

TRENDS THAT WILL DRIVE THE AUTOMOTIVE SECTOR IN 2021 AND BEYOND



INTRODUCTION

The automotive industry has always been a dynamic ecosystem, with high capital expenditures (CapEx), complex supplier relations, environment, and safety regulations, and rapidly evolving consumer preferences. Over the past decade, the ecosystem has become even more complex with the entry of new participants with completely different product life cycles and client channels. Added to this came the challenges posed by the 2020 pandemic, with supply disruptions and consumers freezing their spend on big ticket items. The global auto industry is estimated to have experienced a 20% decline in sales in 2020.

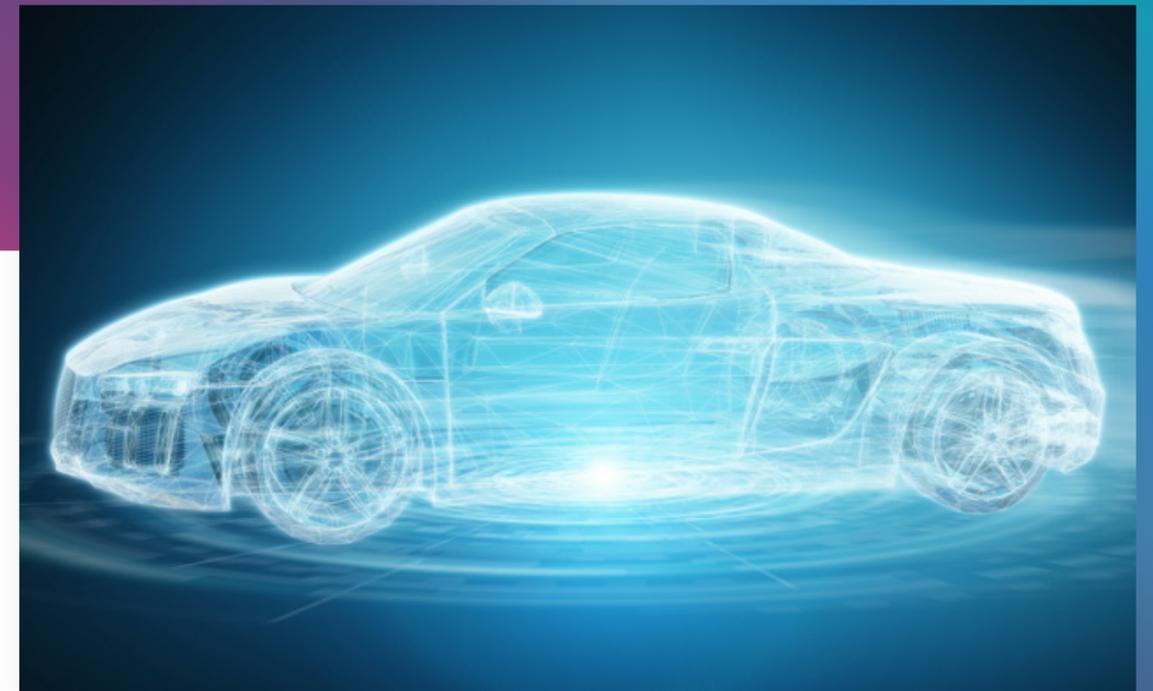
Even after the world emerges from the pandemic, it will not be business as usual for the auto industry. Automakers are likely to rely increasingly on innovation for higher efficiency and growth. The auto industry also needs to be primed for the coronavirus-led shift in client behaviours. For example, people may increasingly depend on their own vehicles to commute without the risk of infection.

The auto industry was already changing with the adoption of cutting-edge technology. This industry is now in the throes of profound transformation. The forces of digitization, increasing automation, and connectivity have led to distinctive trends that are likely to drive growth in the automotive sector in 2021 and beyond.

Top Automotive Trends in 2021

The following trends are likely to reshape the automotive industry and create the new rules for success:

- Strategic Partnerships to Drive the Automotive Industry
- Autonomous Vehicles
- Shared Mobility
- Connectivity
- Electrification



Strategic Partnerships to Drive the Automotive Industry

Automotive companies are increasingly engaging in strategic partnerships to create and leverage growth opportunities with lower risks.

