

Aurora Innovation: Challenging Road Ahead

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Overview



Ticker: AUR

**Stock Price:
\$6.13**

- Self-driving equipment manufacturer for trucks
- The “Aurora Driver” is a single software product that’s integrated onto multiple truck platforms via a standardized hardware kit (sensors, compute, redundant actuators)
- Founded by Chris Urmson, Drew Bagnell, and Sterling Anderson in 2017
 - Urmson headed Google’s self-driving car project (later Waymo)
 - Bagnell was a former head at Uber
 - Anderson was a former head at Tesla
- Went public through SPAC

Aurora is the industry leader in autonomous trucking

“The situation is suggestive of Samuel Johnson’s horse: ‘A horse that can count to ten is a remarkable horse - not a remarkable mathematician.’ Likewise, a textile company that allocates capital brilliantly within its industry is a remarkable textile company - but not a remarkable business.” – Warren Buffet

Technology Limitations

- Hybrid Machine Learning (ML) + rule-based modular AV stack
- Operating Design Domain (ODD) = specific set of conditions AV can operate safely
- Currently operating at L4 autonomy
 - The vehicle can operate without human intervention within specified domains
- Level 5 autonomy
 - The system can drive in all conditions and environments
- L5 is several years away
- There have been ridiculous numbers cited by various parties regarding the TAM of the autonomous trucking market but each depend on L5 autonomy being achieved
 - The numbers are ridiculous on their own but being contingent on L5 autonomy makes them useless

Questionable Financial Viability

- Currently more expensive on all routes
- Even if there are cost reductions, it will still be uneconomical on shorter routes (<400 miles) due to drayage
- There doesn't seem to be a clear timeline on when these costs will come down meaningfully enough for it to be cheaper at any distance
- Waymo used to be in trucking but exited to focus on passenger vehicles, possibly due to financial reasons

Scaling

- Once a specific route is mapped, validated, and in service, the marginal human labor per additional truck-mile on that route can be relatively low
- However, expanding to a new region is still extremely intensive
- “We have incurred negative cash flows from operating activities and significant losses from operations in the past. We expect to continue to incur operating losses and that we will need to opportunistically raise additional capital to support the continued development and commercialization of the Aurora Driver.” - Aurora Form 10-K, 2024
- Currently have a fleet size of 3 trucks despite earlier claims to have thousands of trucks by the end of 2027
 - CEO Urmson claimed they would have “tens of driverless trucks” by the end of 2025
 - It is improbable that they will even have ten driverless trucks

Scaling

- Aurora’s highway scaling is happening on a delayed trajectory
- “Autonomous truck company Aurora Innovation says it won’t start hauling freight without humans on board until April of next year, a delay from previous statements that commercial service would begin by the end of 2024.” – AP News (Oct. 30, 2024)
- “Aurora plans to expand its driverless service to El Paso, Texas and Phoenix, Arizona by the end of 2025.” – Aurora Innovation, Investor Relations Press Release, May 1, 2025.
 - They will not be able to expand to Phoenix by the end of the year
- While Aurora has made progress, it is insufficient and far behind earlier roadmaps

Scaling Hubs

- Aurora’s business model revolves around building out terminals and having autonomous trucks haul goods between these terminals on highways
- Building out these hubs is expensive and risky
- Aurora is relying on others to build out the terminals but it’s unclear who will do so
- “Similarly, we expect to partner with other third parties who will own and operate terminal facilities, but we may determine that we will need to own or operate more of these facilities ourselves. Such difficulties could have adverse impacts on our business, prospects, financial condition, and growth potential.” – Aurora Form 10-Q, Q1 2023
- “Following this initial phase, we expect to ultimately commercialize the Aurora Driver in a Driver as a Service (“DaaS”) business model, in which we will supply self-driving technology and earn revenue on a fee per mile basis. In this second phase, we do not intend to own nor operate large vehicle fleets ourselves. We will partner with automotive companies, fleet operators, and other third parties to commercialize and support Aurora Driver-powered vehicles” – Aurora Form 10-K, 2024

Scaling Hubs

- It is possible for a terminal builder and operator to make this business model viable, but it's dependent on having these terminals work with other autonomous trucks
- Currently, there are not enough autonomous trucks because of the issues with this industry outlined earlier
- Effectively, this model only works if there are many competitors

