DVN

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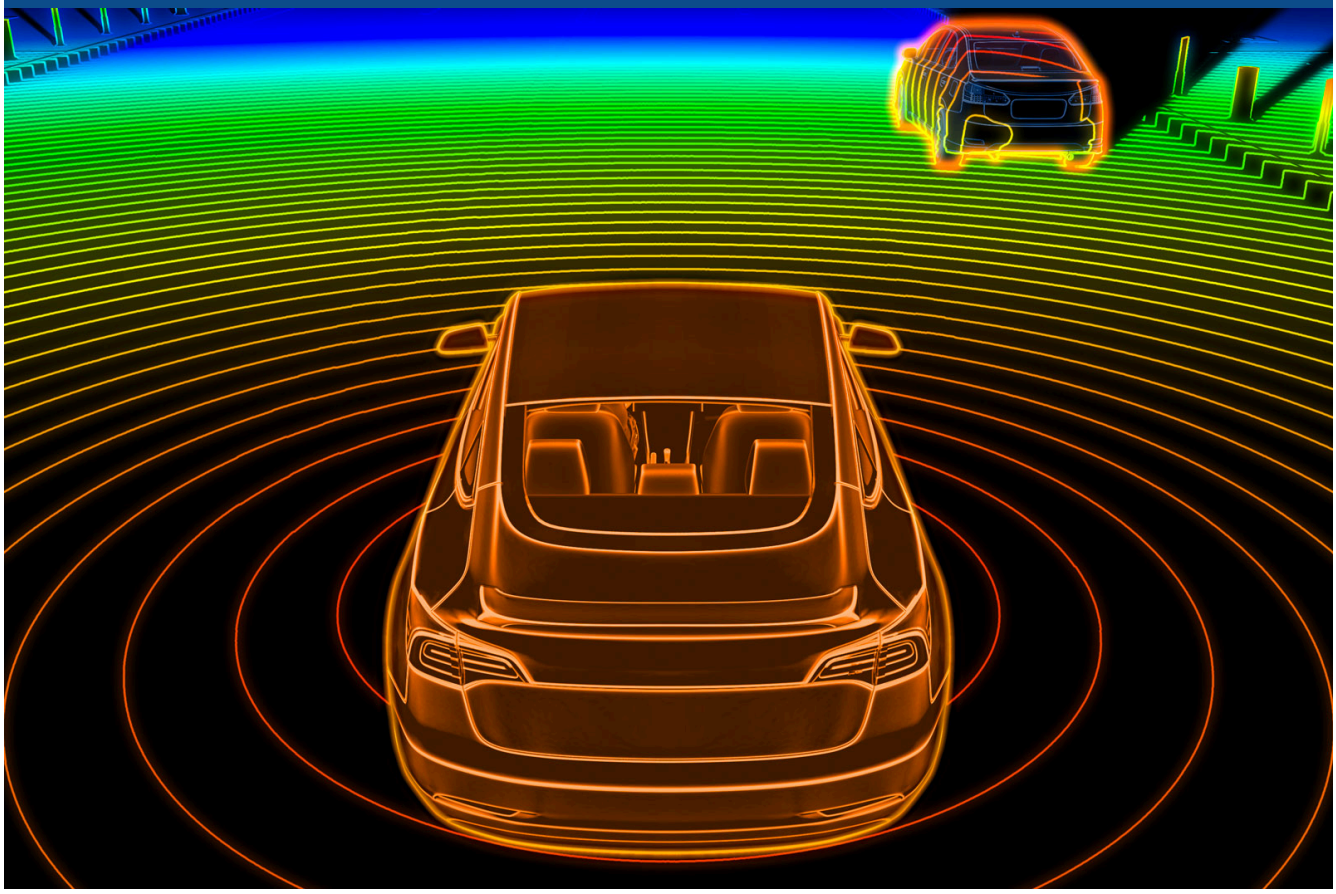
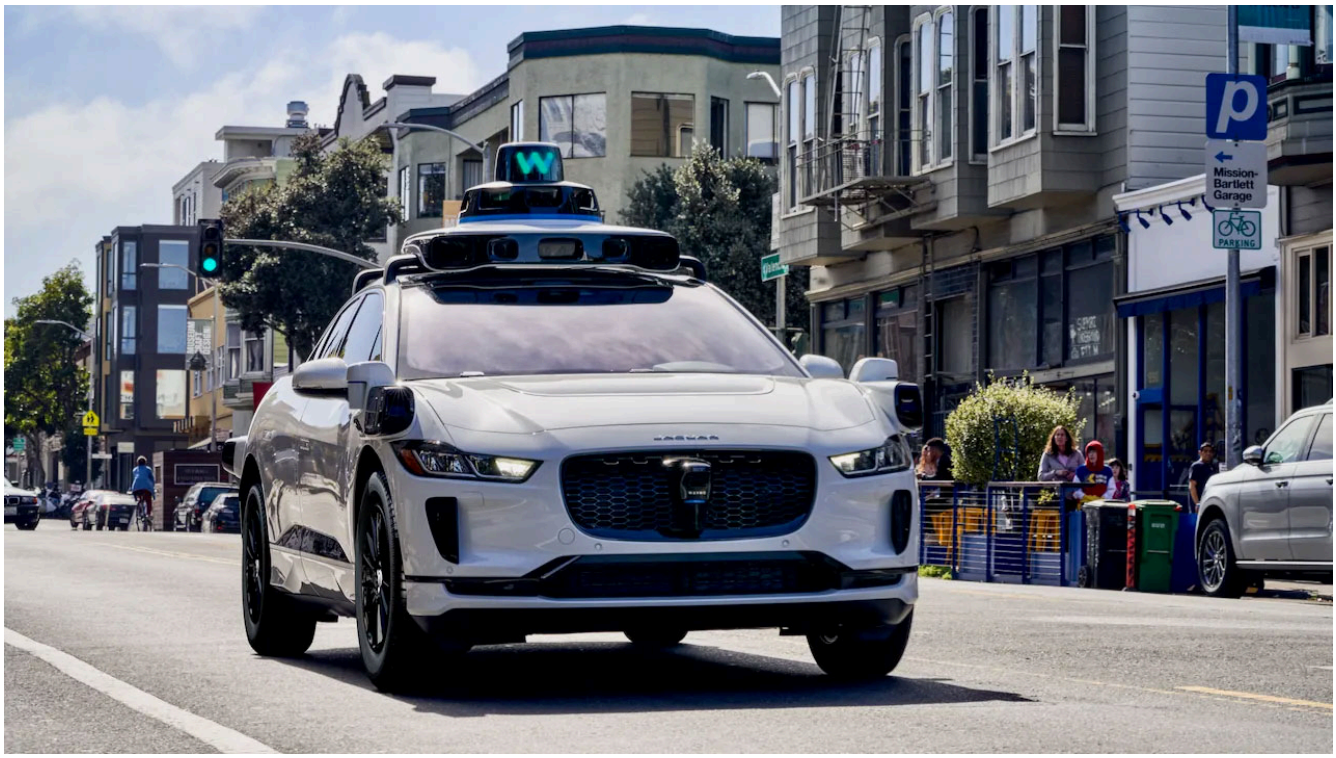


