing talent, all activated in parallel. A standalone approach is likely to deliver suboptimal results and may not help in fulfilling the gap that exists.

1. **Building the current workforce:** India's automotive industry has always been labour-intensive. This presents both opportunities and challenges for the sector. If the industry is able to crack the new code of reskilling and training at the required pace, it will be able to deal with the skilled talent shortage to a great extent. Realistically, this may not be feasible for 100% of the current workforce in view of the ability and willingness of individual employees to be trained and re-trained.

   a. **Providing tools and opportunities:** Integrating the comprehensive and innovative skill development required in corporate strategies will be critical. Reskilling and training can no longer be HR's agenda alone and will have to be viewed as a cost by organisations. A paradigm shift needs to be made by automotive organisations to view these as an investment for the future. Speed and scale will be of paramount importance and this will require automotive companies to engage in new forms of learning such as virtual learning, online learning, MOOCs and classroom training. Partnering with educational institutions and training centres, which have already created new training modules and are delivering training on the skills of the future will be of paramount importance. And while automobile companies have set up in-house training centres, much of the training must take place on the job. Therefore, ITIs and engineering curriculums will have to be tweaked and made more relevant so that while the fundamentals of education provided essentially remain the same, but their applications could change. Now, with the advent of new generation technologies, the industry needs to quickly come together, and create and develop workforce re-training programmes across organisational levels to be future-ready for new job roles to attract the right talent with skill-sets and nurture in-house talent.

   b. **Building the 'learning intelligence' quotient:** It is now more critical than ever before for organisations to identify, incentivise and build leaders who have a high level of learning intelligence.

Learning intelligence

Why to learn
What to learn
How to learn

2. **Buying talent from the market:** With new technologies and skills changing value chains in the industry, building up the current workforce may not completely serve the requirements of automotive companies, especially actions that need to be taken on immediately. Building systems and processes to attract talent with relevant skills and capabilities from other new age industries will be critical. Infusing talent from outside is not only likely to hasten the pace of innovation, but also accelerate the speed at which current workforce is reskilled.

3. **Borrowing 'domain experts' to incubate new skills:** The automotive industry will also need to look at innovative approaches to borrowing talent from other industries and geographies on an urgent basis to create a blueprint for organisations of the future as well as incubate new skills that can then be expanded across a larger workforce segment.

3.2. Building capabilities for the future at the top of the pyramid

In view of the megatrends and changes the automotive industry is witnessing, there is huge uncertainty about the future and the unintended consequences of actions taken. Consequently, the role of leadership will have to be of totally different from what it has been so far. With the expected disruption, leaders will need to challenge the status quo and take big and bold decisions for the future while ensuring that their decisions are followed through. Moreover, establishing personal credibility in organisations and the will to learn and evolve while staying relevant will be foundational capabilities that drive organisations' success.

Our study identified nine leadership capabilities which will help leaders navigate through India's world of work in 2030:[11]

Emerging or new capabilities

1 Disruptive envisioning

Mental courage and perspective to cut through the noise of today to challenge paradigms and plan for multiple futures for the organisation of tomorrow

2 Multidimensional sense-making

Ability to make sense of the context in a complex environment (VUCA world) and constantly challenge old mental models and assumptions

3 Orientation towards institution building

Ability to place an organisation's mission and purpose above everything, including personal wins and achievements

4 Managing multidimensional diversity

Ability to lead a workforce compromising multiple generations, cultures, employment models (part-time with multiple employment contracts, full-time) and compositions (machines, bots, AI, humans)

5 Personal credibility

Consistently displaying authenticity of thoughts and actions, leading to the creation of a strong personal brand of excellence and dependability

6 Talent magnetism

Ability to lead without authority, inspire trust and rally people towards a common purpose/vision

Core or foundational capabilities

7 Curiosity to learn and evolve

Ability to learn continuously and evolve in order to stay relevant

8 Building and nurturing networks

Ability to work with a range of traditional and non-traditional partners/stakeholders in a constantly evolving network

9 Self-awareness

Ability to be brutally honest about oneself and the impact created on the ecosystem/environment

When we spoke to the business and HR leaders of various automotive organisations, they acknowledged that all the nine capabilities (mentioned above) will be critical for the future success of the industry. However, they ranked disruptive envisioning, multidimensional sense-making, an orientation towards institution building, talent magnetism and building, and nurturing of networks as the top five capabilities required from the automotive perspective.

