

McKinsey Center for Future Mobility

The unexpected trip: The future of mobility in India beyond COVID-19

The coronavirus has introduced unexpected complications within India's automotive and mobility sectors. For OEMs and other stakeholders, it is time to think about new and innovative business models.

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COVID-19 has presented India with an unprecedented economic, humanitarian, and healthcare challenge. The lockdown measures have helped contain the spread of the coronavirus but exacted an immense economic toll, with economists now predicting that the country's gross domestic product will shrink between 1.5 percent and 5 percent during the 2021 fiscal year.¹

On the business side, India's automotive and mobility sectors are among the hardest hit. Following the pattern seen in countries where COVID-19 spread earlier, lockdown measures and other restrictions have limited travel and left many consumers unable or unwilling to purchase vehicles. Adding to the pain, the coronavirus took hold just as automotive OEMs and mobility players were attempting to recover from a precipitous drop in annual sales in 2019.

When looking beyond the immediate challenges, however, the picture is not as bleak. Over the long term, as COVID-19 is controlled and India enters the next normal, we expect that automotive and mobility players will return to their former strength. Although many challenges lie ahead, the coronavirus could accelerate some beneficial trends. For instance, electrification will increase in select segments, such as two-wheel (2W) and three-wheel (3W) vehicles, and shared mobility could also increase because of the growth of various use cases, such as last-mile delivery, ride hailing, and rentals. As they prepare for the future, a solid understanding of the changed landscape can help OEMs and other stakeholders update their strategies for the Indian market.

The short-term picture: Tough times for automotive OEMs and mobility players

The Indian automotive industry has been slowing since the third quarter of fiscal year 2018, with a liquidity crunch, higher acquisition costs, and weaker customer sentiment substantially contributing to the downturn. Compared to fiscal year 2019, sales of passenger vehicles (PVs) and 2Ws fell 18 percent in 2020; commercial vehicles (CVs) had an even greater decline of 29 percent.²

The spread of COVID-19 then exacerbated the situation to an extent that no one could have predicted. In March 2020, when India's government instituted a lockdown, domestic automotive sales were 45 percent lower than they were in March 2019. The sharpest decrease occurred with CVs, where year-over-year (YoY) sales fell 88 percent. April and May 2020 brought even worse news, with YoY sales for those months more than 90 percent lower across all vehicle segments.

A similar story is unfolding within India's shared-mobility sector. In the ride-hailing segment, which experienced high double-digit growth in 2018, the number of rides per day only grew minimally in first six months of 2019. The first difficulties arose from changing regulations at the state level and a shortage of driver partners. More recently, COVID-19 has caused usage of ride sharing and other services to plummet.

Over the near term, both OEMs and mobility players will continue to face challenges in India. Based on trends observed so far, automotive sales for fiscal year 2021 could decline from 10 to 15 percent from fiscal year 2020 for PVs, CVs, 2Ws, and 3Ws (Exhibit 1). Likewise, shared mobility modes, especially those involving ride hailing and short-distance rentals, will continue to see lower ridership until a vaccine is developed. However, vehicles for last-mile delivery could see growth due to rising activity in e-commerce and food delivery.