The automotive industry was booming till the pandemic hit the world. By collaborating with providers of emerging technologies, automakers forayed into the digital world to lower production costs and generate new and recurring revenue streams.

By 2019, 29% automakers had already partnered with digital disruptors. This figure was expected to spike to 41% by 2021.

With the seemingly never-ending spread of COVID-19 through 2020, and expectations of the pandemic persisting in 2021, the entire work environment has changed. Following the opening up of economies, various safety measures have been put in place, including socially distanced factory floors, sanitation of all equipment and surfaces before the start of each shift and more. This has led to a loss in productivity, with a consequent rise in costs for automobile manufacturers.

To counter the challenges presented by the pandemic, collaboration across the automotive ecosystem is emerging as an effective strategy to reduce development costs and financial risks associated with failed investments.

Such collaboration will also help digital transformation and foster joint innovation. Among the recent examples of partnerships is the collaboration between Daimler AG and Infosys, which is expected to propel the German car maker in its digital journey, strengthening its hybrid cloud infrastructure and transforming its operating model across workplace services, data centers, networks, and service desks.

Automotive companies are collaborating with offshore firms to outsource their digital transformation and for creating innovative technological solutions. This model allows automotive companies to gain a competitive edge by significantly lowering the cost and increasing the efficiency of technology and digital adoption.

Apart from the traditional technology hubs like India and China, companies are outsourcing their software needs to companies in East Europe. In this region, countries like Romania, Poland and Ukraine have evolved into a multibillion-dollar software outsourcing hubs.



The Future of the Automotive Value Chain

“Cooperating on the basis of joint platforms can be the foundation for new revenue streams. Value creation through data and analytics is one of the key elements in supporting new service offerings for suppliers.”

- Deloitte



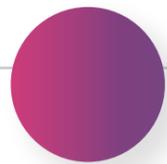
Get Ready for the Post COVID-19 World
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Autonomous Vehicles

Driverless cars have evolved from being a sci-fi fantasy to a reality, although their use in individual cars is curtailed by financial viability, security, safety, ethical and legal aspects.

Advances in artificial intelligence (AI) and connected technologies have brought the dream of autonomous vehicles (AV) much closer to reality than ever before. While they cannot be introduced on to the streets yet, we expect that to happen in the near future. AVs could offer a wide range of benefits for businesses, including easing last-mile delivery, decreasing road accidents due to driver negligence or fatigue, and reducing downtime. Government bodies have also been looking at how the use of autonomous vehicles could improve public transport.