"Leaders will have to put 'organisation first' and that's where an institutional building mindset will be important. A leader will have to lead from the front, and inspiring trust and rallying people towards a common purpose will be the differentiating factor."

– Promotor of an automotive component manufacturer

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[11] PwC. (2017). Reimagining leadership: Steering India's workforce in 2030. Retrieved from https://www.pwc.in/consulting/people-and-organisation/reimagining-leadership.html (last accessed on 20th April' 2019)

Leadership 'simultaneities[12] another important dimension under which we tested the decisions and choices leaders will need to make to navigate through the future. These simultaneities are characteristics at the two ends of a spectrum and will test a leader's ability to move across it in order to lead successfully.

The top five simultaneities are

Courage to try new things and resilience to survive

Confident enough to move forward and humble enough to admit that they are 'not experts'

Highly strategic and agile in implementation

Leadership simultaneities

Politically astute and maintaining integrity

Technically savvy and humane

Adopting simultaneities with decision-making capabilities to balance competing business scenarios will be critical for leaders in the automotive sector. Having the courage to try new things and the resilience to survive amidst disruptions and uncertainties, and being strategic and agile in implementation will be critical for them.

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[12] PwC. (2017). Reimagining leadership: Steering India's workforce in 2030. Retrieved from https://www.pwc.in/consulting/people-and-organisation/reimagining-leadership.html) (last accessed on 20 April'2019)
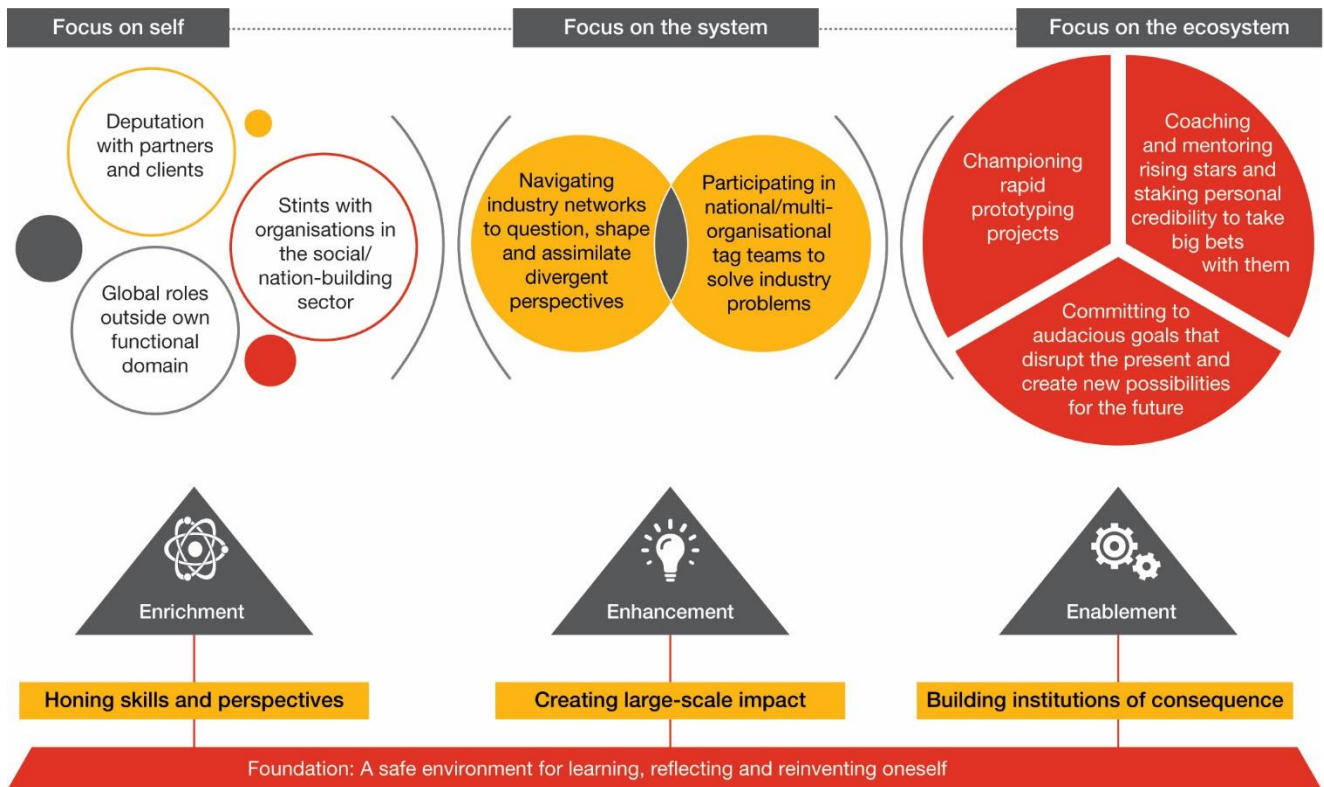
4

