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PERSPECTIVE ON AUTONOMOUS TRUCKING

MAJOR MONEY AND MERGERS MARK A NEW PHASE OF AUTONOMOUS TRUCK R&D

Several high-profile mergers and serious investments signal that autonomous truck development is shifting into high gear.

If you've been following the various OEMs and start-ups currently racing to develop self-driving trucks and bring them to market, a couple significant trends emerged in the fourth quarter of 2020 and still are gaining steam as we move into the spring of 2021.

In 2019, we started to see some initial moves to form strategic partnerships, and acquisitions taking place between truck OEMs and various startup tech companies focused on autonomous vehicle technology for Class 8 commercial vehicles.

Since then things have been heating up and a new phase of autonomous truck development began last fall with a flurry of strategic partnership and merger announcements. Interestingly, Daimler Trucks North America (DTNA) has been particularly active lately, first announcing that it had purchased a major stake in autonomous developer Torc Robotics, and then following up quickly with a research and development partnership with Waymo.

Navistar has famously been dealing with the fallout from its failed 2010 emissions strategy for some time now. The company's now defunct MaxxForce engine family, which used exhaust gas recirculation (EGR) technology and opened the company up to a slew of legal woes and sales losses, also had the unintended consequence of bringing the financially strapped OEM into Volkswagen's sphere of influence. Fast-forward to today, and VW's new global truck and bus division, Traton, is acquiring all of Navistar.

And the same is true for notoriously methodical and measured PACCAR, the parent company of Kenworth and Peterbilt trucks, which announced in January 2021 that it was entering into an autonomous truck partnership with tech startup Aurora.

Volvo Trucks has focused most of its autonomous R&D in Europe. But the Swedish truck OEM was among the first to secure outside support for its autonomous development efforts, locking in a partnership with tech developer Nvidia in 2019. And in late February of 2021, the company announced a new partnership with a company called Foretellix, which has reportedly developed a verification platform that uses intelligent automation and big data analytics tools to coordinate and monitor millions of driving scenarios, to expose bugs and edge cases, including the most extreme cases.

Increasingly though, it looks like the 800-lb. gorilla in the autonomous waiting room is the Chinese-American tech firm TuSimple, which achieved fabled "unicorn" status on Wall Street by securing more than $1 billion in investor funding in 2019. TuSimple also has cozied up to Traton in a partnership agreement that is reportedly mostly centered on Europe at the moment — although it seems safe to assume this focus will change if/when Traton formally acquires all of Navistar.

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But, in January of 2021, TuSimple made more headlines by announcing a major investment from U.S. Xpress, one of the leading North American trucking fleets, as well as the unexpected news, as reported by the *Wall Street Journal*, that the company is going public in the very near future.

And, I should hasten to point out, these are just the more high-profile merger and acquisition stories in the headlines at the moment. There have been many more similar deals stretching back over the past several years. But it does

seem that lately, the frequency, size and pace of these new business partnerships in the autonomous truck space are heating up considerably.

So, what does all of this mean, looking in from the outside and trying to make sense of where autonomous truck technology stands today?

For starters, I think it's important to note that as of now, every single Class 8 truck OEM in North America is both heavily invested and publicly committed to pursuing autonomous vehicle technology.

If nothing else, this is a telling sign that the OEMs see something highly promising in autonomous technology as it currently exists — at least something promising enough that they're not willing to gamble that driverless trucks and at least some degree of increased autonomous control systems on commercial vehicles will not be a major design component on trucks in the near future.

That alone tells me that there is clearly significant promise and potential evident in current autonomous truck R&D to indicate that something truly big and transformative could be coming to trucking in the next few years.

And that conclusion brings me to my next conclusion about all of these mergers and deals: We're now far enough along in the development cycle for autonomous vehicles that both the OEMs and the tech startup companies have recognized that they both need one another if they're going to succeed in developing this technology and bringing a viable, productive and safe product to market.

The second lesson all these new partnerships and investments teach us, I think, is that everyone involved in trying to bring autonomous trucks to reality now understands just how truly difficult and complex a technological issue this is, and what a tremendous accomplishment it will be when a true driverless truck enters the marketplace.

This realization was confirmed in January of 2021, when Waymo CEO John Krafcik told Great Britain's Financial Times that designing and deploying autonomous trucks is a technology effort feat on par with launching rockets into space. Which, I think, explains why OEMs and tech startups finally conceded that they needed each other if they want all of their work to eventually come to fruition.

Truck OEMs have a lot of engineering talent on hand, of course. But it's mostly focused on the decades-old, nitty-gritty design work that goes into making a commercial vehicle tough enough and comfortable enough to reliably log hundreds of thousands of hard road miles, hauling freight for years on end.

Autonomous tech startups have loads of insanely talented engineers in-house with a keen understanding of many new emerging technologies today and cutting-edge ideas on how to apply and integrate them into self-driving vehicles. But they don't know much about how fleets operate, what drivers think, or the engineering realities that go into truck designs to make them both durable and profitable for their users.

So, it was inevitable that these two entities would decide to join forces in order to gain an edge in the race to develop autonomous trucks. And I think it is very telling that they have now decided to do so.

About the Author: *Jack Roberts is a transportation journalist who has been covering North American commercial vehicles for 25 years and has developed a reputation as a leading authority/futurist concentrating on new trucking technology, including autonomous vehicles, battery-electric trucks and emerging blockchain technology.*