



BDO Driving Profits
NEWSLETTER

INSIGHTS FROM THE BDO AUTO DEALERSHIPS PRACTICE

THE RISE OF ELECTRIC VEHICLES

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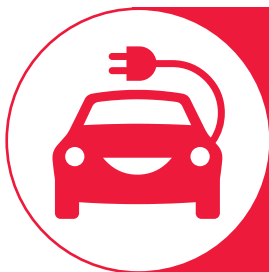
Convergence of the Industry

The automotive industry is experiencing a convergence of disruptions unlike any seen since 1910. Autonomous, connectivity, electrification, mobility, and subscription business models are reshaping the automotive industry and creating a frenzy of activity.

There are dozens of self-driving car companies, an untold number of connectivity applications, and over 500 mobility related technology and technology-enabled solutions offered by existing companies and start-ups. Additionally, there are subscription models with varying degrees of success, with some original equipment manufacturers (OEMs) terminating programs recently and others recommitting to them, and regarding electric vehicles (EV), there are 17 public EV OEMs and 4 private EV OEMs. As Harley-David's recent announcement to take its EV division, LiveWire, indicates there is ample fuel to fund new entrants into this space and capital to accelerate innovation. Where this lands is anyone's guess but the factors at play do suggest significant uncertainty.

To highlight the disruption occurring within the automotive landscape, two great examples of disrupters entering the market are Tesla and Carvana. These two companies currently have market capitalization that far exceed the traditional dealerships and OEMs. Carvana has a market cap of \$31B, exceeding the combined market capitalization of Carmax, AutoNation, and Asbury. Tesla has a market cap of \$1T, exceeding the combined market capitalization of Toyota, Volkswagen, GM, and Ford.

An integral part of the industry, dealerships are also seeing significant changes, especially as it pertains to EV, which is the focus of our discussion in the rest of this article.



There are three types of EVs: hybrid EVs (HEV) which have an internal combustion engine (ICE) and an electric motor and battery, plug-in hybrid EVs (PHEV) which have both and can operate on either, and battery EVs (BEV) which do not have an ICE. HEV and PHEV are mere blips on the road to full BEV as the world transitions away from the internal combustion engine (ICE).

THE MARKET FOR ELECTRIC VEHICLES

The market for EVs resulted from changes in three main areas including regulation, consumer behavior, and technology.

Regulation

Governments and cities have introduced regulations and incentives to accelerate the shift to sustainable mobility. Regulators worldwide are defining more stringent emissions targets. The European Union seeks to align climate, energy, land use, transport, and taxation policies to reduce net greenhouse gas emissions by at least 55% by 2030. The Biden administration introduced a 50% EV target for 2030.

Consumer Behavior

Consumer mindsets have also shifted toward sustainable mobility, with more than 45% of consumers considering buying an EV. A recent survey by Cars.com revealed two-thirds of Americans are interested in buying an EV, despite barriers such as higher sticker prices than internal combustion engine (ICE) models and limited access to charging stations. In China, consumer interest is even stronger than in Europe and the US.

Technology

Both the convergence of technological innovations (e.g., autonomous) and battery development have created the path to an emissions free industry.

ARE ELECTRIC VEHICLES HERE TO STAY?

For many years, lack of product availability, unfavorable pricing, limited charging infrastructure and battery range, and consumer demand have held back the widespread adoption of EV. However, the tipping point in passenger EV adoption occurred in the second half of 2020, when EV sales and penetration accelerated in major markets despite the economic crisis caused by the COVID-19 pandemic. Europe spearheaded this development, where EV adoption reached 8% due to policy mandates such as stricter emissions targets for OEMs and generous subsidies for consumers.

On a global level, a [recent McKinsey study](#) projects EV adoption will reach 45% by 2030-2035 under current

expected regulatory targets, with the major markets reaching these levels on varying timelines. New regulatory targets in the European Union and the United States now aim for an EV share of at least 50% by 2030, and several countries have announced accelerated timelines for ICE sales bans in 2030 or 2035. By 2035, the largest automotive markets, will go nearly entirely electric.

- ▶ Europe may reach 60% – 75% EV sales by 2030, driven by regulatory targets on the low end and on reported consumer preference on the high end
- ▶ In the US, in Q2 2021, EV sales reached 3.6% of total car sales. The aggressive electrification target for 2030 and U.S.OEMs support of electrification have led to many declaring ICE bans by 2035

China will also continue to see strong growth in electrification and remain the largest EV market by vehicle volume based on strong consumer demand, despite low EV subsidies and no official end date for ICE sales. Adoption modeling yields a Chinese EV share as much as 70% for new car sales in 2030.

Some OEMs have stated their intentions to stop investing in new ICE platforms and models and many more have already defined a specific date to end ICE vehicle production. There will be 100 EVs offered by over 25 OEMs in the U.S. market by 2024. Many large traditional OEMs are targeting 50%-70% EV in all markets by 2030.