Bridging the skill and capability gap: Building the right development ecosystem
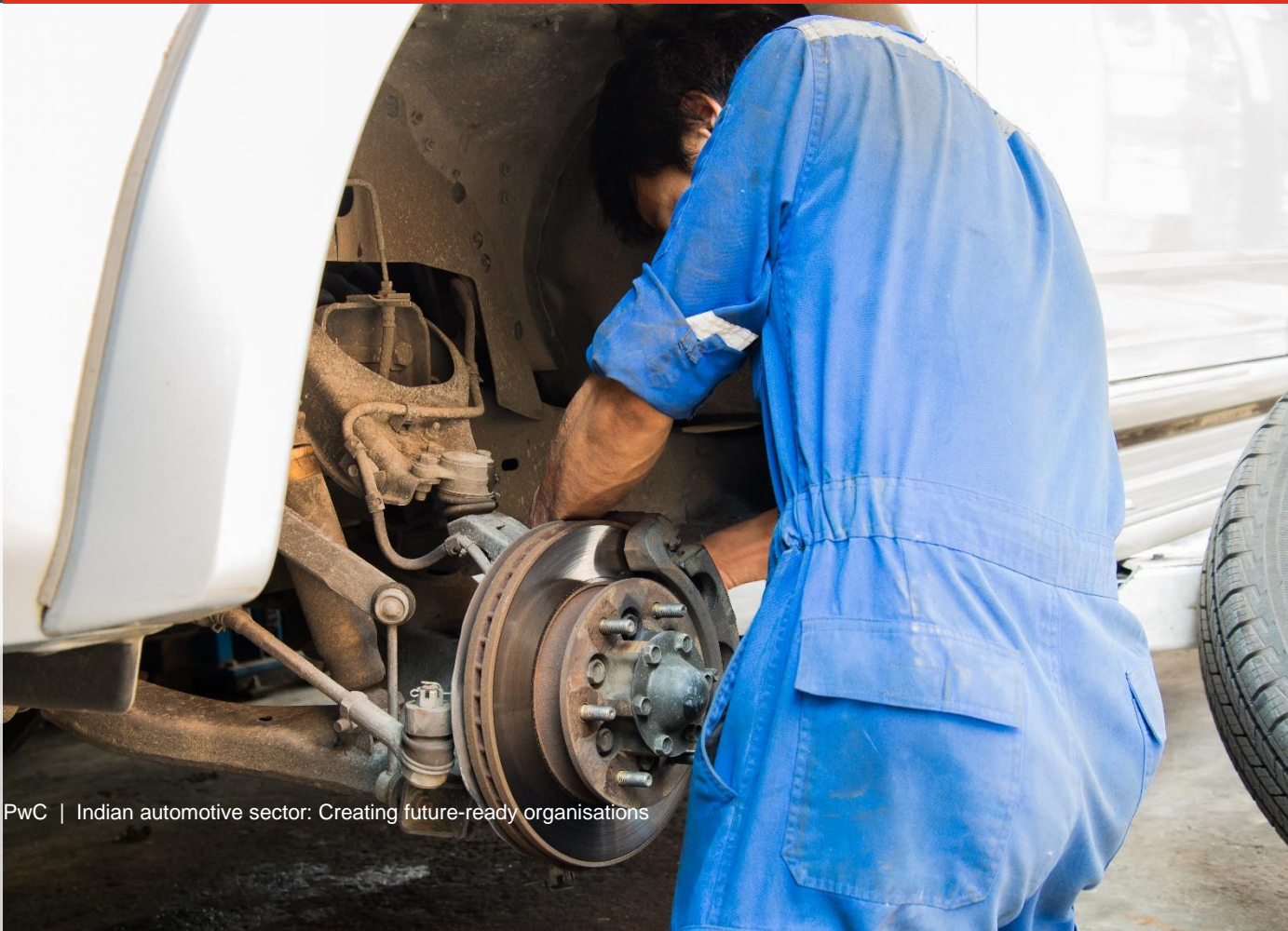
In the future, success will be a unique amalgamation of what talent brings to the table, what organisations have to offer and what the ecosystems provide and demand. Hence, our point of view on development is a three-dimensional view that focuses on three pillars—enrichment, enablement and enhancement[11]—for sustained development.