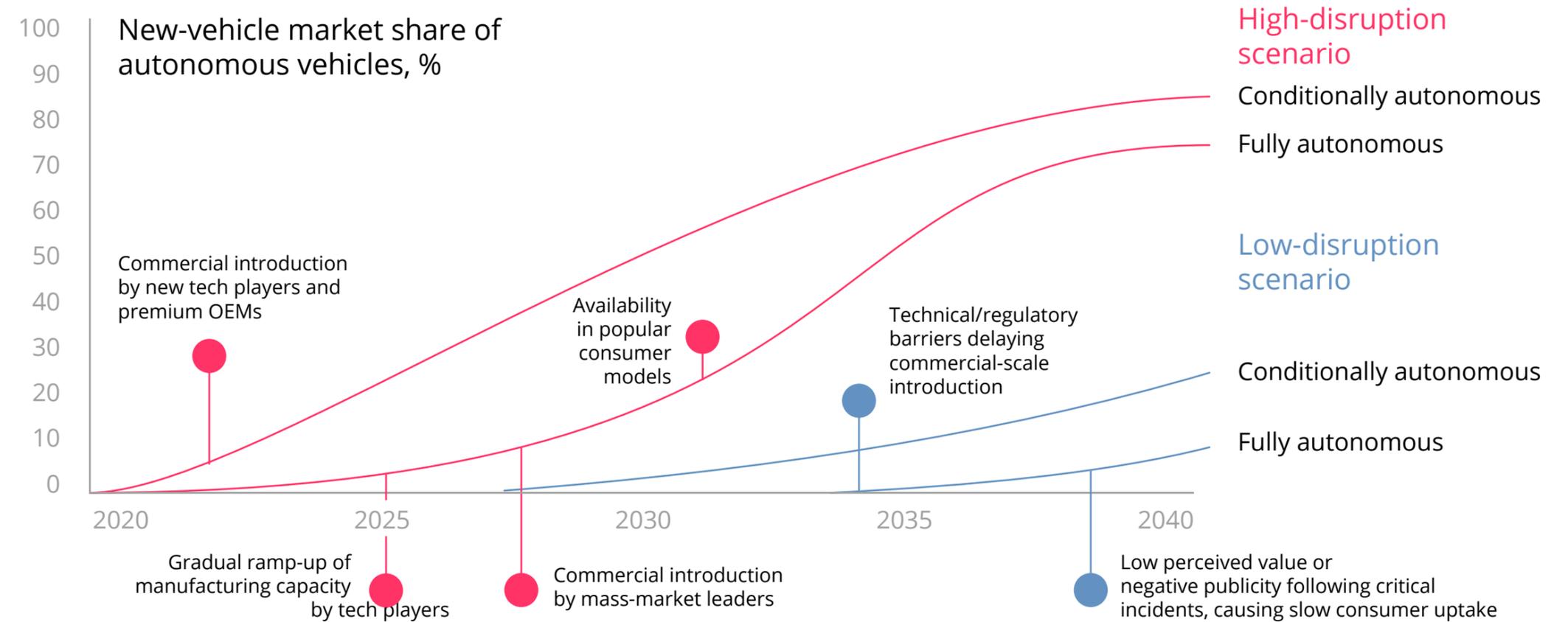


AVs equipped with advanced recognition technologies, such as AI-enhanced computer vision can identify obstacles along the route.



How many new cars may be fully autonomous by 2030?

There has been some concern around the loss of life in case an autonomous vehicle makes a mistake. However, companies investing in autonomous cars have emphasized that they are safer, as they eliminate human error, which is the cause of most traffic accidents.



Factors in disruption scenarios

Regulatory challenges
 Safe, reliable technical solutions
 Consumer acceptance, willingness to pay

High disruption

Fast
 Comprehensive
 Enthusiastic

Low disruption

Gradual
 Incomplete
 Limited

Source: McKinsey & Company

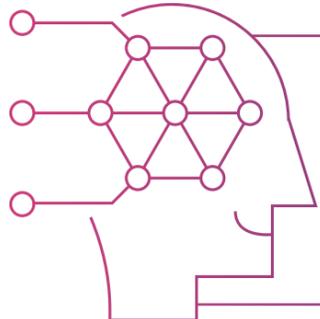
Consumers Trust Automated Vehicles



While the cost of manufacturing autonomous vehicles has so far made them too expensive for individual ownership, AVs are increasingly finding commercial uses. The COVID-19 scenario provides the opportunity to try new technologies, which will accelerate their deployment.

China has already made a strong foray into AVs, providing a “touchless” experience to reduce the risk of infection. For instance, eCommerce giant JD.com launched autonomous logistic vehicles to deliver goods. One such vehicle can deliver up to 24 small packages in a single trip. Another Chinese online shopping platform Meituan has piloted AVs for delivery that can travel up to 100 km carrying 100 kg of goods.

The technology might also be a solution for shared mobility, as in the form of “robo-taxis.” Companies will need to ensure that hygiene concerns are addressed with these vehicles being adequately sanitized between riders.



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Shared Mobility

Social distancing norms brought by the pandemic created excellent opportunities for shared mobility.