EDITORIAL

Automotive Market Outlook



Global auto shipments were up slightly during Q1 ’25 and many OEMs reported increasing shipments of L2 ADAS, however outlooks for the rest of the year are uncertain primarily due to tariffs.

Several OEMs reported significantly lower Q1 profits including BMW, Toyota, Honda and Nissan. Rivian cut Q2 delivery guidance due to tariffs and Ford hiked the price of the Mexico built Mustang EV and other models in the US market. Bosch and other tier1’s are in talks with the Trump administration on car parts tariffs.

GM Q1 sales were up 2% y/y. EV Share increased to 12% in US making them #2 behind Tesla. The impact of tariffs still remains fluid. GM remains committed to adding features to Super Cruise and the integration of the Cruise team into their operations has been successful. GM will release more details of its L3 offerings later this year. Super Cruise reached 230K fleet size in Q1.

Ford Q1 profit exceeded expectations, but revenue declined 5% y/y. Supply chain disruptions could impact production and overall market pricing is seen rising around 1% in 2H. Tariff uncertainties have a potential impact to earnings of $2.5B in 2025 with cost savings offsets of $1B (including price increases). Blue Cruise has reached 370M miles driven and Ford is on track for L3 and evaluating L4. Ford has a program to incentive dealers to sell renewal subscriptions for Blue Cruise. L3 is being done by a different team and will be branded differently.