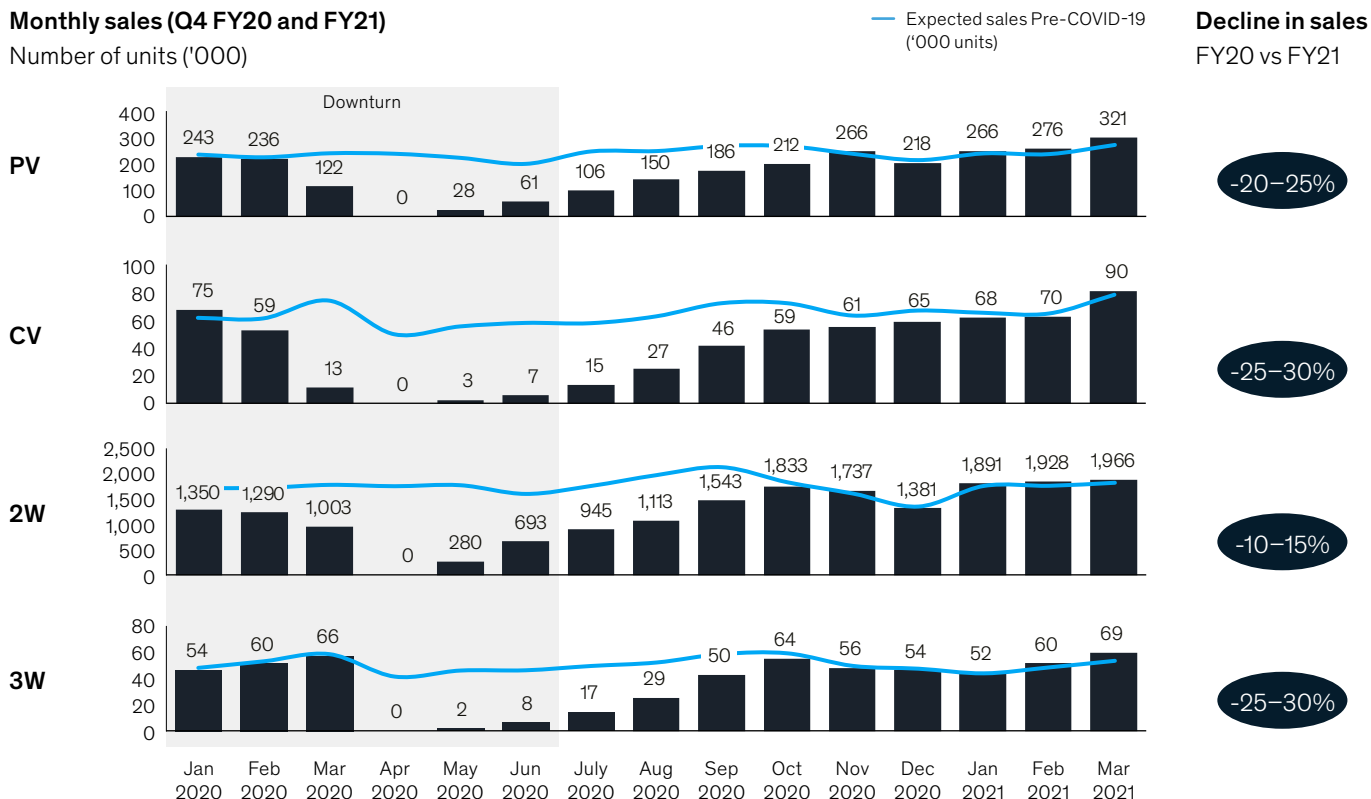
¹ World Economic Outlook, IMF; Fitch Rating; Asian Development Bank; Reserve Bank of India (RBI).

² Fiscal year 2019 covered the months of April 2018 through March 2019; fiscal year 2020 included April 2019 through March 2020. Sales data are from the Society of Indian Automobile Manufacturers (SIAM).

Sales across vehicle categories are expected to underperform in the first half of 2021.

Monthly sales (Q4 FY20 and FY21)

Number of units ('000)



¹ Based on monthly sales estimates; volumes estimated based on the average monthly sales from SIAM in 2015–17; updated based on June sales data for PVs and 2Ws, and April/May data for CVs and 3Ws
Source: Expert interviews; SIAM, IHS Markit; McKinsey analysis

The long-term view: OEMs and mobility players regain strength

Despite the tough market for OEMs and mobility players in India, the slowdown may be short lived. Several beneficial trends, including the growth of electric vehicles (EVs), could accelerate as COVID-19 prompts consumers to consider new mobility options and as the government takes action to stimulate the local economy.