- ▶ [General Motors announced it will sell only zero-emission vehicles and is aiming to produce only EVs by 2035](#), with 30 new plug-in models arriving by 2025, a \$27 billion investment. GM generated excitement with the recent debut of the GMC Hummer all-electric pickup.
- ▶ [Ford, which is investing \\$22 billion in EVs and announced 40% of its vehicles will be electrified by 2030](#), aims to achieve 100% of new vehicle sales in Europe to be EV. Ford similarly generated excitement with the recent debut of the F-150 Lightning all-electric pickup.
- ▶ [New Mercedes platforms will be EV only by 2025 and all vehicles will be electric by 2030](#)
- ▶ [Volvo will go all electric by 2030](#)

OEMs with Highest Volume of 2022 EV Model Releases

OEM/Brand	# of EV Models	Owned Brands
BMW	5	Mini
BYD	4	
Geely	4	Lotus, Polestar, Volvo
GM	6	Cadillac, Chevrolet, GMC
Hyundai Motor Group	4	Genesis, Kia
Mercedes	7	Smart
Toyota	3	Lexus
Volkswagon	13	Audi, Porsche, Skoda, VW
TOTAL	46	

OEMs with Highest Volume of EV Model Commitments through 2025

OEM/Brand	# of EV Models	Owned Brands
BMW	28	Mini
Changan	21	
GM	30	Cadillac, Chevrolet, GMC
Honda	20	Accura
Hyundai Motor Group	27	Genesis, Kia
Rivian	6	
SAIC	100*	Maxus
Toyota	70	Lexus
TOTAL	303	

* Includes an unidentified number produced in partnership with GM and VW

SOURCES:

[The New Future: 60 Upcoming Electric Cars for 2022 \(topelectricsuv.com\)](https://www.topelectricsuv.com)

[Future Electric Cars: All Upcoming EVs 2022-2025 | U.S. News & World Report \(usnews.com\)](https://www.usnews.com)

[GM's Path to an All-Electric Future | General Motors](https://www.gm.com)

[Power play: Evaluating the U.S. position in the global electric vehicle transition \(theicct.org\)](https://theicct.org)

[Hyundai Motor Group: Aiming to sell 1 million EVs a year in 2025-26 - MarkLines Automotive Industry Portal](https://www.marklines.com)

[Toyota announces its new BEV series, Toyota bZ, in establishment of a full line-up of electrified vehicles | Toyota | Global Newsroom | Toyota Motor Corporation Official Global Website](https://www.toyota.com)

[From Audi to Volkswagen: How are big carmakers approaching the EV transition? \(edie.net\)](https://www.edie.net)

HEADWINDS TO TRANSITION

While there is strong momentum in the EV transition and bets made by governments and OEMs will only accelerate it, there are significant headwinds which may slow the pace of the transition. Public institutions, businesses and consumers will need to resolve several issues and overcome some challenges.

Chips

AlixPartners estimates the chip shortage has cost the industry \$210B and 7.7 million units in 2021, double that of their forecast in May. And yet, according to Intel CEO, Pat Gelsinger, by 2030, chips will make up 20% of the components of premium cars — five times more than their proportion in 2019. Despite the major announcements of investments in new fab plants in the U.S. and elsewhere, the long development time to bring these operations online begs the question whether this additional capacity will come in time to support the demand for EVs.

Battery Prices

The high cost of vehicles based on batteries continues to hold back consumers. As lithium prices soar, reflecting escalating demand and limited sources of production, it's unclear when battery costs will decline to establish EV vehicle price parity with ICE vehicles. That said, EV motor maintenance is limited to 100,000. While motors and engines last upwards of 20 years, the typical EV battery lasts 200,000 miles — not quite 20 years. Tesla, however, is rumored to be developing an EV battery that will last 1,000,000 miles, which would extend the life of an EV vehicle well beyond the 11.9 years of today's average vehicle. So, over time, the total cost of ownership of an EV vehicle is likely to decline enough to overcome any consumer resistance due to price.

Charging Infrastructure

The lack of charging infrastructure and limited EV range due to battery life has greatly inhibited EV adoption. The Bipartisan Infrastructure Framework includes \$15 billion to speed up adoption of EVs and accelerate the U.S. EV market. The plan sets aside \$7.5 billion to construct a nationwide EV charging network. However, according to a [report](#) issued in July 2021 by The International Council on Clean Transportation, the total charging units in homes, workplaces, and public stations to support the EV goals set by government and OEMs will require tremendous investments in charging stations, notably in home, and the electrical grid infrastructure to support demand. It is uncertain whether the required rate of growth in charging stations and grid capacity can be met to support EV goals.