Geely reported record quarterly sales volumes and revenues of 72.5B Yuan, up 25% y/y, and profits up 264% as Chinese OEMs continue to gain share in their domestic and other worldwide markets.

Continental's Q1 results showed a slight drop in automotive sales but the automotive group turned profitable on better pricing. Continental is planning to spin-off its automotive group. Autonomous Mobility represented almost half of its Q1 orders, including a major award for an advanced surround radar system from a North American customer. Despite a roughly 1% increase in WW vehicle production in Q1, Conti is projecting a 1-3% decline in overall vehicle production volumes in 2025 due to tariffs, with the biggest decline in North America. Commercial vehicle production is also projected flat to slightly down in North America.

Robotaxi rollouts continue to scale up from multiple companies as you see in some of the news stories below – volumes are still relatively small, but gaining momentum, although the L2+ passenger car market remains where the sensor and compute volume is for the foreseeable future.

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SPECIAL REPORT

Special Report: A Detailed Look at Pony.AI

Pony.ai was founded by James Peng and Tiacheng Lou, who were software developers for Baidu, in Silicon Valley. The company has licenses for robotaxi services in Beijing and Guangzhou and recently announced partnerships with expand internationally in cities such as Singapore, Seoul and Luxembourg and with Uber in the Middle East.

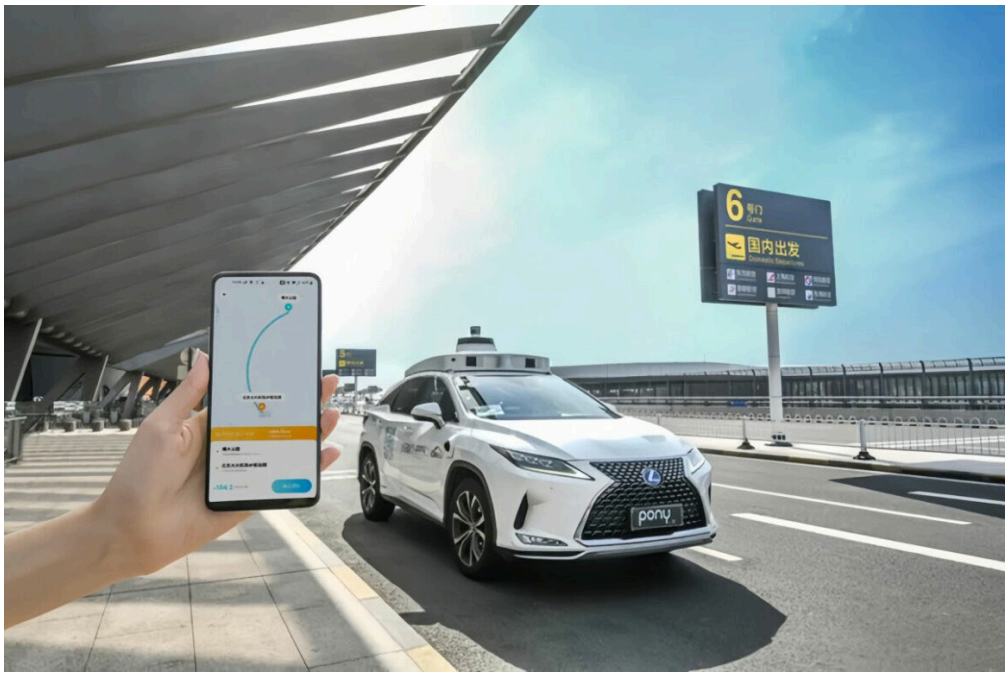
Pony has also held California DMW permits for testing in Irvine and the Bay Area (on specified streets) since 2021, although the permit was suspended after a car hit a traffic sign after a right turn and the company went back to testing in California with safety drivers in 2023.

Pony signed an agreement with GAC-Toyota to build robotaxis in China in 2023, after a $400M investment in the company from Toyota in 2020. The company went public in 2024 with a listing on the NASDAQ and raised $260M. The first robotaxi is based on Toyota's bZ4X EV and uses 4xHesai AT128 lidar plus 14 cameras and 4 radars. Pony will also use other models from BAIC and GAC. The AI software runs on an Nvidia Orin compute platform with 4 DRIVE Orin chips (1016 TOPS).

