Will Autonomous Vehicles Really Live Up To The Hype?
By Bernard Marr

Autonomous driving promises a future where road traffic accidents and speeding tickets are no longer a feature of life. Mobility will be transformed, as will be the environments we live in, as roads, towns, and cities are reconfigured to accommodate self-driving cars and trucks, and even planes and boats. But we've got a long way to go yet before we get there!

The 5 Biggest Connected And Autonomous Vehicle Trends In 2022

The immediate future is about iterative advances in the technological as well as the societal and legislative infrastructure that needs to be in place before this promise becomes a reality. In the meantime, cars and vehicles are becoming increasingly smart and connected in a myriad of other ways, and these advances will bring some of the most exciting changes to mobility and transportation that we will see in the next year and beyond.

So let's take a look at some of the ways that autonomous and connected mobility will impact our lives in the near future…

Robotaxis become a more frequent sight

Most people's first experience of autonomous driving most likely won't be in a vehicle they own themselves, but one that is part of a fleet of private hire or ride-sharing cars.

The rollout of autonomous taxi and ride-sharing services may have stalled somewhat over the past few years due to the social effects of the Covid-19 pandemic. However, all signs indicate that it will get back on track in the coming years, and big business is still confident that self-driving taxis have a part to play in the future of personal urban mobility.

Alphabet (via its Waymo subsidiary) and GM are among the big players who are pushing forward with commercial operations in the US. The other big market for these services is China, where Baidu and Didi are putting driverless fleets onto the roads of cities including Shanghai and Beijing.

McKinsey predicts that 2022 will see the start of an accelerating uptake of these services, which by 2030 will account for up to 25% of all shared mobility journeys. Other players from whom we can expect to see projects or pilots in 2022 include Motional, whose partnership with Hyundai will bring level four autonomy to its IONIQ 5 vehicles, enabling them to serve as robotaxis.

Autonomous deliveries picking up the pace

Where some autonomous vehicle use cases may have stalled due to the pandemic, others have only accelerated. “Last mile” delivery via autonomous vehicle is already big business, with Starship’s fleet already making 1.6 million deliveries. In 2022 they will expand to cover more cities in the US and mainland Europe. As with competitors like Udelv, their vehicles operate almost entirely autonomously but can delegate control to humans in control centers if they run into difficulty or come across hazards that their machine learning training can't work out how to navigate.

These robots operate using machine learning algorithms, which means that just like the self-driving cars being developed, they will get increasingly capable at navigating their environments with time, and as more units hit the road. Another company vying for pole position in this industry is mobility expert Segway, which plans to launch its own delivery robot, in partnership with LA start-up Coco, during the first quarter of 2022.

AI monitoring driver behavior

There are many use cases for artificial intelligence (AI) in vehicle engineering outside of self-driving cars, and one of the most potentially beneficial is monitoring driver awareness. Several manufacturers are now using in-car computer vision equipped cameras to monitor driver faces for microscopic indications of fatigue, which could provide early warning of tiredness that may lead to injury. It's easy to see why this is considered an important use case in the industry, where fatigue is said to play a role in up to 25% of serious and fatal road traffic accidents. Bosch is one of the technology manufacturers which has created systems designed to detect fatigue

and even “microsleeps” – incidents where drivers nod off for just a second or two, often without noticing it – but which are enough to frequently cause accidents.

Autonomous shipping sets sail

Shipping makes sense as a first use case for autonomous vehicles – after all, don't most boats travel in more or less a straight line, from port to port, and encounter much less in the way of congestion than, say, cars or trucks? However, it poses challenges of its own – as those behind the first attempts to autonomously cross the Atlantic with the Mayflower Autonomous Ship have found. The research vessel was originally planned to make the crossing in 2020 to mark the 400th anniversary of the crossing of the original Mayflower. However, it was delayed due to the Covid-19 pandemic, eventually setting off in June 2021.

This journey, however, was cut short by a broken exhaust pipe, forcing the vessel to return to its starting point of Plymouth, UK. Another attempt at the first autonomous crossing of the Atlantic ocean by ship is planned for spring 2022.

Meanwhile, ferries are another area of shipping where autonomy is creating a lot of excitement. Here, Scandinavian countries – where it’s quite usual for residents to have to cross a fjord or two to get to work each day – are leading the way.

A new wave of collaboration and consolidation?

Developing autonomous vehicles – particularly the concept’s flagship product – the self-driving car – is a hugely expensive and resource-intensive business to be involved in. Tesla is without a doubt one of the most high-profile participants in the race – thanks in no small part to CEO Elon Musk, who has never been shy of publicity or slow to make ambitious claims! Musk originally predicted he would deliver fully autonomous cars by 2021 – something that’s looking increasingly unlikely as I write this article, with just a few months of the year left to go!

This year, filings made by the company have been interpreted as admissions that there is, in fact, no guarantee Tesla will ever crack the problems that are holding them back

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Does this mean self-driving cars will never happen? I think this is extremely unlikely. What it does mean is that a greater degree of collaboration, particularly around data gathering, is extremely important if the industry is to live up to the hype it’s created in recent years. We can already see this happening – for example, big names like Ford, Waymo (Alphabet), and Baidu have all committed to making their datasets public. We’ve also recently seen the establishment of the Autonomous Vehicle Computing Consortium – with members including Arm, Toyota, General Motors, and Nvidia – which aim to foster a more collaborative approach to solving the

Bernard Marr is an internationally best-selling author, popular keynote speaker, futurist, and a strategic business & technology advisor to governments and companies. He helps organisations improve