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OPINION | Guest Column

Steven Grey

What electric vehicles mean for the future of the auto industry | Column

What fewer moving parts, less maintenance and other sea changes mean for the future of 'mobility appliances.'



A Chevy Bolt EV getting a charge at Shaheen Chevrolet in Lansing, Mich., on March 17, 2021.

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If cars are becoming computers, and computers are essentially appliances, what does that portend for the future of the automotive industry?

Vehicles powered by internal combustion engines (ICEs) are gradually being displaced by electric vehicles (EVs) that are basically computers mated to battery-powered drivetrains.

The technology at work is of course not as simple as that statement implies.

Ask General Motors, whose Chevrolet Bolt EVs are apparently at such risk of randomly bursting into flames that they've instructed owners not to park them indoors. And with 11 crashes since early 2018 involving its autonomous driving tech, federal regulators are now questioning whether Tesla is misleading consumers by calling its driver-assistance system "Autopilot." Obviously, if building the perfect EV was elementary, Bolts wouldn't be randomly combusting and Teslas would be better at driving in the dark.



Steven Grey [Provided]

But the complexities are being conquered, and much of the basic technology that makes EVs work — batteries, chips, electric motors, sensors — is rapidly becoming both pervasive and generic. Look at how easily competing producers of electric cars have already achieved face-melting acceleration. The instantaneous torque that's inherent to electric motors means that the whiplash performance you could once upon a time obtain only by shelling out \$100,000 will soon be entry-level, the new performance norm. Locomotive excess is being equalized.

Not that many owners of mobility appliances will care.

Once autopilot technology evolves from occasionally trying to kill us to being as capable as the name implies, no one will lift their noses from their smart phones. If that rings of overstatement, think of how many people you see staring at their phones *now*, when they're still entirely responsible for not committing vehicular homicide. Once we aren't required to pay attention while at the wheel, most of the time most of us won't. Why would you waste the time *not* doing something else? (Don't you have a Twitter feed to stay on top of?)

If that's the brave new world that awaits, how will the auto industry convince us to pay up for these transportation appliances?

The most compelling argument is the most obvious one — we always have.

No one has mastered the dark art of playing on our social insecurities better than the luxury car brands. You've seen the commercial, the one with the man/woman slaloming in serene comfort across a bleak desert at closed-course-do-not-attempt-this-at-home speeds. A voiceover confides in a hushed, confident tone:

"You cut your own path,

Because for people like you,

Freedom isn't a *word*,

It's a *way of life*."

Yes, Matthew McConaughey could sell an air conditioner to a polar bear.

But still, it's hard to believe that the effective democratization of bleeding-edge performance won't result in some price compression. If soon you'll be able to purchase a comfortable, quiet, extremely fast electric car with excellent range for about \$35,000, why would you pay \$100,000? (If that price tag seems dubious, the high-performance, long-range version of the P7 electric sedan introduced in China *a year ago* by Xpeng starts at about \$34,000 and goes 0 to 60 in 4.4 seconds. (And many reviewers say it has a much nicer interior than the comparable Tesla.)

The Chinese competition is just getting started. And they're throwing billions at the effort.

Again, only a fool underestimates the power of marketing (pet rock, anyone?). But one reason that carshare companies have taken off is because many younger people no longer view vehicles as validation or an extension of who they are. They're *just transportation*.

If \$35,000 will get you a car that accelerates fast enough to induce nausea, is eerily quiet and drives itself, what are the auto manufacturers going to be able to offer you to induce you to spend two or three times that?

It's an existential question for an industry already being gutted by the unrelenting transition to a more complex but much less complicated future.

The thing is, however technologically advanced, EVs require many fewer parts than comparable ICE-powered transports. While gasoline-powered vehicles typically use about 30,000 components, EVs require about half as many. The entire drivetrain of an electric car employs fewer than 20 moving parts (most electric vehicles don't have geared transmissions). Optimal performance is elusive, but the battery and motor technology that has made EVs commercially viable continues to advance at an impressive pace.

Unfortunately for the workforce, fewer parts means fewer people.

In Japan alone, the rise of EVs is expected to eliminate 84,000 positions by 2050, more than 10 percent of the 686,000 jobs in auto parts production. Earlier this month, over 2,000 employees of Honda Motor in Japan applied for early retirement as the Japanese automaker restructures its workforce in order to shift production toward more electric vehicles. In Germany they expect at least 215,000 jobs will be affected by 2030 — that's almost 40 percent of the 613,000 jobs tied to internal combustion engines.

For those employed in the industry, the culling of the workforce is cruelly consistent with the de-mechanization of vehicle design: it takes 10 people to make just the fuel-injection unit for an internal combustion engine, but only one to produce an electric motor.

It's a fundamental shift that is already sending colossal shockwaves through every corner of the industry, upstream and downstream. Dealers now recognize that the mechanical simplicity and inherent reliability of electric vehicles also means that a key source of their revenue — service and maintenance — is also about to take a massive hit.

That low hum you hear emanating from the EV passing by is the soundtrack to a profound, painful transformation. How strangely quiet it is, the sound of the ICE age entering its twilight...

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