With the growth of connected vehicles and self-driving taxis and shuttles, there have been tremendous advancements in shared mobility, leading to new entrants and new business models into the automotive industry. The concept of mobility-as-a-service (MaaS) has gained traction as an alternative to traditional vehicle ownership. This has the dual advantage of cost saving for people and lower pollution from vehicles. Apart from offering a sustainable alternative to short-distance travel, MaaS helps regulate and lower traffic flows in highly crowded cities.

The landscape of shared mobility is fast evolving. Platforms have mushroomed offering a range of shared mobility solutions, including station-based car sharing, docked and dockless e-scooters, advanced shuttle services, and even peer-to-peer shared mobility. Numerous third-party data aggregators have made it easier to combine mobility data across modes of transportation.



Did You Know?

The shared mobility market exceeds \$60 billion across the three largest markets - China, Europe, and the US

Shared mobility presents immense potential with COVID-19 concerns, as seen in the Asian markets. With people being concerned in using public transportation (like buses, subways and taxis), there is growing dependence on shared micro-mobility solutions (e-bikes and e-scooters) and keyless rental services.

The shared mobility market may evolve through 2030 in one of two ways - maintaining a status quo path or through transformation, says a McKinsey report published in July 22 . In the status quo mode, the market will grow steadily, driven by convenience and economics, by providing cost-efficient alternatives to taxis and public transportation. In the transformation mode, in which the market will evolve into a completely different market, automakers will begin providing innovative solutions, driven by government initiatives to introduce autonomous vehicles.



Connectivity

While connected cars have become the new normal in the automotive industry, their applications and benefits are expected to grow exponentially in the near future.

A connected car is laden with sensors that connect to and communicate with any internet enabled device, like smartphones, laptops, tablets and entertainment systems. While these connected devices form the interface, the data sent from the car's various sensors is processed in cloud-based platforms. The application of IoT (Internet of Things) in the automotive industry offers huge potential. We have already experienced technology-connected automobiles with GPS and navigation capabilities. Now, the opportunity lies in connecting vehicles in two ways:

- Communication between vehicles or traffic management infrastructure
- Communication between occupants of a vehicle and the external world

Connectivity could help not only in safer driving experiences, but also with data regarding traffic conditions, public transport, parking, and even environmental issues. The use of connectivity to help gathering useful data is likely to be a key trend in 2021 and beyond.



By 2030, 50% of a vehicle's total costs are likely to be associated with its electronics components.



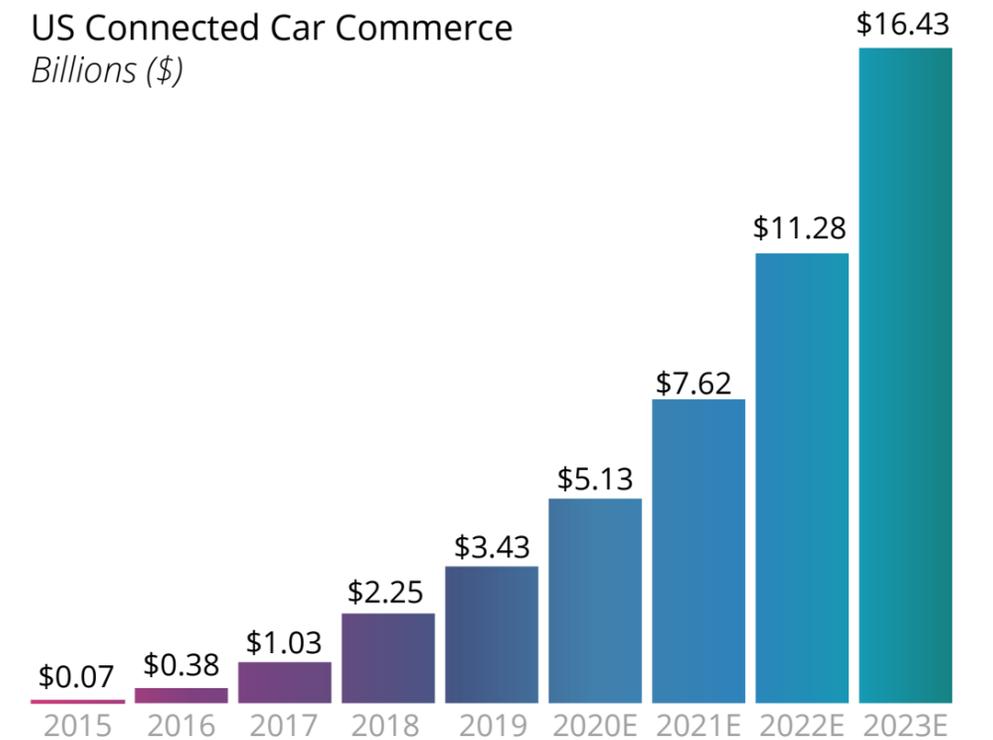
The push for connectivity is also likely to come from the increasingly stringent government regulations across the world, associated with issues such as safety and reduction of greenhouse emissions. For enhanced safety, automobile manufacturers are already working on developing features like lane departure warning systems and automated emergency braking.