The 3E model: Enrichment, enablement, enhancement[3]

Focus on self | Focus on the system | Focus on the ecosystem

Deputation with partners and clients

Stints with organisations in the social/nation-building sector

Global roles outside own functional domain

Navigating industry networks to question, shape and assimilate divergent perspectives

Participating in national/multi-organisational tag teams to solve industry problems

Championing rapid prototyping projects

Coaching and mentoring rising stars and staking personal credibility to take big bets with them

Committing to audacious goals that disrupt the present and create new possibilities for the future

Enrichment — Honing skills and perspectives

Enhancement — Creating large-scale impact

Enablement — Building institutions of consequence

Foundation: A safe environment for learning, reflecting and reinventing oneself

- **At an individual level**

  Enrichment is about building the skills of the workforce, which are required and are critical for the automotive of the future. This will entail preparing the workforce of the future and designing learning experiences, which will enable individuals to learn completely new and different skill-sets through hand-on experience in a safe environment. An environment will be offered by organisations to individuals to try, fail and reflect, all within short experience cycles, so that they can take back their learning to their work. Review and rethinking of traditional learning and development (L&D) models will be needed to create an immersive and continuous learning environment and drive employees' skill development throughout their careers. Workforce retraining programmes across organisational levels will need to have the components of 'collaborative learning ecosystems', which will enable learning not only within the premises of a fixed setup (which can be an organisation or educational institution), but expand the boundaries of learning and applications beyond these.

Automotive companies that have advanced in their journey of becoming future-ready can be a role model for other players to leverage their environment for applications. This will mean designing and implementation of career paths and/or development experiences outside organisations to provide new experiences and build perspectives, for example, a short- or long-term rotation to an OEM from an auto component manufacturer, and vice versa. The modus operandi for such interventions will have to be put in place and agreed on by organisations to enable seamless operations and optimal outcomes.

> "The increasing appetite for innovative technologies in the automotive industry has increased the demand for a skilled workforce. The industry needs to create a collaborative learning environment and develop training programmes across levels in an organisation for re-skilling and to be ready for jobs roles of the future."
>
> **– Chairman of a leading auto component manufacturer**

- **At an organisational level**

  Enhancement is about energising and invigorating an ecosystem. This will involve creating the right culture, structure, processes and systems to enable individuals to make an impact and thrive in the new workplace. HR, along with leaders, must create a culture where innovation thrives, ideas spark into life and people—whoever and wherever they are— bound together by a common purpose. In times in which everything will be changing at a rapid pace, communicating the common purpose and keeping an organisation true to its goal will be imperative for it to steer clear of issues in which automotive companies may get embroiled.