New Business Models

Another issue on dealers' minds is direct-to-consumer (D2C) sales, the business model that's fueled Tesla's marketing of more than 2,000,000 EVs sold to date. Tesla does operate about 160 company-owned showrooms, yet sales are transacted online. At last count, 33 states allowed D2C auto sales, with others' legislatures debating bills that would bypass the so-called franchise system that has legally connected dealers and manufacturers for more than a century. National Automobile Dealers Association (NADA), state dealer groups and traditional automakers have advocated maintaining the franchise system, claiming that it levels the playing field.

IMPACT ON AFTER MARKET SPENDING AND MARGINS

One genuine concern for dealerships is the fact that EVs don't require oil changes, transmission repairs and other services owners of ICE vehicles routinely bear — [services that account for 50% of dealerships' gross profits](#). ICE vehicles have 2,000 moving parts while EVs have 20. Fewer moving parts require less maintenance and repair and lowers vehicle service contract (VSC) attachment rates. While owners will spend more on EV related parts (e.g., tires), [BEV owners will likely spend 40% less on after-market parts and service compared to ICE owners by 2030](#). A 2019 [report](#) from AlixPartners estimates that dealers could see \$1,300 less revenue in service and parts over the life of each EV they sell.

While this does not bode well for dealership profitability, the U.S. now has a record 280 million cars, trucks and SUVs registered with state motor vehicle departments. The average age of vehicles in the U.S. has climbed to an all-time high of 11.9 years. 1 in 4 cars and trucks you pass are at least 16 years old. So, despite EV sales trending towards 50%-75% of total sales in the largest markets by 2030, the impact on dealership profitability will not be abrupt. With a significant install base of ICE vehicles with a remaining life that will extend well past 2030 and a continuing high volume of ICE vehicle sales over the next 3 years, dealerships do have some time to plan.

IMPLICATIONS AND KEY TAKEAWAYS FOR DEALERS

One thing is clear, dealerships are operating within an increasingly disrupted environment which has affected the bottom line and created some uncertainty for the future. Over the past several years (with the exception of the COVID-19 pandemic) dealerships have experienced margin compression on vehicle sales. With threats to their services business, margin compression could continue. Higher front-end margins, notably F&I, will come under further pressure as EV prices decline and battery costs decrease.

The good news is most EV OEMs require factory authorized dealership service departments for repair and maintenance. Further, even though 70% of aftermarket service of ICE vehicles are handled by independent shops, franchise dealers don't want to cede EVs to them, especially as consumers familiarize themselves with battery charging and other peculiarities. "The EV owner might trust the dealers more to perform service than the aftermarket shops earlier in their ownership period," according to Chris Sutton, Vice President of automotive retail for market research firm J.D. Power. So, the threat of DIY and independent service centers may be limited in the near term.

For reasons outlined in "The Dealership of Tomorrow 2.0" [report](#), prepared in February 2020 by Glen Turner for NADA, the dealership model of store ownership should remain very dominant in the U.S. through at least 2030, even with the disruption caused by EVs. The trend of the decline in store owners, however, will continue with rooftops per owner increasing from 2 stores per owner before the Great Recession to 3 stores per owner by the late 2020s. That's a 50% increase in stores per owner.

Although the margin compression and scale of the investments to counter the disruptive forces dealerships face are significant and would typically suggest greater consolidation, Glen asserts that economies of scale are probably elusive beyond chains of 50-100 stores. So, there may very well be some leaders who emerge as winners in this transition.

THE PATH FORWARD

Many dealerships are embracing the EV transition. While there are fundamentals to guide dealerships over the coming years, there are many uncertainties and unanswered questions. To address these uncertainties and develop a plan to confidently face the future, dealerships should develop a business strategy, shift their operating model and a road map for change.

Regarding strategy, the key question centers on the degree of scale necessary to compete and grow profitably. Which portfolio of brands to invest in? How many stores to develop and in which markets? Whether to acquire other dealerships?

In redefining the operating model, dealerships must focus on how to create the best customer experience efficiently and effectively. How to enable this through the optimal digital and omnichannel strategy in collaboration with the OEMs? Should subscription services be offered for bundles of brand and vehicle portfolios and/or maintenance programs? Whether, when and to what degree to invest in charging infrastructure to reduce electricity costs and/or to create new revenue streams by selling electricity back to the grid or by providing a service to customers? What role does solar play in this approach? How to fully utilize the federal, state, and local incentives? How to design the site plan to accommodate battery quarantines? What risks and costs are associated with onsite EV infrastructure? What insurance coverages are necessary and plans for litigation support may be appropriate? How to comply with OEM service department requirements and ensure the number of required and certified technicians are retained?

Once dealerships have answered these questions, the opportunities will need to be prioritized and organized into a road map to guide the transition through 2030 and beyond. For any investments required, a clear and tangible business case should be developed to properly filter out those initiatives which should and shouldn't be pursued.

As a leading advisory, accounting and tax services firm with a wealth of experience working with dealerships, BDO is well equipped to help you answer these questions and support your business throughout the transition to EV.



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