OEM Partnerships

- Aurora relies on two primary OEM partnerships: Volvo and PACCAR

Volvo

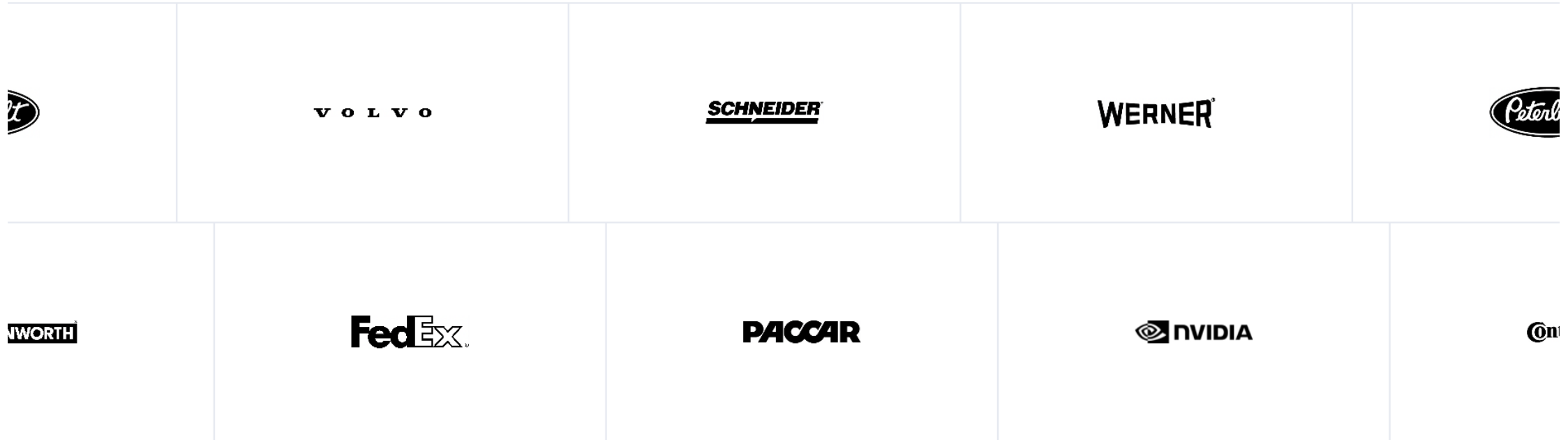
- Current 20 Volvo VNLs slated for year end are for development only until Volvo is comfortable
 - It doesn't appear they will be comfortable any time soon
- Volvo's trucks did not even make an appearance in the commercial launch
- Volvo, through its Autonomous Solutions division, has also been an investor in Waabi, an Aurora competitor

PACCAR

- Requested a front-seat for human observers
- Did not endorse for commercial launch

Nvidia “Partnership”

- Proudly displays Nvidia as a partner on their website



Nvidia “Partnership”

- However, this “partnership” is from CES 2018
 - It is a strategic technology partnership, not an equity stake or JV
- Their partnership does not extend beyond simply agreeing to use Nvidia chips
 - Virtually all autonomous vehicle companies use Nvidia chips
 - A 14-year-old kid playing Minecraft on his computer uses Nvidia chips too
- Nvidia chips and architecture are the best option for AVs. In all likelihood, they would’ve used Nvidia chips anyway

Stiff Competition

- Aurora is ahead of its competition but there are many competitors
- Torc Robotics, acquired by Daimler Benz in 2019
- Waabi (backed by Volvo)
- Kodiak AI
- Tesla could potentially be a future competitor with their semis

Shareholder Dilution

- “The Company’s operations are principally funded by available liquidity from cash, cash equivalents and investments. Management expects to continue to incur operating losses and that the Company will need to opportunistically raise additional capital to support the continued development and commercialization of the Aurora Driver.” – Aurora Form 10-Q (June 30, 2025)
- “During the six months ended June 30, 2025, the Company offered and sold 67 million shares of Class A common stock through the ATM Program for net proceeds of \$399 million after transaction costs.” – Aurora Form 10-Q (June 30, 2025)
- The company is expected to have a decrease in assets and an increase in liabilities over the next 2 years leading to a decrease in book value.
- Share issuance dilutes existing shareholders and reduces book value per share

