

Auto Bytes

Embracing digital within the auto ecosystem

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Digital transformation has turned around the way the automotive sector functioned. Automation, seamless connectivity, personalised experiences, etc., are some of the technologies that have put the sector in a state of transition.

Leveraging technology to create value and new services for various stakeholders, original equipment manufacturers (OEMs) are innovating and adapting to the changing circumstances. A host of undercurrent new technologies, such as internet of things (IoT), robotic process automation (RPA), artificial intelligence (AI)/machine learning (ML), augmented reality (AR), virtual reality (VR), edge computing, drones and autonomous vehicles, have become a pivotal focus for enhancing consumer experiences and generating growth.





Digital solutions map

Supplier network	Auto manufacturers	Sales and marketing	End market	After sales
 Autonomous emergency braking systems	 3D printed parts	 AI scripted commercials	 Immersive entertainment	 3D printed parts
 Collision avoidance systems	 Collaborative robots	 Digital retailing	 In-dash marketplaces	 Predictive maintenance
 Predictive powertrains	 Society of Automotive Engineers automation levels	 Loads management	 Shared mobility	 Telematics insurance

One of the most transformative impacts of digital transformation is the development of a data economy. The sector has realised the importance of data collection, management and analytics that would power more connected vehicles and lead to newer business models. As the old and new imperatives put unprecedented pressure on the product development teams, the time is ripe for OEMs to cash in on the consumer behaviour and build machinery based on their preferences.

Digital disruption



Customer-induced



Innovation-induced



Ecosystem-induced



Technology-induced

Potential changes and shifts are leading to a faster deployment of a digital transformation strategy that is likely to be induced by several causes, such as customer behaviour and expectations, new economic realities, societal shifts, ecosystem/industry disruption.

In practice, end-to-end customer experience optimisation, operational flexibility and innovation are considered key drivers and goals of digital transformation, which along with development of new revenue sources and information-powered ecosystems of value helps in fostering business model transformations.

Introduction of more driver-assisted technologies and emergence of autonomous vehicles along with new business models reflect a changing mindset about vehicle ownership. Automation, specifically hyper intelligent automation (HIA), is likely to become key for automotive enterprises to ensure business continuity, as COVID-19's domino effect continues unabated across organisations and verticals.

Moreover, a successful enabler for OEMs to sustain in the digital age would be with predictive intelligence. As part of this, OEMs are collaborating to help fleet managers, vehicle dealers and repair shops to predict vehicle issues in advance using IoT and AI. The human machine interfaces (HMI)s would provide smart virtual assistants to help drivers and riders interact with the vehicles and other service providers.

Tech-enabled

Technologies leveraged by OEMs



Additive manufacturing or 3D printing technology

Helps in mass production, even the most complex parts, without the need to build manufacturing tools.



Immersive entertainment

Uses navigational data of a travel route, time and integrates with the vehicle data. AR and VR can make vehicles a hub for gaming, viewing and shopping.



Blockchain technology

Helps in finding multiple applications in the automotive sector. It includes sharing vehicle data over a secure network for connectivity and shared mobility solutions, such as ride-hailing, urban transportation and deliveries.



IoT

Enables secure communication between vehicles as well as vehicles and infrastructure components. It could be used to improve road safety, reduce traffic congestion and reduction in pollution and energy expenditure with better fleet management.