  Employees will need to be provided ample opportunities to work in diverse networks so that they can learn from different perspectives and build ecosystems of diverse networks within their organisations to drive innovative thinking. This can be achieved by the following measures:

  - Ensuring that employees understand how their organisations are changing and how they can be a part of this change

  - Engaging in a long-term approach to acquisition of sustainable knowledge and skill management and ensuring storage and retrieval of knowledge and applications and sharing of skills relevant for the future of the Indian automotive industry are implemented

  - Fostering a digital culture that promotes an entrepreneurial mind-set and developing people capabilities that are aligned with emerging technologies

  - Aligning talent with the digital culture

  - Building up the digital IQ of organisations, especially in the case of digital leaders

  - Developing leadership capabilities relating to disruptive envisioning, development of personal credibility and the curiosity to learn and evolve while remaining relevant

- **At the ecosystem level**

  Enablement is about energising and invigorating the ecosystem and magnifying the scope of impact by adopting an industry or societal perspective. The biggest challenge for the industry is to create the maximum positive impact. Automotive organisations will need to partner with the government, industry bodies and academia to challenge paradigms and drive agendas that reshape thinking and action to be taken. While initiatives on upskilling have been undertaken by

the Government (e.g. the proposal of change in the Apprentice Act for increased flexibility and the development of the National Skills Qualification Framework (NSQF), partnering with industry to upgrade certain educational institutions) and the industry (e.g. the introduction of specialised courses and new technology for OTJ training and the setups of training centres), there is a need for a more concerted effort to address the skill gap in the automotive industry in India. This is critical for staying ahead of the curve and creating a large-scale impact, including:

- Increased collaboration between the industry and academia on the relevance of curriculum in line with industry-related developments and enhanced partnership with academia and the Government to drive the skilling and learning agenda

- OEMs playing a significant role in driving the skilling and training agendas of their suppliers

- Increasing internships and apprenticeship opportunities for students

- Institutionalising standardisation of the competency-wage grid in the industry and aligning recruitment and systems

- Undertaking skill gap assessment periodically to assess demand and supply gaps in the automotive sector

- Strengthening the role of a centralised skill assessment and certifying agency

- Creating skill development infrastructure by setting up ITI s and SDC with government and CSR funds

- Institutionalising industry engagement by using the Auto Skill Development Council (ASDC) as a platform for engagements

- Incentivising the industry to make investments in skill development and initiating labour market reforms

An ideal end state for all stakeholders will be setting up of a robust network of educational institutions and organisational training centres, and the 'Skills of the Future University', which will work towards the implementation of a common framework for continuous re-skilling, learning and application. As the first step, organisations that have advanced on the path of creating learning and 'Skills of the Future' training centres can expand access to their facilities to other stakeholders. A constant dialogue with identified actionable outcomes will be critical for building such ecosystems

5

Call to action: The role of business leaders and HR in making organisations future ready

Create initial pilot projects

Cross-functional teams will need to be set up to drive pilot projects. These teams should be fully dedicated to a project and have the freedom to think outside existing company boundaries and point the company in new strategic directions regarding technology, ways of working and ecosystems. Pilot projects may also entail collaborating with leaders outside an organisation by working with start-ups, industry organisations or universities to accelerate digital innovation.

Map and communicate strategy for organisation

Organisations will need to analyse learning from pilot projects and devise their strategy. In addition, they will have to identify existing gaps that can hinder implementation of their strategies. Workforce planning will need to be a part of the exercise to understand the skills that people have and which an organisation needs. This will begin with tracking and mapping the 'skills footprint' of an organisation against the model to which it aspires. This data must not only relate to recruitment and internal job mobility but also learning and development.

