

How the automotive industry is accelerating out of the turn

While the early effects of the COVID-19 crisis presented a dip in the road, car sales and production are roaring back. Trends that have been long in coming point to significant changes ahead.

by Russell Hensley, Inga Maurer, and Asutosh Padhi

The automotive industry pumped the brakes hard in the early months of the global COVID-19 pandemic. The effects began in China, where sales plunged 71 percent in February 2020; by April, sales had dropped 47 percent in the United States and dived 80 percent in Europe. But the industry's engines never stopped running, and cars and trucks have come roaring back. From the third quarter of 2020 through the first quarter of 2021, automakers around the world have seen rapid (and in some cases, record) levels of production. As with multiple industries across geographic regions, the pandemic has brought a great acceleration of the trends across the mobility value chain that were building before it occurred.

Consider car and truck buying. Even before the pandemic, consumers could explore vehicles online to compare prices; experience virtual, 360-degree views of the vehicle; and visit carmaker websites to “build their own cars.” Those features were available even as in many countries, including much of the United States, the actual sales process itself was required to take place at car dealerships. During the pandemic, when dealerships around the world scrambled to meet evolving in-person restrictions, the technology proved invaluable. Some dealers closed their sales floors to the public and engaged with customers over the phone, via videoconference, or by special appointment only. Potential buyers could also take advantage of sites and apps that helped them explore and arrange related services, such as financing and insurance, remotely and virtually as part of the car-buying process.

Even so, as the pandemic-related restrictions have eased in some areas, customers have flocked back to dealership floors. Many people still want to interact with a dealer and to see, feel, sit in, and test-drive their vehicles before buying them. For now, different platforms, both physical and virtual, are existing side by side, simultaneously complementing and competing with one another. Tesla in particular, along with other fast movers such as Porsche, Volkswagen, and Volvo, is at the vanguard of selling by means other than a dealer showroom. Other automakers around the world, even those with strong, legacy dealer networks, are experimenting with new dealer- or manufacturer-led models for selling and servicing vehicles. Still, to paraphrase Mark Twain, reports on the death of the dealership model have—so far—been greatly exaggerated.

Similar dynamics of legacy and digital are playing out in vehicle manufacturing as well. Supply chains—despite concerns that they could be radically reconstructed not just as a result of COVID-19 but because of geopolitical tensions, microchip shortages, and even the blockage of the Suez Canal—are holding, though pressures suggest that change will come. For example, some vehicle lines that had been operating on 50 to 60 days' supply are down to only ten to 15 days' supply. Those supply pressures aren't (yet) manifesting in notably higher prices for the consumer; rather, the squeeze is being felt across the supply chain, with customers getting more car for less money than they did ten or even five years ago.

As with car buying, digital is driving greater transparency in manufacturing. Until recently, OEMs and tier-one suppliers had only limited insight into the processes and inventories of suppliers at lower tiers, including raw-material suppliers at tier four. Now, components are more routinely tracked across the supply chain. This, too, is an acceleration of a trend that began well in advance of the COVID-19 pandemic. In the case of Toyota, dramatic improvements in supply-chain visibility trace back to the Fukushima disaster in 2011, when the company discovered (and then rapidly adjusted for) constraints in key parts and materials that could be traced to the disaster's effects on the production of microchips by lower-tiered suppliers. A decade later, along the automotive supply chain, the trend toward higher transparency is accelerating for OEMs and tier-one suppliers alike.

In fact, for the industry at large, we expect that the core autonomous, connectivity, electrification, and smart, shared-mobility (ACES) trends will continue to accelerate—particularly in the case of electrification. Since 2010, companies and funds outside the traditional automotive industry have invested more than \$300 billion in ACES technologies, believing in an attractive future of mobility. During the height of the pandemic in 2020, investments in smart and shared mobility (such as e-hailing, micromobility, and car sharing) fell significantly from the second quarter to the third quarter, and investments in autonomous driving plunged even more sharply. But investments in connectivity (which includes sectors such as infotainment and cybersecurity) actually increased, and investments in electrification barely dipped at all—and then rose dramatically from the third quarter to the fourth quarter of 2020.

That suggests that mobility will continue to become more digital, more connected, and especially more electric. Consumers who factored sustainability into their buying

decisions helped electric-vehicle sales increase by 43 percent in 2020. Since changes in mobility require changes in capabilities, it's also clear that automakers will have to adjust their organizations, such as by ramping up the number of software engineers relative to mechanical engineers, significantly. In all, automakers may need to reskill up to one-quarter of their current workforces. These trends will continue to accelerate as the industry moves further from the COVID-19 crisis. Q

Russell Hensley is a partner in McKinsey's Detroit office; **Inga Maurer** is a partner in the Chicago office, where **Asutosh Padhi** is a senior partner.

Copyright © 2021 McKinsey & Company. All rights reserved.