ML and AI

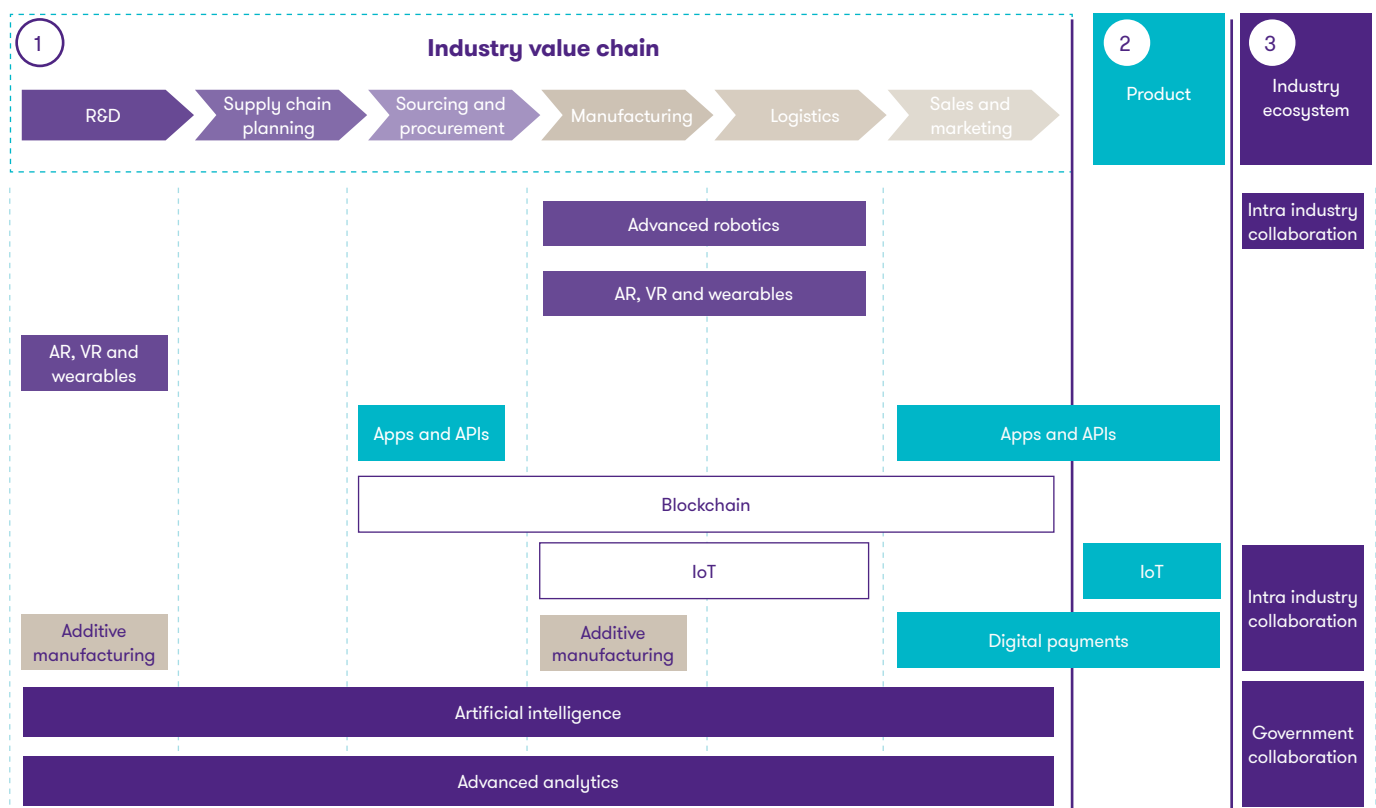
Aggregates, intelligently transforms and contextually presents product and process data from manufacturing lines throughout supply chains.

Complete value chain solutions

Overall, the new demands on the sector calls for new thinking and skills. Auto dealers are highly motivated to adopt new technologies with hyper-targeted digital marketing. Services, such as at-home vehicle pick-up and delivery, are also looped into the seamless, hands-off automotive shopping experience. Thus, the amount of dealerships offering delivery is rising dramatically. Moreover, many start-ups are providing independent doorstep vehicle service and repairs with wide network of garages, doorstep inspection and servicing. For instance, doorstep vehicle services start-up Pitstop has expanded its garage and doorstep service network and built an integrated retail supply chain network for the spares business. It offers a complete value chain solution for vehicle owners.

With this rapidly transforming sector, the next decade seems crucial for OEMs and dealers to capitalise on digital transformation.