- It should analyse the impact of megatrends and digitisation on an organisation in terms of changes in its structure, job roles, accountabilities, skills and mind-sets. A new organisational structure could include:

  – Incubators to protect and grow a new business idea, which will not be influenced by the legacy organisation

  – Pods or Centre of Excellence to enable temporarily self-organized teams without any formal hierarchy to solve problems or develop ideas in an interdisciplinary team setup

  – Ideation labs to provide an inspiring, creative and hierarchy-free working atmosphere where a trial and error culture is feasible

- It should redesign job framework (capabilities - digital, job families, roles – new/realigned and pay), based on new business models and technologies.

Introduction of new roles such as data scientists, user interface designers or digital innovation managers will be required. This will include clear and transparent communication of an organisation's strategy, future operating model, how roles may change or be augmented in the future and skills that will need to be honed.

Initiate reskilling with support from the available ecosystem

On the basis of the identified skill requirement, learning programmes will need to be developed and conducted through a variety of channels. Bit-sized module learning, learning through virtual reality, gamification, AI and design thinking, setting up of in-house training academy can be means used by HR to drive learning in an organisation. Employees will have to take ownership of their development journey, not only to build technical skills but also to gear up for the changing environment from a leadership perspective. Developing digital IQ in the organizational DNA will be critical. HR will also need to leverage the available training infrastructure in the ecosystem. And most importantly, business will have an important role to play in encouraging a shift in the educational syllabus as per industry needs.

Get the people experience right

The employee experience is critical for any organisation to attract and retain the hard to find talent from the workplace environment. The interaction of an employer and employee starts from the point when an employee explores a potential employer to exit an organisation and even further with an ex-employee working as a part of the liquid workforce of the organisation. All touchpoints add up to the overall experience. Today's employees, like customers, want to feel that their opinions are valued. Organisations need to understand how well they are delivering on this[13] by:

- Aligning their purpose, employees' potential and preference to ensure placement of the right manpower in the right role

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[13] PwC. (2016). The power to perform: Human Capital 2020 and beyond. Retrieved from www.pwc.com/hc2020 (last accessed on 20th April' 2019)

- Engaging in transparent, technology-enabled talent marketplaces where two-way employee or employer feedback is provided (e.g. former employees providing feedback or employers rating employees)

- Developing talent communities to connect with candidates and keeping them up to date with company news, events and opportunities

- Providing meaningful and immersive pre-employment visualisation experience through gamification, virtual reality, shadowing and short-term trials (i.e. 'day in the life' preview)

- Maximising the potential of gamification and psychometric testing to better understand candidates' skill sets, attributes and cultural fit

- Developing programmes and processes for outplacement to strengthen cultural fit

- Promoting internal mobility based on employees' career preferences

- Deploying HR Self-Service Employee Kiosk solutions

- Taking a relook at incentives to drive a stronger focus on values, flexibility, innovation, empowerment and challenge

Inculcating trust through transparency

Transparency underpins the relationship between an employer, employees and the wider world of stakeholders in the digital age. It begins with communication of an organisation's vision and culture, and also requires openness about its people strategies, diversity and inclusion, compensation and benefits strategies, and so forth. In addition, it requires:

- Revitalising organisational purpose and employer brand to align with evolving stakeholders' expectations in key areas, including career paths, continuous learning, diversity, flexibility and delivering value to society

- Implementing programmes and embed behaviours that reinforce the redefined culture, employer brand and sense of purpose.

- Building an effective risk culture to re-establish trust with customers and talent, and meet changing regulatory requirements

It is HR's role to map digital capabilities required for the future and enable development of these capabilities by putting in place the right structure. HR's role in making the shift from a process-centric command and control structure to an empowered and customer-centric one is of great importance.

"HR's role in creating an enabling learning environment and investing in building new capabilities within the organisation will be very crucial. It will be the responsibility of HR to develop and offer learning programmes in a variety of modes and enable employees to take ownership of their development journeys, not only to build technical skills but also to gear up for the changing environment from the leadership perspective. Alongside, digital and technical skills, HR, along with business, will also need to strengthen behavioural skills. Moreover, HR could play a role in up-skilling employees on understanding cultural nuances that will shift with changes in the workplaces of the future".

