Electric vehicle adoption valletta

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While the internal-combustion engine dominates car design, its existence contributes to global warming and detracts from electric-vehicle (EV) development. Things like carbon emissions, the complexity of design, and battery development are slowing down the widespread adoption of electric vehicles. But they don"t have to. Russell Hensley, co-leader of the McKinsey Center for Future Mobility in the Americas, joins McKinsey editorial director Roberta Fusaro to discuss what can be done to encourage manufacturers to produce and consumers to embrace electric cars.

After, hear Alan Murray, CEO of Fortune Media, talk about his search for the soul of American business in an excerpt from our Author Talks series featuring his book, Tomorrow"s Capitalist (Hachette Book Group, May 2022).

Roberta Fusaro: We"ve all heard how the electric vehicle is coming. But so far, the adoption has been relatively slow. What"s keeping suppliers from producing more electric vehicles?

Russell Hensley: That"s a multibillion-dollar question. We are certainly in the decade of the EV. But the vast majority of vehicles on the road today are powered by internal-combustion engines. And one side effect is the emissions of carbon. It"s quite complex to actually design, develop, and produce electric vehicles at scale when you have a vehicle fleet so dominated by the internal-combustion engine, and all the systems in the world for mobility have been indexed toward the internal-combustion engine.

Russell Hensley: There are several forces at work in the EV industry: regulation, economics, technology, and the consumer, who has to appreciate and adopt the new technology. If it wasn"t for the regulators, we probably wouldn"t be talking about electric vehicles today. We"ve got regulation that promotes the adoption of electric vehicles.

Second, the technology: over the past 20 years, we"ve seen the rapid adoption of mobile electronics and, with that, the development of batteries and energy storage. That application has paved the way for huge advances in energy storage and batteries that are suitable for applications in vehicles.

We"ve got a combination of regulations aiming to reduce carbon, electric vehicles being part of the solution, and batteries being a critical element of the electric vehicle.

Russell Hensley: Adoption has not gone faster because there is a hesitation in pivoting from something that is so trustworthy in the internal-combustion engine to something that is a relatively new technology. And, with vehicles being the second-largest investment that a household makes, it"s obviously a decision that takes much consideration.

Russell Hensley: If you take the global lens, electric-vehicle adoption differs quite significantly by region. Europe and China have similar adoption rates as a percent of volume, running somewhere close to 20 to 25 percent of new vehicles sold. But then, in the US, we have tended to be slower in terms of adoption, with something like 5 to 7 percent of new vehicle sales being electric in the US. There are a number of reasons why that is the case. If you look at the makeup of new vehicles sold in the US, a large proportion of them are actually pickup trucks and SUVs.

Russell Hensley: It"s somewhat easier to make the physics work and the economics to box with a smaller vehicle, which requires a smaller battery and has different demands based on the use cases than, say, for a pickup truck. That is changing quite quickly.

We are beginning to see the first introductions of electric SUVs and pickup trucks and will certainly see more in the next 12 to 18 months from the Detroit Three. These types of trucks will begin to accelerate adoption, if consumers and business owners adopt them.

Toward the end of the decade, about half of the new vehicles sold in the US, typically around 17 million units a year, will likely be powered by an electric motor and battery. Therefore, we will be catching up with the other regions around the world. We may lag at this point, but it"s going to change once you get the electrification of the more popular models in the US.

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