Applicability of key digital technologies in the automobile industry



Based on the advancement levels of key technologies and their use cases in the automotive industry, the digital transformation roadmap has been defined across three categories: automotive value chain, product and industry ecosystem. (see figure above)

Our view

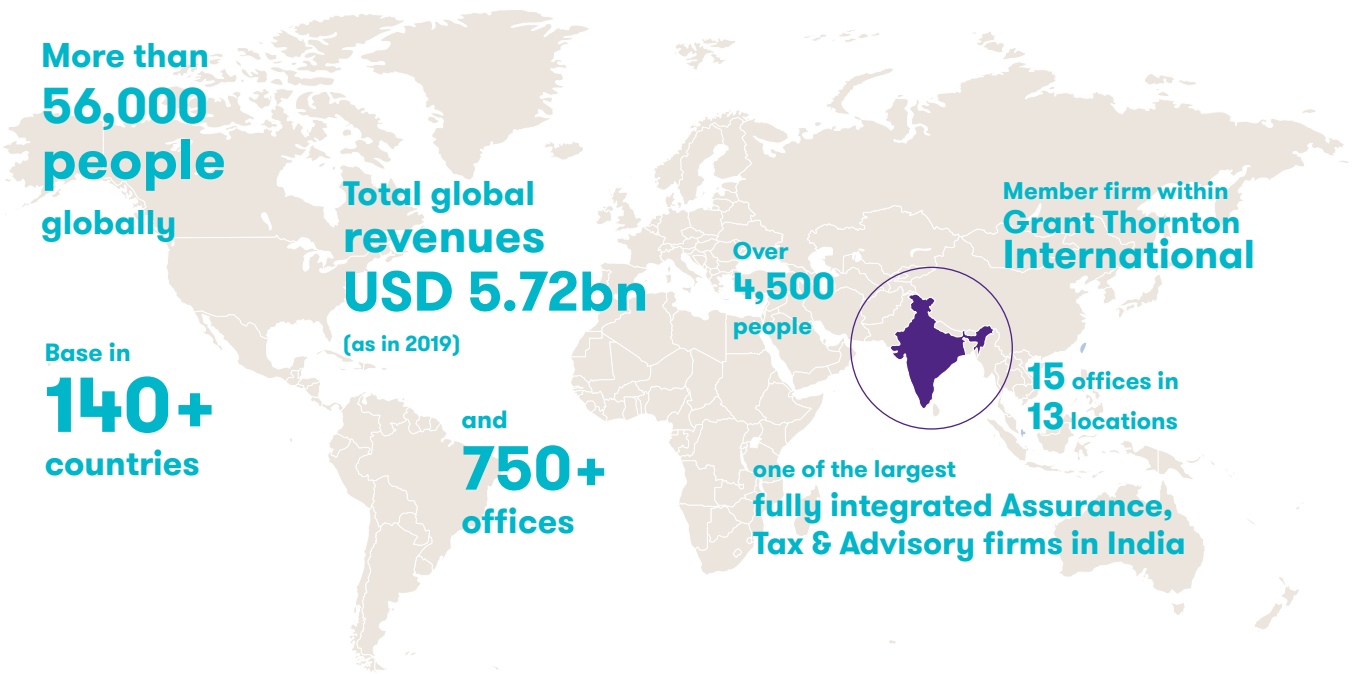
The prominence of automation is evident in the modern business environment and the operational setbacks induced by COVID-19 have only strengthened its case. According to Grant Thornton's International Business Report, despite a slowdown, at 68%, India ranks number one when it comes to businesses making investments in technological advancements. All the leading automation/RPA platforms have come up with new innovative use cases to support the fight against the pandemic. Traditional methods and processes have buckled under the demands of the new era. The hyper intelligent digital space has emerged at the top of the boardroom agenda. To keep competing, OEMs will have to become more intelligent in their structure and operations. Internal hierarchies and organisational silos will become less important as seamless collaboration and free flow of information will take the limelight.

Start-ups and emerging companies are developing solutions that would enable vehicles to securely communicate and transact over a network. On the one hand, while a more intelligent enterprise is a prerequisite to successful product development in today's market; the other prerequisite is the ability to find, attract and retain the right talent.

The automotive sector is set to embrace the disruption caused by the hyper intelligent digital technologies to transform the overall value chain. However, OEMs will have to maintain the highest standards of safety and quality as well as deal with pressure to maintain manufacturing efficiency, workforce productivity and profitability.



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