– Chairman of a leading automotive component manufacturer

6

Conclusion

It is difficult to gauge how the automotive industry of the future will pan out in India and worldwide. We can only prepare ourselves on the basis of informed predictions to face the uncertain times ahead and thrive amidst ambiguity and chaos. The success of automotive organisations will depend not on the quantum of resources they can expend to accurately define the future, but on how well they can prepare themselves to address challenges that are still unknown. In this scenario, it will be imperative for leaders to create conditions in which organisations and their people can constantly push themselves to learn, evolve and act with agility. Most importantly, on their journey, automotive companies will have to solve problems of today while keeping the future in mind.

Isolated, organisational-level strategies and tools will no longer enable organisations to address the challenges posed by disruptive forces and diverse opportunities. The need to build solutions at an ecosystem level with cross-organisational strategies and execution plans will become more important than ever before. A balance between approaches and interventions with clarity on the role each stakeholder group will play will be essential for an organisation to bridge skill gaps in terms of quality, timelines and scale. And last but not the least, for the automotive industry to succeed, it will need to have in place agile, diverse and empowered workforce models that will enable it to realise its ambition and achieve its national growth agenda.

7

References

1. Automotive Mission Plan : 2016-26
(A Curtain Raiser) (2015)
http://www.siamindia.com/uploads/filemanager/47
AUTOMOTIVEMISSIONPLAN.pdf

2. IHS Auto Database, Light Vehicle Sales Forecast,
ihsmarkit.com

3. The Global Competitiveness Report 2018
https://www.weforum.org/reports/the-global-
competitveness-report-2018

4. PwC. (2014). Adapt to survive: How better
alignment between talent and opportunity can
drive economic growth. Retrieved from
http://www.pwc.com/gx/en/hr-management-
services/publications/talent-
adaptability/index.jhtml

5. https://www.livemint.com/Companies/FpQ6YCFflJ
HYPGiX6in4AN/What-are-CAFE-norms-and-why-
do-they-matter-in-the-ToyotaSuz.html

6. Indian Automobile Industry Analysis: A Sectoral
Report. Indian Brand Equity Foundation. (2019).

7. https://about.bnef.com/electric-vehicle-
outlook/#toc-download

8. https://www.ibef.org/industry/automobiles-
presentation

9. Workforce agility
(https://www.pwc.co.uk/services/human-resource-
services/human-resource
management/workforce-agility.html)

10. PwC. (2018). 22nd CEO Survey

11. PwC. (2017). Reimagining leadership: Steering
India's workforce in 2030. Retrieved from
https://www.pwc.in/assets/pdfs/consulting/people-
and-organisation/reimagining-leadership/steering-
indias-workforce-in-2030.pdf

12. PwC. (2016). The power to perform: Human
Capital 2020 and beyond. Retrieved from
www.pwc.com/hc2020

13. PwC's. (2018). Workforce of the future. Retrieved
from https://www.pwc.com/gx/en/services/people-
organisation/publications/workforce-of-the-
future.html)

14. PwC. (2016). Industry 4.0: Building the digital
enterprise. Retrieved from
www.pwc.com/industry40

15. PwC. (2018). Reimaging the Indian automotive
sector: Creating future-ready organisations

Notes

About SIAM

The Society of Indian Automobile Manufacturers (SIAM) is a not for profit apex national body representing all major vehicle and vehicular engine manufacturers in India. SIAM works towards supporting sustainable development of the Indian Automobile Industry with the vision that India emerges as the destination of choice in the world for design and manufacture of automobiles. It works towards facilitating enhancement of the competitiveness of the Indian Automobile Industry, reducing cost of vehicles, increasing productivity and achieving global standards of quality. SIAM works closely with the Government and with international bodies like International Organisation of Motor Vehicle Manufacturers (OICA), International Motorcycle Manufacturers Association (IMMA) and coordinate with other counterpart international associations like, German Association of the Automotive Industry (VDA), Japan Automobile Manufacturers Association (JAMA), etc.

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