In addition, unique digital identities of connected vehicles can help identify and distinguish them from the other automobiles on the network. This can help track vehicle data for various purposes, such as predictive maintenance, driver safety, insurance, and fleet management.

The experience of a connected car user depends on the quality of wireless connectivity. The launch of 5G is expected to enhance user experience, while increasing the safety and efficiency of connected cars.

According to the 5G Automotive Association, 68% of accidents can be avoided with 5G technology.

US Connected Car Commerce
Billions (\$)

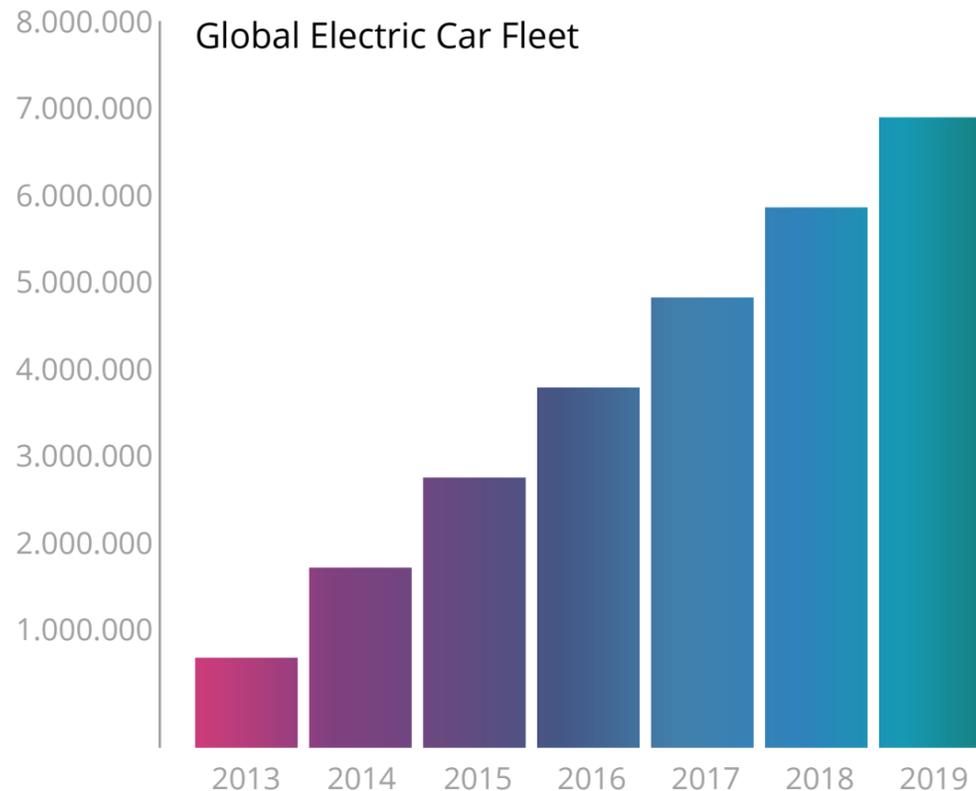


Source: EV Volumes

Electrification

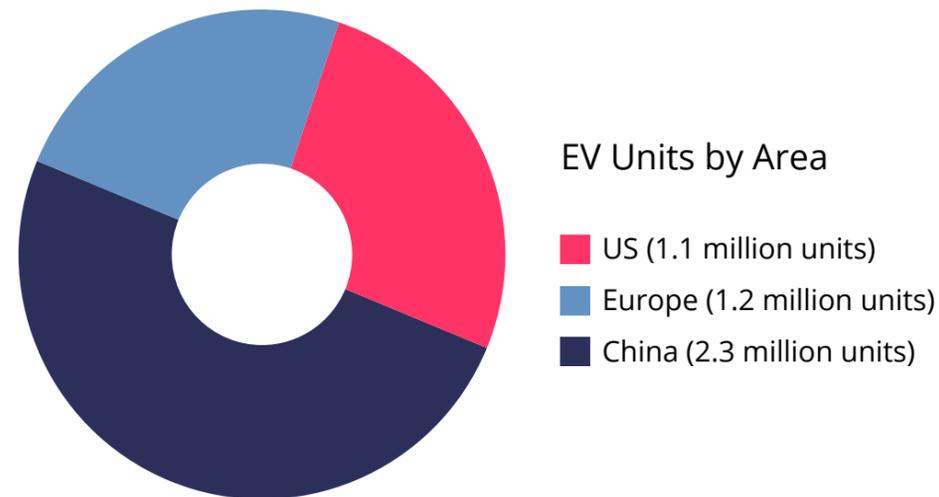
The market for electric vehicles is booming, waiting for its ecosystem to catch up.