Silly Valuation

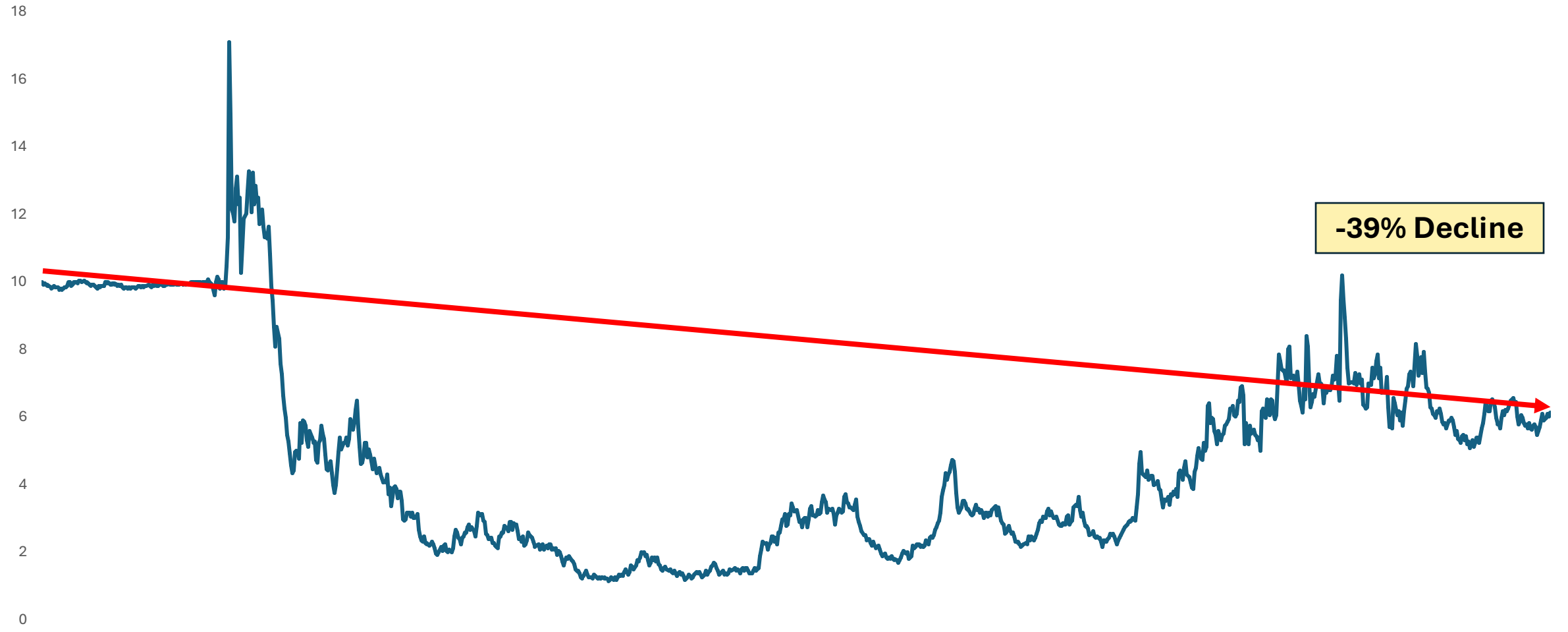
- No revenue and expected to post gross losses for 2026 at least
 - Management claims they'll post a gross profit in 2027 though it seems unlikely
- Trades at over 5.5x P/B
 - No intangibles that justify this valuation
- Market capitalization over \$10 billion
- How much is a pre-revenue company that is actively burning hundreds of millions of dollars worth today?
- If you could buy the company outright right now, would you take on that burden?
 - Buying a piece is not much different than buying the whole thing

The Market Is Starting To See The Problems

- The stock has fallen almost 40% from its February highs while the rest of the market has risen almost 9% over the same period



Stock Performance Since May 2021 IPO



Insider Activity

- Co-founder Sterling Anderson who owns 44.8 million Class A and Class B Aurora shares has left the company and has previously sold 8 million shares
- LinkedIn founder Reid Hoffman, an Aurora director, sold millions of shares in November 2024
- Uber CEO Dara Khosrowshahi resigned from the board in January
 - Uber announced \$1.0 billion in notes exchangeable into Aurora shares

Challenges to the Short Position

There are two requirements for this short to fail in the near term

1. A flood of easy money (lower interest rates, QE, fiscal stimulus, etc.)
 1. The Fed is unlikely to turn on the money printer since inflation is running well above their inflation target. The labor market is cooling but not enough for them to panic
2. Investor appetite for AI turns into irrational exuberance
 1. An AI bubble is being discussed in the news every day. As long as people are worried, it will not be irrational

As neither of these conditions are likely to happen, there doesn't appear to be meaningful downside to this position.

Summary

- ✗ TAM is entirely dependent on L5 autonomy which is still years away with no concrete evidence to support Aurora will be the first trucking company to reach it or whether they'll ever reach it at all
- ✗ Need to build out expensive terminals which Aurora says will be done by third parties, but there are no publicly announced third parties
- ✗ Autonomous trucking is far more expensive and will remain so for the near future
 - ✗ Even further out, drayage costs prevent short-route autonomous trucking from being profitable
- ✗ Current market cap is over \$10 billion with a P/B over 5x
- ✗ Stock price has already declined significantly since its peak