



NEED FOR POSITIVE CASH FLOW HAS CHANGED

The old rules seem to have been tossed out the window when it comes to autonomous truck development.

There is a line from the John Ford movie “Who Shot Liberty Valance” that goes, “When the legend becomes fact, print the legend.” Applying that to new technologies like the connected and autonomous vehicles (CAV) market might go more like “when the dreams become money, print the dreams.”

Investments have flocked to the burgeoning CAV world, with one market researcher estimating the autonomous truck market size is expected to be \$2.14 billion by 2027. Another estimates \$2.3 billion by 2025, and still another estimates that the market in 2019 was valued at \$41.5 billion and will reach \$91.7 billion by 2027. Several established OEMs have market capitalizations listed in billions of dollars, so I assume these CAV market projections are reasonably interesting to the OEMs.

OEMs develop, build and support commercial vehicles. It’s a business model with a long history at many of the OEMs. A core element of staying in business for them is always tied to maintaining positive cash flow. They follow the generally accepted accounting principles and have official auditors monitor their incomes, outflows and asset valuations. Their stocks generally change value in gradual changes. Venture capitalists are generally not knocking down their doors to deliver truckloads of funds to OEMs.

Startups — that is a completely different story now isn’t it? Companies that have revolutionary ideas but no sales abound in today’s transportation market segment. Venture capitalists, risk takers, investors, seem to have an endless supply of funds to support these startups on the dream that they will become industry winners. Technology research and development always has an element of gambling to it, and countless “what ifs” that can impact trajectories.

I was trying to explain to an interviewer that times have changed on investments. Having positive cash flow

today seems less of an urgency to companies that have tapped into investor zeal. I reflected on reputable reports in 2010-2011 on how Tesla could never get to mass production, much less have a charging system of any size deployed, yet here we are today with more than 500,000 Teslas entering the marketplace yearly. In December 2020 CNBC reported that Tesla’s market cap is “now worth as much as the combined market cap of the nine largest car companies globally.” And yes, the company has an extensive charging network not just in the US, but also in Europe and other regions. *The New York Times* reported in January 2021 that Tesla finally became profitable, “a feat 18 years in the making.” Staying that way is also challenging, as Elon Musk stated in a March 2021 tweet, “Prototypes are easy, production is hard & being cash flow positive is excruciating.”

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Positive cash flow isn’t as critical as it used to be if deep pocket investors and owners have enough vision and perseverance to stick it out. Fundamental business economics still apply; at some point a company has to have a positive cash flow to continue to stay in business, but the scale of expectation has shifted to many years and perhaps decades. Or at least I think it has.

Tesla is perhaps an extreme outlier — the unicorn — but maybe not. Many of the fledgling battery electric



and fuel cell electric vehicle OEMs and a spate of autonomous vehicle developers that started five to 10 years ago now have goals of being in production by 2025. These are spans similar to what Boeing and Airbus see for introducing new airliners.

For some background on what can be involved in bringing a commercial vehicle or system to market, see NACFE's report [Defining Production](#). How do these new companies with no existing sales keep the lights on while they develop and get into production?

The phrase (some say curse) "may you live in interesting times" seems to describe this period of transportation technology investment. We are seeing massive amounts of investor interest in multiple competing startups. Endless mergers and acquisitions are happening as established OEMs and suppliers try to keep up with the pace of new technologies. Amid all the parties with vested interests in growth are also groups of savvy gamblers trying to profit from rapid changes in stock valuations of companies.

I once had a manager who loved the phrase "logic and reason don't always apply." The fundamental preconception behind the stock market is that the future is unknown. There is risk; some win, some lose. There are no sure things. I don't believe it is unfair to

describe technology investment as gambling.

Predications, whether based in deep analysis or based on hyperbole, are just predictions. Some are right, others partially right, and others flat out wrong. The physicist Niels Bohr popularized that, "Prediction is very difficult, especially if it's about the future."

When will autonomous vehicles have a significant market share in North America? My favorite answer: Ask me in 10 years, my "prediction" will be much better.

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