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Ford says its autonomous cars will last just four years

Connie Loizos@cookie / 3:41 am IST•August 27, 2019

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The automotive industry has been promoting self-driving cars as a kind of panacea that will solve numerous problems that modern society is grappling with right now, from congestion to safety to productivity (you can work while riding!).

Unfortunately, a very big question that has been almost entirely overlooked is: how long will these cars last?

The answer might surprise you. In an interview with The Telegraph in London, John Rich, who is the operations chief of Ford Autonomous Vehicles, reveals that the “thing that worries me least in this world is decreasing demand for cars,” because “we will exhaust and crush a car every four years in this business.”

Four years! That's not a very long lifespan, even compared with cars that undergo a lot of wear and tear, like New York City cabs, which were an average of 3.8 years old in 2017, meaning some were brand new and others had been in service for more than seven years.

It's more surprising compared with the nearly 12 years that the average U.S. car owner hangs on to a vehicle. In fact, Americans are maintaining their cars longer in part because the technology used to make and operate them has advanced meaningfully. In 2002, according to the London-based research firm IHS Markit, the average age of a car in operation was 9.6 years.

So what's the story with autonomous cars, into which many billions of investment capital is being poured? We first turned to Argo AI, a Pittsburgh, Pa.-based startup that raised $1 billion investment in funding from Ford three years ago and refueled this summer with $2.6 billion in capital and assets from Volkswagen as part of a broader alliance between VW Group and Ford. Argo is responsible for developing the self-driving technology that Ford will integrate into its own vehicles and it's right now testing its tech in five cities.

We'd hoped Argo could help us put that four-year number into context, including how Ford arrived at it and whether it could be lengthened. But because Ford will be operating the cars, and Argo isn't involved in the parts of the business that build, maintain or operate its vehicles, Argo pointed us right back to Ford's Rich, who answered some our questions via email while on the run.

Asked, for example, how many miles Ford anticipates that the cars will travel each year — we wondered if this number would be more or less than a taxi or full-time Uber driver might traverse — he declined to say, telling us instead that while Ford isn't sharing miles targets, the "vehicles are being designed for maximum utilization."

Explained Rich, "Today's vehicles spend most of the day parked. To develop a profitable, viable business model for [autonomous vehicles], they need to be running almost the entire day."

Indeed, Ford very notably isn't selling these cars to individuals any time soon. Instead, it plans to use the cars in autonomous fleets that will be used as a service by other companies, including as delivery vehicles. Ford sees the "initial commercialization of AVs to be fleet-centric," said Rich.

We also wondered if Rich's prediction for the lifespan of full self-driving cars ties to his expectation that Ford's autonomous vehicles will be powered by internal combustion engines. Most carmakers appear to be investing in new combustible engine architectures that promise greater fuel efficiency and fewer emissions but that still require more parts than electric cars. And the more parts that are being stressed, the higher the likelihood that something will break.

Rich says the idea is to transition to battery-electric vehicles (BEV) eventually, but that Ford also needs to "find the right balance that will help develop a profitable, viable business model. This means launching with hybrids first."

In his words, the challenges with BEVs as autonomous vehicles right now includes a "lack of charging infrastructure where we need to operate an AV fleet. Charging stations and infrastructure needs to be built that will add to the already capital-intensive nature of developing the AV technology and operations."

Another challenge is the "depletion of range from on-board tech. Testing shows that upwards of 50 percent of BEV range will be used up due to the computing power of an AV system, plus the A/C and entertainment systems that are likely required during a ride hailing service or passenger comfort."

Ford also worries about utilization, wrote Rich. "The whole key to running a profitable AV business is utilization – if cars are sitting on chargers, they aren't making money."

And it's worried about battery degradation, given that while "fast charging is needed daily to run an AV fleet, it degrades the battery if used often," he said.

Of course, the world would be far better off without *any* combustion engine exhaust emissions. On the brighter side, while Ford's cars may not be long for this world, between 80 and 86% of a car's material can be recycled and reused. According to a trade group called the Institute of Scrap Recycling Industries (ISRI), the U.S. recycles 150 million metric tons of scrap materials every year altogether.

Fully 85 million tons of that is iron and steel; the ISRI says the U.S. recycles another 5.5 million tons of aluminum, a lighter but more expensive alternative to steel that carmakers also use.