

Silicon Valley's driverless car dream is on track to fail

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Minimal progress has been made on autonomous projects despite the tech titans investing huge sums

For years, the driverless car has been a poster child for technology-led disruption – the very embodiment of the idea that “software is eating the world”. But that dream now looks all but dead. Another nail was quietly hammered into its coffin last week when the American car safety regulator, the National Highway Traffic Safety Administration (NHTSA), announced an investigation into Tesla’s Autopilot feature. Nothing attracts the attention of the state like rear-ending its hardware. The agency noted 11 incidents in which a Tesla had smashed into the back of an emergency services vehicle, two of which were parked at the time. So the glitch had become rather hard to ignore.

This didn’t stop Elon Musk, Tesla chief executive, announcing plans for a robot humanoid on Friday, claiming, in carnival barker style, that his cars are already “semi-sentient”.

When the obituary is finally written for the autonomous car, we should ask not why it failed, but why people ever thought it would succeed. When the public was asked what problems a

self-driving car might encounter, the concerns raised were sensible. No one is more aware of danger than a driver. But drunk on their sense of destiny, the engineers seemed oblivious. As a Bloomberg report last week dryly noted, “small disturbances like construction crews, bicyclists, left turns, and pedestrians remain headaches for computer drivers” adding that “right now, no driverless car from any company can gracefully handle rain, sleet, or snow.” Those “last few details” as the report (possibly sarcastically) calls them, remain insuperable.

The NHTSA’s concerns with Tesla give us a useful reality check into how little progress has actually been made. On the industry’s five-point scale in which manual driving is Level 0, and full automation, or hands off self-driving, is Level 5, Tesla’s Autopilot only offers Level 2. On its website, the manufacturer points out that “Autopilot does not turn a Tesla into a self-driving car nor does it make a car autonomous”, which is something of an understatement. Autopilot merely offers driver assistance when parking or changing lanes, and adaptive cruise control. But even that modest level of assistance clearly has issues, and judging distance is one of them.

Uber and Lyft have both sold off their autonomous car divisions. Others have shut down completely, notably the truck start-up Starsky. Even Apple, with its apparently bottomless pockets, mothballed its own autonomous car project Titan two years ago. Established auto manufacturers like BMW (which predicted full autonomous driving for this year but merely ships a Tesla-like

Level 2 assistance) stopped mentioning dates at all.

The driverless car chimera has its roots in a strange fantasy, one that gripped US military theorists three decades ago. Generals have long dreamed of removing human soldiers from the battlefield and replacing them with machines. But in the 1990s, the top brass became obsessed with something much more ambitious. Drawing from new ideas of complexity and biology, the theorists envisaged swarms of machines capable of self-organisation and intelligence. Think Dr Dolittle meets Dr Strangelove.

Autonomous vehicles were one of three strategic projects to emerge from the rubble of the defence agency Darpa’s decade-long, billion-dollar Strategic Computing Initiative. In 2004, Darpa launched the Grand Challenge, a competition to drive cars in the Mojave Desert in clear, dry conditions and largely in straight lines. Google took a keen interest, and adapted the work for its self-driving car in 2014, boasting of the hours of largely incident-free mileage. That started an industry-wide panic, and autonomous driving has since gripped governments, researchers and the rest of the car industry and consumed billions in private and public money.

The most insuperable problem eventually became apparent to the boffins, by now the only people in the world not to realise it might exist. This is what the author and transport commentator Christian Wolmar calls the “Holborn problem”. When pedestrians spill onto the pavement, as they once did outside Holborn station at 5pm every Friday evening, no autonomous vehicle can move. Since



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the computer can’t be programmed to drive into a human without bankrupting the manufacturer in a subsequent lawsuit, it halts. Traffic behind the vehicle halts too, and very soon the city is gridlocked.

Lobbyists came up with an ingenious demand: fence off all pedestrians where the vehicles operate, and dedicate lanes to the clunky robot cars. These were “modest infrastructure changes”, insisted Andrew Ng, Google’s then artificial intelligence guru. But in reality, these required the fabric of the city to be radically changed to compensate for the shonky state of the tech. Destroy the city, to save the self-driving car? No thanks, said planners, and such lobbying efforts were rejected.

Here in the UK, the Government has approved Level 2 – so expect a shunt – but our own publicly funded research efforts are much more modest and useful. We can expect to see autonomous vehicles in agriculture, for example, and in the fields of Wiltshire and Dorset where trials are taking place, you already can. These are low-risk environments, largely free of nasty surprises.

Interviewed for Sky News seven years ago when Google unveiled its first prototype autonomous vehicle – this looked like an infant’s toy – I mused that this may be an elaborate joke by Silicon Valley to bankrupt the established auto industry, wasting its resources in pursuit of an unachievable dream. But now the joke’s on Silicon Valley.

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