The global sales of plug-in electric vehicles (EVs) stood at 7.2 million in 2019, with China representing more than 45% of the total market. The EV revolution has gone beyond passenger cars, to shared electric scooters (e-scooters), e-bikes, and electric mopeds, which are now available in over 50 countries worldwide. The EV ecosystem is becoming “smarter”, with advanced technologies for locating charging stations, equipment, and powertrain parts as well as powerful fleet management software for passengers and goods mobility solutions.

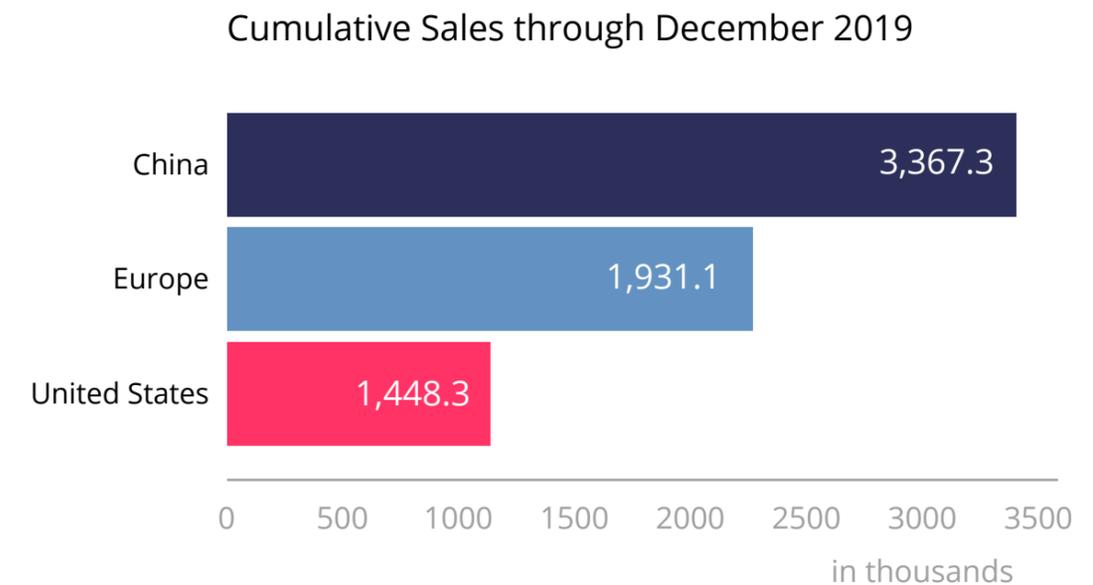


In 2020, Tesla grabbed the headlines numerous times. With over 260,000 Model 3s sold in the first ten months, Tesla had captured an 18% share of the total global EV market. The world’s largest automobile manufacturer, Volkswagen, came a distant second, with only 30% of Tesla's volumes.

