

Hybrid vs electric vehicles from a *consumer* perspective

There is ongoing news of governments setting up future bans on the sale of combustion engine, and of automakers shifting their future vehicle line-up to electric vehicles (EV).

But governments and automakers already have difficulty convincing consumers that EVs will allow them to do everything they need. Recent mass evacuations ahead of hurricanes Harvey and Irma remind us of the severe limitations EVs would have had in such scenarios.

For all the news about governments and automakers planning electric vehicles, there is little reporting about how consumers feel about EVs.

Electric vehicles continue to present consumers with too many day-to-day limitations for widespread adoption

Some of the avoidance consumers show towards EVs comes from their lack of familiarity with the technology itself, some from the long recharging times, and some from “range anxiety”. Consistently, consumers report expecting a minimum of 200 miles out of a tank full/charge. The average gasoline-engine vehicle easily exceeds 200 miles on a tank. But besides Teslas, most existing EVs are able to do only 80-160 miles on a charge, which is insufficient to serve as a primarily household vehicle. Indeed, running out of electric power before getting to our destination can become a serious safety issue.

Much of the anxiety stems from the batteries and not the electric motor itself. Batteries and electric motors are not one and the same, any more than fuel tanks and combustion engines are one and the same. EV’s greatest limitation resides in our ability to store electricity, not it converting electricity into forward motion. Even if we developed fast-charging capabilities, batteries would still take up much space and add weight.

None of this is to say that consumers won’t accept EVs. Before oil crises and climate change, the combustion engine appeared to meet all our needs, but not anymore. And despite their limitations, EVs certainly have a place in the market. Existing owners report difficulty going back to a combustion engine vehicle after having driven an EV. However, until we have overcome the electricity storing limitations that currently exists, and EVs can deliver the charging times and distance range that the market expects, and rely on a widespread infrastructure that is convenient to consumers, EVs will remain limited in their application.

From a consumer standpoint, hybrids offer the path of least resistance to mass electrification

A real innovation is that which maximizes consumer benefits by *fusing* together the best characteristics of two or more technologies, resulting in a greater set of consumer benefits.

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Hybrid technology does just that: fuses the benefits of the electric motor (clean energy, fewer moving parts, quiet and efficient operation, instant torque, etc.), with those of the combustion engine (fast refuelling, wide range, existing infrastructure, proven technology, etc.). This explains to a large extent why hybrids have had greater acceptance than EVs.

But the prevailing market perception of hybrid technology is that it is mainly a green, fuel-saving solution, with all the compromises that this in itself represents. To truly unleash the full potential of hybrids, consumers need to view it as much more than a fuel-saving application.

Automakers like BMW, Ferrari, Porsche, and others, are in the process of doing just that by using hybrid powertrains as a means for rising vehicle performance, not just fuel economy, to new levels.

Unleashing the full potential of hybrid vehicles

Ultimately, to become mainstream and be able to maximize consumer benefits, hybrids will need to deliver not just efficiency, but also performance and affordability.

Following the concept of *fusing* consumer benefits, the hybrid vehicle of the future will likely leave all propulsion tasks to the electric motor, which is what the electric motor does best, and confine the combustion engine to work simply as an electricity generator to feed the motor and all other accessories, possibly with the aid of solar panels, plug-ins, etc., with a much smaller tank that needs refuelling much less frequently than today.

Placing the consumer at the center of your business

Regardless of industry, imposing a technology on manufacturers and products on consumers rarely ends well. This is why it is important to develop a business strategy—or policy—that identifies consumers' needs and wants. If you would like to find out more how Panalytics can help your business, please don't hesitate to contact us at info@panalyticsgroup.com.