Adoption of small-format mobility could accelerate, especially for EV options

Some of the most exciting developments relate to small-format mobility, which includes 2Ws and 3Ws. Sales of entry-level scooters and motorcycles are already seeing a strong bounce back, with leading 2W manufacturers reporting a fourfold increase in sales between May and June 2020. Much of the demand comes from migrants, originally from rural areas, who work in large cities. The lockdown has prompted many of these migrants to move back to their hometowns in the countryside, which is driving

demand for affordable mobility options. For the 3W market, prospects are also strong, since riders may perceive personal taxis as a safer transportation mode than shared-mobility options, where risk of infection is higher. For 2Ws, and to a lesser extent 3Ws, rising demand for last-mile delivery could be a benefit, since they are the most efficient means of transportation for such trips.

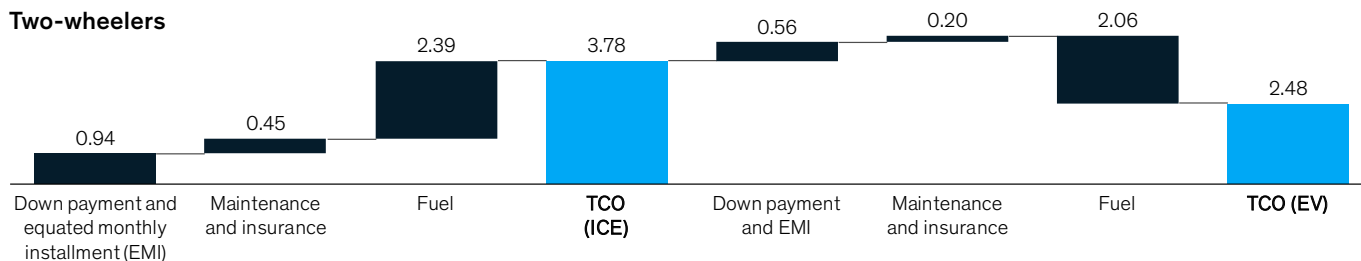
Within the small-format segment, several enablers are already encouraging growth. For instance, small-format EVs achieve faster parity with traditional internal combustion engine (ICE) vehicles, as their total cost of ownership (TCO) is lower, given their lower fuel and maintenance costs (Exhibit 2). They are also less dependent on charging infrastructure, since their power requirements are lower, and they are more likely to come in models that allow battery swapping. Both of these features may alleviate concerns about vehicle range.

Small-format e-mobility offers significant cost advantages over internal combustion engine (ICE) vehicles.

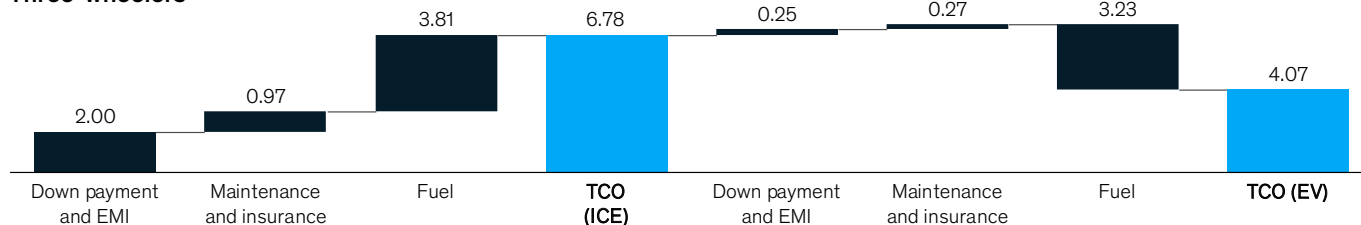
Total cost of ownership (TCO) comparison of electric vehicles (EVs) versus ICE vehicles¹

Cost per 100 km (USD)

Two-wheelers



Three-wheelers



¹ Assumptions: Life of vehicle = 7 years; debt share = 70%; loan tenure = 4 yrs for 2Ws, 5 yrs for 3Ws; daily distance = 60 to 75 km for 2Ws, 125 to 150 km for 3Ws; mileage = 40 km for 2W EVs, 45 km for petrol 2Ws, 17 km for 3W EVs, 30 km for diesel 3Ws.