Optimized inference models allow L4 driving on up to 2-5x less compute power than competitive models. The estimated lifespan of the Toyota EV is 10 years/600K km (372K miles). Pony also has a proprietary sensor cleaning system.

Pony has an AI foundation model that is used to create a simulation environment capable of generating 10B km of test data weekly. The vehicles are monitored by remote assistants. and commercial insurance costs roughly 50% of what traditional taxi insurance would be. At the end of Q1, over 7 million km of real-world driverless operations was achieved.

Pony's Daxing airport service has a fixed pricing mechanism (similar to existing airport taxi services) and users can book the service up to 1 day in advance with over 1000 drop-off/pick-up points.



On May 20th , 2025, Pony reported its Q1 earnings and expressed confidence to scale the fleet to 1000 vehicles by the end of the year, which is projected to be the break-even point for robotaxi services. It's 7th generation autonomous driving system, reduces costs by 70%. Revenue for paid robotaxi service was up more than 3X to $1.7M and paid rides were up 800%. Robotruck revenues were $7.8M and licensing/software $4.5M. Gross profit was $2.3M on total revenue of $14M and overall loss from operations was $56M. The company remains well capitalized with $738M liquidity.

Pony grew its user base 20% though its own app, but also signed an agreement with Tencent to give it access to their mobility services, as well as Uber for international expansion.

The company continues to expand its international partnerships and most recently announced a deal with Dubai's RTA to deploy a robotaxi fleet. Pilot operations will start this year, with commercial rollout in 2026.

Pony also has a solution for autonomous trucking and partnered with Sany in China rolling out models in 2022 equipped with 6 Lidars, 3 radars and 6 cameras. Around 200 trucks are currently in operation.

ADAS/AD APPLICATIONS - BUSINESS NEWSBITES

ADAS/AD Business and Applications – News Bites

JD Power Survey Shows Value of ADAS
JD Power, a consumer automotive survey company, published a recent study that showed that almost 50% of new car buyers said that they were able to avoid an accident in the first three months due to ADAS features. In particular, the blind spot monitor was cited as helping prevent a crash, followed by backup camera/parking sensors and forward collision alert.

Ford Scales Back Connected Car Software Team

Ford is cutting back its connected car software team by around 5%. Ford had decided to stop the development of a Tesla-like next gen software architecture (FNV4) due to high costs and delays and is instead focusing on the FNV3 zonal architecture that will first be featured on a new EV from Ford's California skunk works team. Ford currently has 800,000 paid software subscribers, mostly from its commercial vehicle business. GM also recently laid off employees in its software and services organization – showing how hard it has been for traditional OEMs to catch up with leaders like Tesla and Rivian in next generation software platforms.

Magna Q1 25 Update

Q1 25 sales were down 8% y/y compared to a 3% decline in light vehicle production (North America was down and China was up). Magna was awarded a new complete ADAS system with a North American OEM. 75%-80% of its parts are USMCA compliant so the estimated direct tariff impact is somewhat limited and currently $250M for 2025.

iMotion JV for ADAS in Malaysia

iMotion Singapore signed a JV agreement with Delloyd in Malaysia for manufacturing and sales of ADAS products. The goal is to expand into markets in the ASEAN region.

Elektrobit and Metoak Partner on SDV Ecosystem

Metoak will use Elektrobit's EB Corbos Linux OS which is intended to accommodate quick updates and reduced maintenance for safety applications versus current open source OS. The Elektrobit approach uses a layer within the hypervisor that sits under the Linux OS that monitors and enforces safety in the Linux code. Metoak support the OS with its stereo vision chips, modules and perception software and aims to create a next generation of ADAS controllers.

TI's New mmWave Radar Sensor extends detection range

Radar is increasingly being deployed in L2+ systems and TI's latest AWR2944P sensor improves SNR and extends detection range and angular resolution. A hardware accelerator is integrated with Arm Cortex-R5F CPU, TI C66x DSP and radar hardware accelerator (HWA2.1) for FFT, log magnitude, memory compression and other functions. The device is designed to support NCAP + Automated Driving requirements.

