TRANSPORTATION

5 trends in self-driving cars anyone trying to get ahead in the industry needs to know about

Mark Matousek Jul 12, 2021, 10:08 AM EDT

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Autonomous-truck companies like TuSimple are starting to go public. Courtesy of TuSimple

- **Self-driving cars may not be a reality yet, but the young industry is evolving fast.**
- **For those hoping to get a leg up in this space, staying on top of trends is key.**
- **From the rise of robo-trucks to a potential SPAC bubble, here's what to know about AVs right now.**

1. Self-driving tech will deliver your packages and food before it replaces your Uber driver

During the 2010s, automakers and startups were confident self-driving taxis and consumer vehicles would be available by the early 2020s. Their predictions have mostly fallen flat, though there are robotaxis open to the public in parts of Arizona and Nevada.

Long-haul trucking and local deliveries have come to look like more promising applications in the near term, since they present fewer technological challenges than robotaxis

and arguably offer stronger business models.

Startups like Nuro, Gatik, and TuSimple are already making deliveries for customers like Walmart and UPS. Aurora Innovation, seen as one of the top players in the robotaxi space, has decided to focus on launching self-driving semi trucks ahead of passenger vehicles.

2. The industry's leaders have emerged

The gap between the AV industry's haves and have-nots has grown in recent years, leading some companies to give up while others form partnerships with automakers or sell themselves to deep-pocketed buyers. The shakeup has left the industry with a clear group of leaders that will be hard for new entrants to challenge.

Waymo has emerged as the consensus number-one. It operates the only autonomous ride-hailing service in the US, has partnerships with the likes of Stellantis and Daimler, and boasts the industry's largest funding round.

Experts generally rank a similar group of companies just below it, including Cruise, Argo AI, Aurora, and Motional. Each has raised more than $1 billion and, aside from Aurora, has announced plans to launch ride-hailing or delivery services by the end of 2023. (Aurora has said it intends to have its vehicles ready for use in commercial ride-hailing services "over the next few years.")

3. The first wave of public listings has begun

The stock market's appetite for young, high-upside companies set off a wave of public listings for pre-revenue electric-vehicle startups in 2020 and early 2021. Autonomous-vehicle startups are beginning to follow.

Three companies focusing on self-driving semi trucks — TuSimple, Embark, and Plus — have gone public this year or announced their intention to do so in the coming months, while Aurora and Argo AI are reportedly considering public listings later this year.

Those that become the dominant providers of automated-driving technology could produce Tesla-like payoffs for their backers, but progress in the industry has been slow.

Billions of dollars of funding and more than a decade of development has yet to produce a single national or even statewide autonomous-vehicle service. It remains to be seen how patient public investors will be.

4. Elon Musk has adopted a controversial self-driving strategy

Self-driving tech tends to fall into one of two buckets: systems that can handle some driving tasks in certain environments but require that the driver be ready to take over if they run into trouble, and systems that can operate without driver supervision.

Tesla's Autopilot feature falls into the former category, but the company is trying to push it into the latter. The company has gradually increased the number of tasks Autopilot can handle and the range of environments in which it can drive.

CEO Elon Musk believes this approach will make drivers and passengers safer — Tesla has published data showing lower crash rates for vehicles with Autopilot enabled — and give Tesla a bigger and better data set it can use to improve its technology. But critics argue that Tesla's strategy is unlikely to lead to a robust self-driving system and is reckless because it breeds a false sense of confidence in drivers that leaves them unprepared if Autopilot makes a mistake.

Critics point to fatal crashes involving the feature and argue that the crash statistics Tesla has released don't include enough detail to prove that Autopilot makes drivers safer.

If Musk is right, Tesla could become the first company to sell self-driving consumer vehicles, a scenario that could reduce collisions and give the company a major selling point its rivals can't match. If Musk's critics are right, Tesla will be stuck with an incomplete technology that makes drivers inattentive to its risks.

5. A key group of suppliers is generating excitement

Nearly every company in the industry sees lidar sensors, which bounce beams of light off nearby objects to measure

how far away they are, as an essential piece of hardware for self-driving vehicles. That perception has made the companies which make them attractive merger or acquisition targets. A number of lidar startups have teamed up with SPACs or been acquired by autonomous-vehicle companies like Aurora and Argo AI.

But the lidar industry isn't completely reliant on fully autonomous vehicles. Volvo plans to begin introducing the sensors on its vehicles next year, while Apple has started including them in iPhones and iPads. Soroush Salehian, the CEO of the lidar startup Aeva, believes the sensors will have an impact on consumer technology similar to the introduction of color cameras.

Do you work in the autonomous-vehicle industry? Do you have a news tip or opinion you'd like to share? Contact this reporter at mmatousek@businessinsider.com, on Signal at 646-768-4712, or via his encrypted email address mmatousek@protonmail.com.

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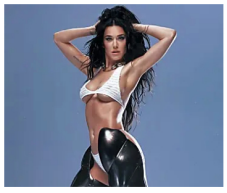
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