Apart from China, Europe has come to the forefront of promoting emissions-free mobility and EVs. In July 2020, the EU exceeded 200,000 monthly sales of EVs for the first time.



Source: Global EV Outlook 2020



The adoption of EVs is expected to spike in 2021 and beyond, propelled by:

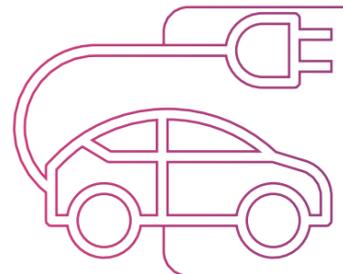
Government regulations

More stringent emission laws and the move to ban gas-powered vehicles. The Biden administration seeks to ban new sales of vehicles with internal combustion engines by 2035.

Consumer preference

The pandemic heightened people's environmental consciousness, encouraging consumers to be more committed to changing their own behavior to support sustainability.

EVs present a viable solution to the environmental problems and to the high dependence on fossil energy faced by most nations. There is, however, the concern around power optimization, since too many plug-in EVs connecting simultaneously to the power grid may cause power fluctuations or even outages. Automakers are depending on sophisticated algorithms to coordinate power transmission and increase safety.



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Did You Know?

Chinese company Nio has launched battery as a service (BaaS). People can buy a Nio car without the battery, saving over \$10,000. They can then subscribe for using a battery for \$142 per month.



CONCLUSION

What the COVID-19 crisis taught every company in every industry is that technology could be leveraged to increase operational efficiency. The global automotive software market, which was valued at \$18.5 billion in 2019, is projected to reach \$43.5 billion by 2027, representing a CAGR of 14.5% between 2020 and 2027.

The pandemic outbreak caused an urgent need for automotive companies to re-engineer themselves, with massive R&D investments flowing into autonomous and EV technologies. What is needed to sustain success in this highly dynamic environment is a strategic approach to innovation and an astute focus on operational efficiency. Automakers, auto OEMs and software companies focusing on the automotive segment need to prepare themselves for these trends and evaluate ways to leverage technology to position themselves for the future.



FORTECH FOR TECHNOLOGY THAT IS SCALABLE AND SECURE

Fortech has wide experience in empowering automobile companies to innovate and achieve a competitive edge. The company supports business transformation, enabling automakers to leverage their complete innovation potential. Fortech offers customized software development services that are created by agile teams with deep technical expertise and are powered by innovation and modern technologies. For over 17 years, Fortech has served global clients, with a focus on Western Europe and the US.