Source: Expert interviews; McKinsey analysis

Other developments that could help the small-format e-mobility market include the following:

- **Incentives from India's central and state governments to encourage EVs:** The Faster Adoption and Manufacturing of Hybrid and EV (FAME) program, which was first implemented in 2015 and updated in 2019, provides consumers and domestic companies with various incentives. For instance, in phase two of FAME, the government announced an outlay of \$1.4 billion through 2022.³ In addition to subsidizing EV purchases and essential infrastructure development, the funding will provide local manufacturers with incentives to produce EVs.
- **Lower battery pack prices.** According to McKinsey's battery cost model, the price of a battery pack in India could fall to \$110 to \$120 by 2030,⁴ making EVs much more affordable. A combination of scale, technology, and market maturity will drive this decline.

- **Increased consumer readiness.** Across use cases, more consumers must be willing to opt for EVs over ICE vehicles. According to McKinsey's 2019 Autonomous, Connectivity, Electrification, and Smart mobility (ACES) survey, one major roadblock is the perceived safety of EVs. This was the top concern after TCO and the availability of charging infrastructure. As more EVs hit the road, and as consumers become more familiar with them, their comfort level may increase.

Our models suggest that demand for small-format e-mobility options could rise substantially over the next decade (Exhibit 3). For 2W e-vehicles, sales could reach between 8 and 9 million by 2030, when they would account for about 35 to 40 percent of all 2W vehicles sold. For 3W e-vehicles, about 500,000 to 600,000 could be sold in 2030, representing about 60 to 65 percent of purchases in that class.

³ Department of Heavy Industry, Government of India. (Conversion rate: INR 70 per USD.)

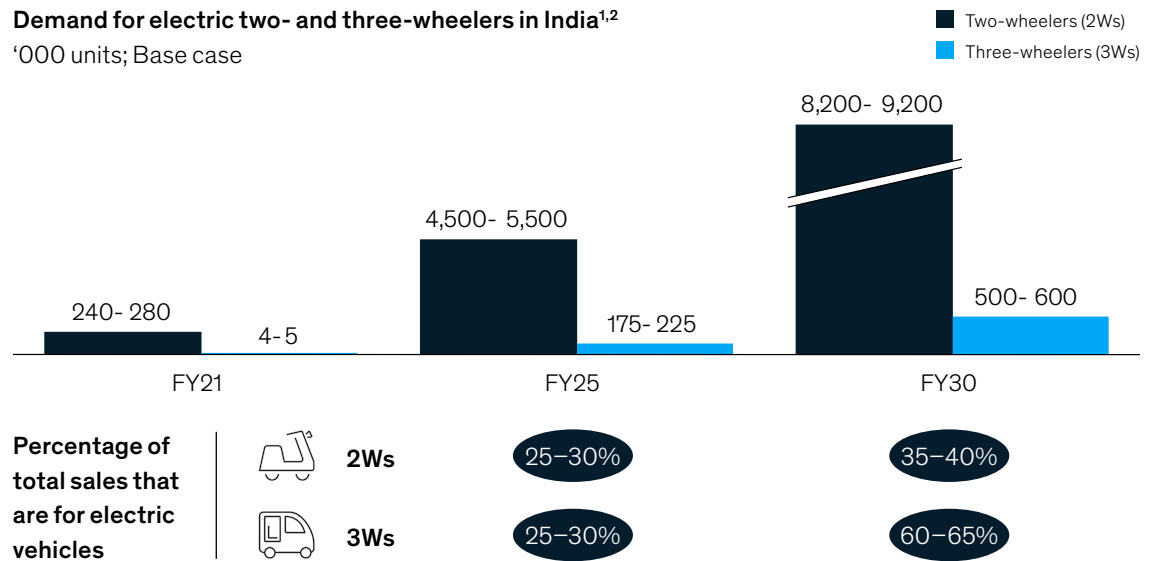
⁴ Size of the battery plant is 5 GWh (Progressive case).