Xpeng upgrades ADAS Capabilities

Xpeng recently introduced four new variants of its MONA M03 sedan, with the higher spec versions using dual Orix-X chips for its ADAS systems, with computing power of up to 508 TOPS. The vehicles use 27 sensors, including cameras, radars and ultrasound and can drive without HD maps or predefined routes – which is a significant upgrade in the <$20,000 segment.

California Law Requiring Safety Drivers Advances

The Teamsters Union is backing a California State Bill (AB33) that has now passed the State Assembly that would require a safety driver in autonomous vehicles engaged in commercial goods delivery, arguing that this would protect middle class jobs. The bill next goes to the state Senate and if it passes there, would go to the governor's desk for signature. This is another example of regulatory hurdles that fully autonomous operation could face in many parts of the world.

Waymo to add 2K Robotaxis in 2026
Waymo plans to add 2,000 robotaxis to its fleet by 2026, increasing its total fleet size from 1,500 to 3,500 vehicles. This expansion will involve retrofitting Jaguar I-PACE vehicles with autonomous technology at a new factory in Mesa, Arizona, in partnership with Magna. Waymo is also testing new models like the Hyundai Ioniq 5 and the Zeekr RT for future fleet additions. Waymo is currently leading the global robotaxi rollout and we continue to see the fleet rapidly expand through the end of this decade – Zoox, Wayve, Tesla plus the China players should also start to expand commercial deployments and it is easy to see how we could reach 100,000's of these vehicles deployed per year by 2030.

Tier IV selected by Japanese Gov to create dataset for autonomous driving project
The Japanese government's Mobility DX strategy aims to establish profitable robotaxi services in the near-term. Tier IV will develop standards for L4 driving, create an open dataset and collaborate with other consortium members to help bring L4 driving to Japan. Tier IV has been collaborating with Carnegie Mellon on AI models. Tier IV also rolled out a new autonomous test vehicle development kit to make it easier for partners to validate software on a real vehicle.

Uber and Momenta to Collaborate
The companies announced a collaboration which will lead to initial robotaxi deployments in 2026 in Europe with safety drivers. Many of the major robotaxi players have been partnering with Uber to leverage the platforms rider base and it makes sense for Uber to spread its bets on which robotaxi services will eventually dominate the market and have third parties deploy fleets using their capital as these services roll-out.

Baidu Expands Robotaxi Service to Europe and Türkiye

Baidu plans to start testing its Apollo Go service in Switzerland and Türkiye. Apollo Go started in China in 2013 and has become one of the most extensive robotaxi services in that market serving passengers in 10 mainland cities. Baidu plans to work with Swiss Post's Post Auto. Chinese robotaxi providers are starting to expand globally with WeRide working with Uber in Abu Dhabi and Dubai and Pony AI and Momenta also working with Uber in Europe.

SAIC Mobility raises 1.3B Yuan for expansion

SAIC mobility currently operates a ride hailing network in 100 Chinese cities and plans to expand into overseas markets. Its Robotaxi service is gaining traction with the first service in operation since 2021. SAIC is collaborating in Momenta to launch a robotaxi fleet in Shanghai, aiming to scale to 200 vehicles by 2026.

Elon Musk Confirms Robotaxi Rollout

Elon Musk was interviewed on CNBC and confirmed they plan to roll out Robotaxi service in Austin in June. The fleet will start with around 10 vehicles, and based on performance, will expand out to 20,30,40 after a few weeks and a thousand within a few months. He plans to have 100,000's of (unsupervised) full self-driving vehicles on the road by the end of next year (including existing Tesla cars that will be software upgraded). The Cybercab itself will start production next year. In another recent interview, Tesla's head of self-drive admitted that they were two years behind Waymo, but had a lower cost structure and could scale faster. Considering that Waymo already has a fleet of hundreds of vehicles and is providing 250,000 rides per week, that is not a big surprise.

Changan/DEEPAL launches SUV with Haiwei ADAS

Changan's DEEPAL EV division launched a flagship Hybrid/EV using Hawei's Qiankun ADAS system. The Haiwei system supports ACC, LKA and both Highway and Urban NOA – using Huawei's' 192 line LiDAR. The system will be upgraded to Huawei's ADS 4.0 in 2H '25 that lessens end-end latency for braking by 30% and enhances active safety capabilities. BYD and BAIC have also used the Huawei technology and both Audi and Toyota have said they would use Huawei in China, indicating a growing presence of China's largest tech company in this space.