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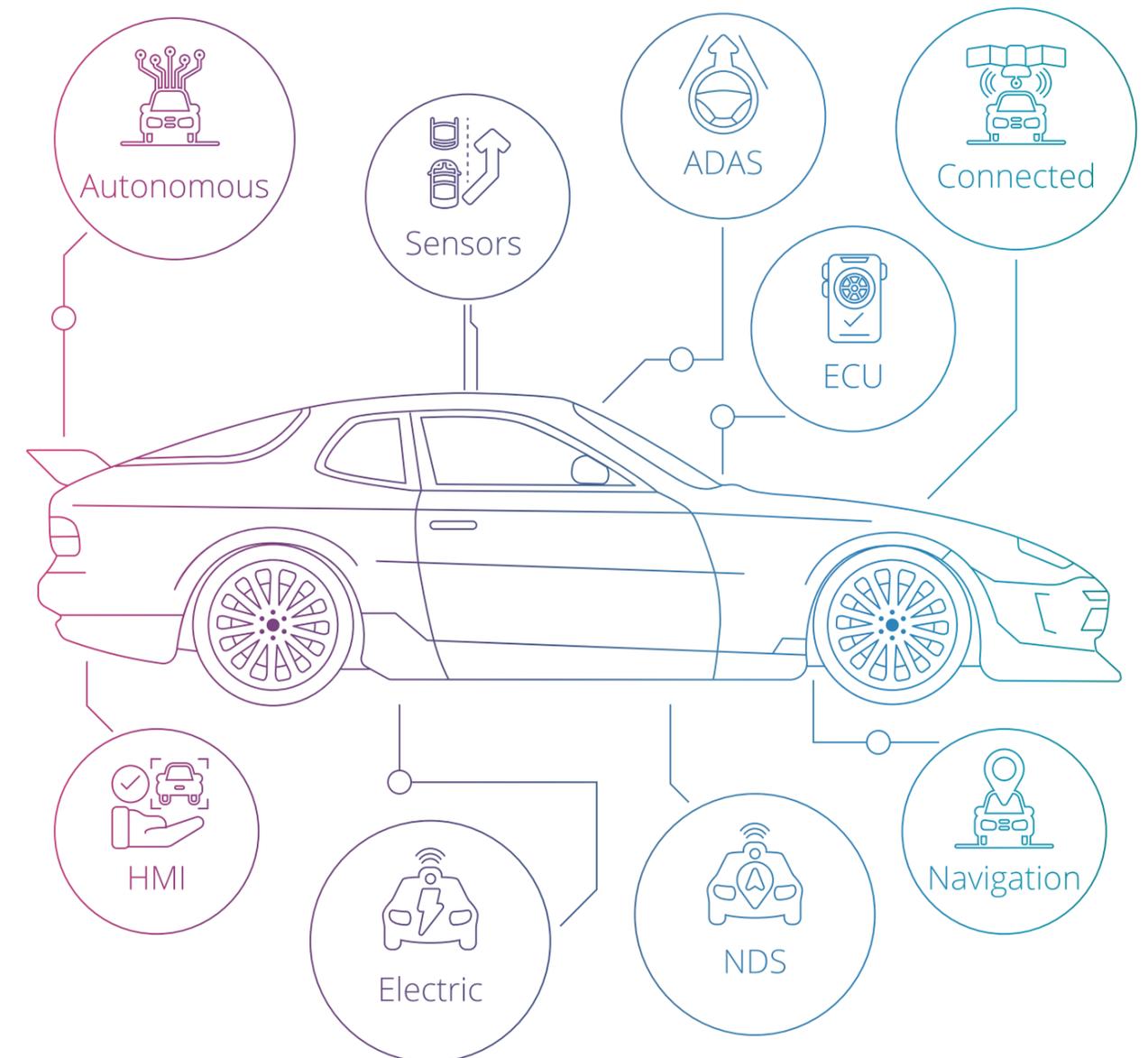
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After completing his master's degree in Computer Science and working for around 5 years as a software specialist, Augustin joined Fortech in May 2011. Given his technical know-how and management expertise, Augustin has been a transformation enabler for several companies.

He has been responsible for long-lasting partnerships with many of Fortech's strategic clients. Augustin is a trusted advisor, focused on delivering client success by translating business requirements into effective technical solutions.



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Maria Gavriloae is an accomplished and energetic engineer, who is passionate about taking on new challenges. She is highly motivated and has strong organizational abilities.

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About Fortech

Fortech is a leading Romanian software services company. Despite being among the largest IT service providers in the CEE region, Fortech has repeatedly been included in Deloitte's rankings of the fastest-growing technology companies. It has also been recognized by acclaimed companies like EY and Forbes.

Fortech is a long-term partner for OEM's, Tier 1 companies, and automotive industry stakeholders leading the way in the market and reshaping the future of mobility. We help our partners navigate the new requirements of the industry – from intuitive infotainment and self-driving abilities to electrification and advanced driver-assistance systems (ADAS).

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