Exhibit 3

Demand for small format e-mobility could rise to about 9 million units by fiscal year 2030.

Demand for electric two- and three-wheelers in India^{1,2}

'000 units; Base case



¹ Includes direct sales and lease/rent numbers.

² Based on TCO parity analysis (switch rate from ICE to EV) and market maturity adoption curve (availability of charging infrastructure, finance availability, and range evolution).

Source: Expert interviews; McKinsey analysis.

Rising demand for shared mobility

Similar to e-mobility, demand for shared mobility is expected to increase in the next decade, largely driven by three use cases (Exhibit 4). For 2W vehicles, last-mile delivery for food, grocery, and e-commerce is the major demand driver. Other popular 2W use cases include ride hailing and self-

driving rentals, with YoY growth of 40 to 50 percent and 100 percent, respectively, through 2025. For 3W vehicles, passenger mobility will be the greatest demand driver, with expected YoY growth of 40 to 50 percent, followed by goods delivery, with YoY growth of 14 to 16 percent.

Exhibit 4

A number of use case will drive growth in shared mobility for small-format vehicles.

		Current fleet size (range) '000	Km traveled per day	Growth rate, 2025 (CAGR)
2W	1 E-commerce/small format	80-120	90-100	14-16
	2 Food delivery	375-425	120-130	15-20
	3 Grocery delivery		70-80	25-30
	4 Self-drive rentals	40-60	30-40	100
	5 Ride hailing	130-170	70-80	40-50
3W	1 Goods mobility	550-650	110-120	14-16
	2 Passenger mobility	>3,000	120-130	40-50

Source: Expert interviews; McKinsey analysis

Higher penetration of connectivity features across segments

Within the consumer market, connectivity was important long before COVID-19 hit and it will continue to be a differentiator. For instance, the number of connected features in hatchbacks—category B vehicles—increased from 5 in 2015 to 33 in 2019, with most innovations focusing on safety and convenience. In a 2019 survey, the percent of consumers who stated that they would be willing to switch to a connected car also increased from 20 percent in 2014 to 54 percent in 2019.⁵

The ongoing pandemic could accelerate the adoption of connectivity features in commercial vehicles, especially within the agriculture and infrastructure sectors, since both will be a focus as the Indian government attempts to kick-start the economy. Government subsidies helped demand for tractors return to its pre-COVID-19 level by June,⁶ and they could also contribute to a V-shaped recovery in sales of construction equipment, and medium and heavy commercial vehicles.

As companies begin to focus on conserving cash to mitigate risk, they might leverage in-vehicle telematics and the resulting big data to reduce costs and increase productivity. For instance, a few tractor manufacturers in India are offering telematics services that enable farmers to track, monitor, and share critical information about the location, health, and performance of their machines.

Actions needed to manage risks and ensure long-term growth

How can OEMs, the government, industry bodies, and mobility-service providers help revitalize the automotive sector and create better transportation options after COVID-19? The answer will vary by location, but the following strategies may be particularly vital in India.

OEMs

These stakeholders arguably face the most challenges and need to revise multiple aspects of their business model:

Realigning growth vectors. As sales of small-format e-mobility vehicles accelerate, OEMs should encourage growth by creating more affordable and performance-driven options across the 2W and 3W segments. Going by the current trends in fuel prices, the TCO for these vehicles will reach parity with ICE vehicles in India, as per the plan, since the fall in global oil prices has been offset by higher taxes in fuel, unlike in other countries. OEMs can also encourage growth by enabling battery swapping in new models, since this will address concerns about range and battery life.

Reimagining the go-to-market strategy. The pandemic has increased consumer comfort with contactless purchases, and 25 percent of Indian customers are now willing to use digital channels to buy high-value items.⁷ As in other countries where e-commerce has taken off, businesses are most likely to win if they offer a seamless omnichannel experience, where customers can easily switch among modes as they consider and purchase items.