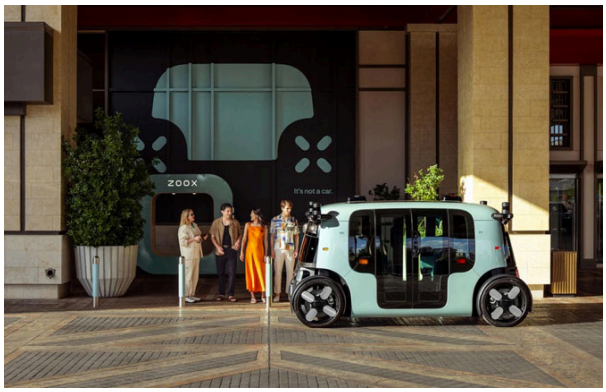
WeRide launches Robobus paid service in Guangzhou

WeRide will charge for the service in Guangzhou and is an expansion of the commercialization of its L4 autonomous driving system that is already operating in China, France, Switzerland, Singapore and Japan. WeRide uses and end-end Ai model and the bus uses cameras, radar and lidars to navigate safely. WeRide has used both Hesai and Robosense lidar.

Dongfeng and Huawei Deepen Strategic Partnership

Donfeng will collaborate with Huawei in key areas such as intelligent driving assistance, smart cockpit systems, vehicle control, connectivity, and electronic components. Huawei, in turn, will bring its expertise in cloud computing, AI, big data, and the industrial Internet of Things to support Dongfeng Motor in digitizing and upgrading its entire value chain—from R&D and manufacturing to supply chain management. The partnership also includes plans to establish a joint innovation lab focused on developing in-car software platforms, ADAS technologies, and AI applications for various scenarios. Huawei has been significantly increasing its investment and presence in the automotive business and revenue in this segment increased almost 500% in 2024.

May Mobility Partnership with ITOCHU
ITOCHU is a leading Japanese trading company and recently announced a partnership with May Mobility to accelerate driverless vehicle deployments. May will enhance its tele-assist capability with ITOCHUs customer support division that will help May roll out deployments with Uber and Lyft across the US. Tele-assist is a key technology that allows robotaxi services to rollout.



Zoox Partners with Resort World in Las Vegas
Zoox will begin public service in Vegas later this year and will partner with Resorts World with dedicated pickup and drop-off zones at the resort and connect the resort with other key destinations. Zoox also announced they are expanding service to Atlanta – its 7th city for testing operations.

Auve Tech Upgrades L4 Software
Auve tech is based in Estonia and has an L4 shuttle (MiCa) which has been tested in Estonia, Finland, Poland, Japan Greece the Netherlands and most recently Palm Beach. The latest software stack is designed to enhance navigation, prediction detection of pedestrians and other objects.

Germany Showcases L4 Truck Project
The ATLAS-L4 project is a collaboration of industry partners including MAN, Knorr-Bremse, Bosch and others, developed L4 trucks capable of driving pre-defined routes between logistics centers. Germany's autonomous driving law allows testing on public highways with a safety driver.

Aurora to put Human observer back in the driver's seat

After three weeks of fully autonomous operation, Aurora is putting a human "observer" back in the driver seat of its trucks in Texas. Two driverless trucks had been operating, limited to daylight hours and good weather conditions. A human had to be on-board however in the case that the truck needed to pull over onto the shoulder – in order to deploy warning triangles. It is also reported that the truck's manufacturer PACCAR had requested someone back in the driver's seat, due to the prototype nature of some of the hardware being used. It is clear that there are still some regulatory hurdles to be solved before we see fully driverless operation, but Aurora has said that it is still planning to expand routes from Dallas to El Paso and Phoenix.

Waymo Recalling 1200 cars for software update

Following a NHTSA probe after at least 16 minor collisions with fences and other barriers, Waymo is updating its gen 5 driving software. Zoox also issued a "recall" after colliding with another vehicle at an intersection after misjudging the other driver's intentions.