To manufacture EVs or their components, both OEMs and suppliers must invest in new equipment and capabilities. Close collaboration is essential to ensure a mutual understanding of supply-chain requirements, essential components, and end products. Ideally, OEMs will offer long-term contracts to reassure suppliers that their investment will pay off. These agreements also guarantee OEMs a stable source of components.

Moving to modular assembly. OEMs will have to be nimble with their strategy as well as their operations. They should consider creating products that can be assembled by combining different modules to reduce costs. Otherwise, they will have to develop multiple platforms, especially if they expand into EVs. Ideally, certain modules, such as those involving powertrain architecture, will be suitable for both ICE vehicles and EVs.

Digitizing the supply chain. Both OEMs and mobility players must digitize their logistics and supply-chain function to remain agile and improve productivity. This is especially true if they begin manufacturing EVs, since many components will

⁵ McKinsey's ACES Consumer Survey, 2019.

⁶ Latha Venkatesh, "Tractor demand coming back surprisingly fast, never seen this before: M&M's Goenka," CNBCTV18, June 15, 2020, cnbctv18.com.

⁷ CarWale Survey 2020.

come from abroad. Many companies would benefit by creating a logistics “control tower”—basically, a group of people that manages, integrates, and analyzes big data in real time. If a part ships from a warehouse, the control tower would have complete visibility into its progress and adjust manufacturing plans accordingly. Real-time insights also help companies maintain optimal inventory levels and meet customer deadlines. While such control towers are already a basic feature at companies in many countries, they will now become increasingly important for Indian companies as they attempt to optimize their internal costs.

Government and industry bodies or associations

Industry bodies or associations, as well as government, must help develop a path forward for the automotive and mobility sectors. Some important steps could include the following:

- Creating and maintaining incentives to encourage EV adoption; this could include offering policies that enable development of the local supply chain to reduce dependence on imports of critical components; this is especially important for EVs, since over 60 to 70 percent of their components (in value terms) are imported
- Facilitating the development of a country-wide IT infrastructure that will enable storage and tracking of offline telematics data; all businesses, especially those in the infrastructure and agriculture sectors, could use this information to improve their productivity
- Ensuring liquidity through various mechanisms; for instance, the government could incentivize banks to lend money and fleet operators could partner with non-banking financial corporations to disburse loans
- Setting up incubation centers in metropolitan zones that promote innovation in ACES

Mobility-service providers

As discussed earlier, mobility-service providers with small-format vehicles will gain strength in the current downturn. However, players who are dependent on four-wheelers will have to identify new business models, such as self-drive rentals and long-term lease rentals, to stimulate business.

Having an extensive number of EVs in the fleet would reduce operating costs and increase drivability, which is a major factor when consumers are choosing a vehicle. It would also allow seamless integration of electronics and telematics.

Mobility-service providers can collaborate with OEMs to create a path forward for the industry. Together, they could play a pivotal role in managing the downturn, embracing discontinuities, and sharing the financial and intellectual challenges involved in developing capabilities that will allow them to embrace disruptions like ACES. Such partnerships will be the only way to scale up quickly in the rapidly evolving industry. After all, many OEMs want to monetize their investments in mobility start-ups to boost their core business, since usage of personal vehicles will take time to recover, while B2B usage and last-mile delivery will see greater demand.

Finally, mobility-services providers could work with OEMs and the Indian government to create a circular economy that reduces waste, pollution, and congestion while generating additional revenue opportunities in an ever-expanding value pool.

With the right strategy, OEMs and mobility players in India can weather the downturn. Their success will require both careful attention to trends and a rapid response. Although it may be difficult for them to look beyond the immediate crisis, those that take a long-term view are most likely to preserve their business, as well as the livelihoods of their employees, and potentially emerge stronger in the next normal.

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