

Thematic investing series

Positioning portfolios for long-term
transformational change

June 2026

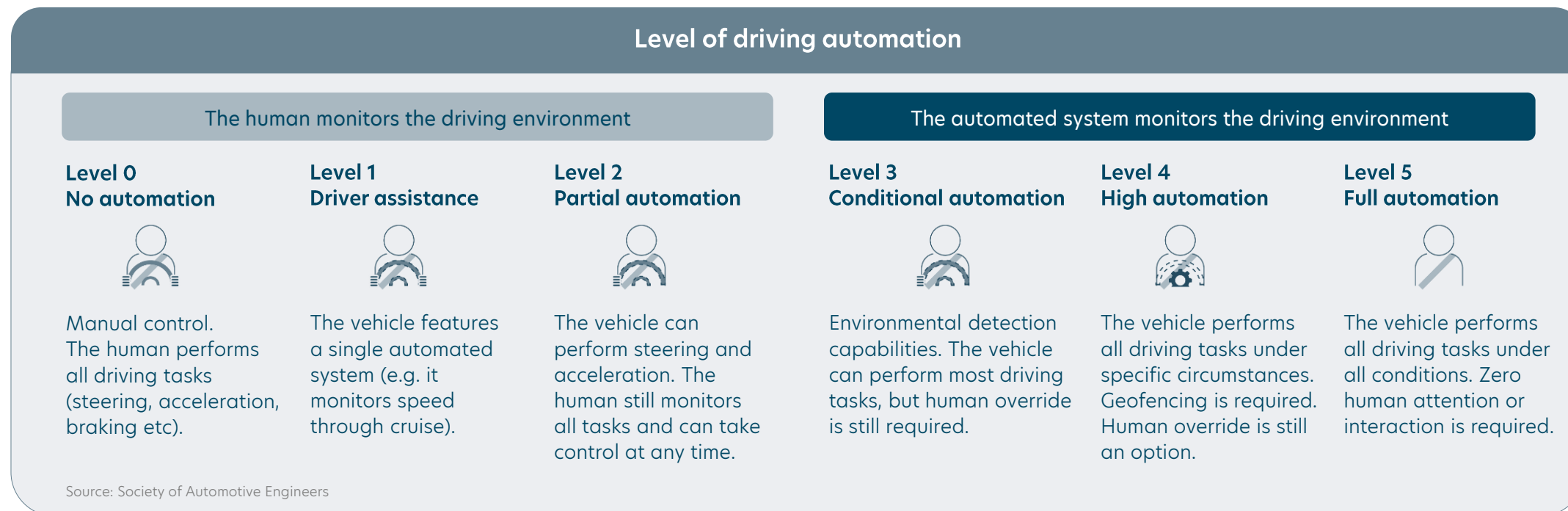
Autonomous driving

Where the road to innovation
meets investible opportunity



Understanding the levels of autonomous driving

- Autonomous driving capability is defined globally by the Society of Automotive Engineers (SAE) framework, which segments automation into six levels, from driver-only control (level 0) to full automation (level 5).
- Most vehicles on the road today fall into Levels 1-2, where the human remains responsible for monitoring the environment.
- We expect technology and regulatory advances to propel wide usage to **Level 3-4, which broadens the future opportunity set for investors.**



Autonomous driving is not a single technology

- It is a system built on several interdependent layers of hardware, software and connectivity that must work together in real time.
- Some parts of the stack are already becoming commercially relevant, while others remain more dependent on regulatory approval, cost improvement and wider adoption.

At a high level, the technology backbone of autonomous driving can be grouped into three core building blocks:



Sensors

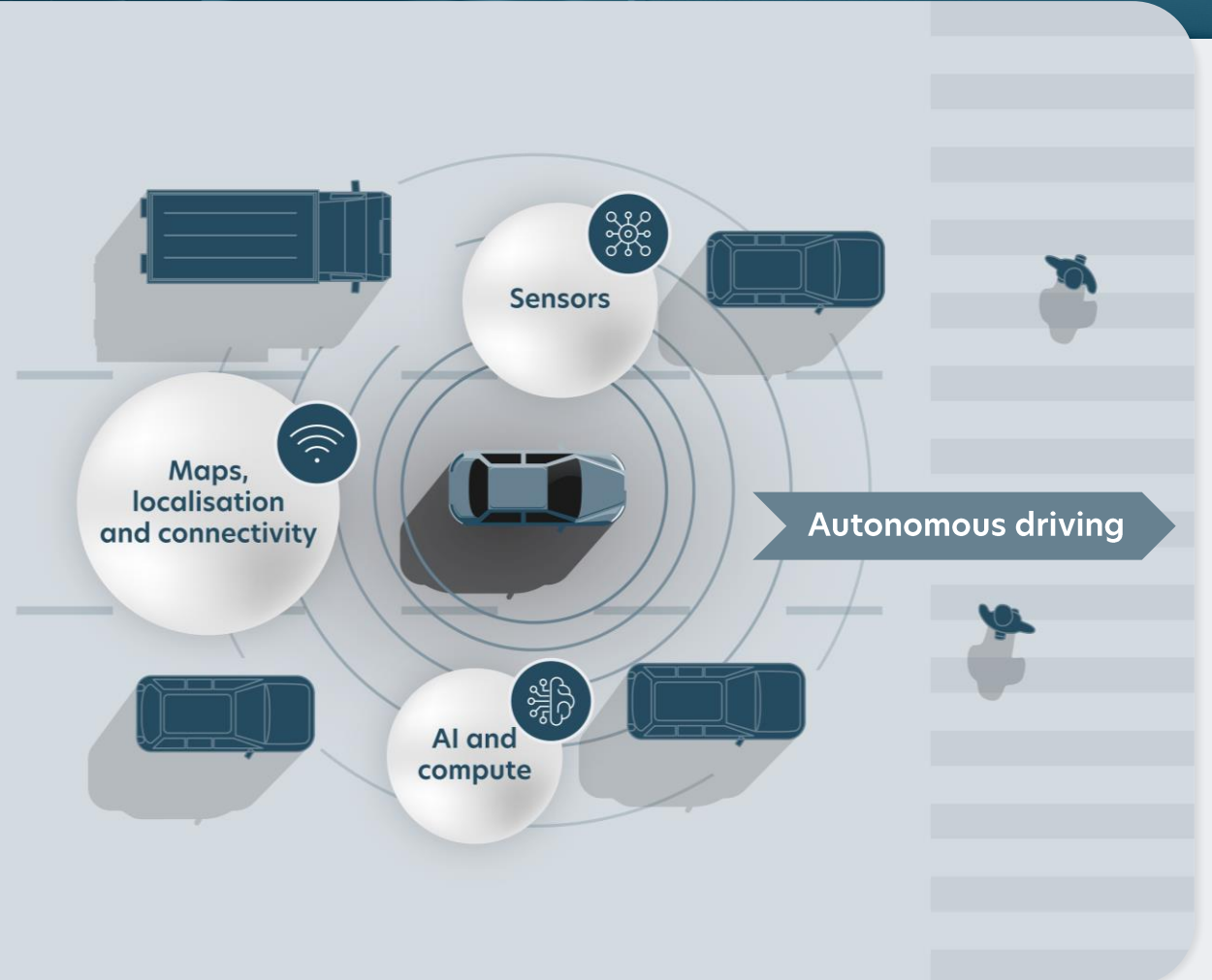


Compute and AI models



Mapping, localisation and connectivity

Together, these layers determine whether a vehicle can understand its surroundings, make timely decisions and operate safely in real-world conditions.



Sensor suite: cameras, radar and LiDAR

Modern autonomous systems rely on three main technologies.



Cameras

Provide high-resolution visual data essential for lane detection and classification.



Radar

Contributes robustness in adverse weather and is particularly effective for tracking velocity and distance.



LiDAR

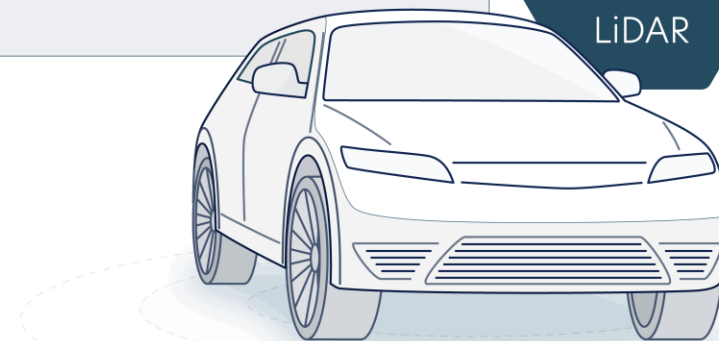
Adds precise three-dimensional depth information, supporting object contour detection and long-range accuracy.

By design, these sensors provide overlapping functions, creating redundancy that enhances detection accuracy, thus improving safety and supporting regulatory acceptance.

Sensor suite of autonomous driving

Why sensors matter?

- Redundancy improves safety and regulatory acceptance
- Cost declines support mass-market deployment
- Integration with compute/software determines actual capability



Compute and AI models

- The autonomous vehicle's "brain" relies on automotive System-on-Chips (SoCs).
- They handle perception, localisation, prediction, and planning with efficient power and thermal constraints.
- The key here is to ensure automotive-grade SoCs can handle perception to prediction to planning at low latency, allowing for split-second decisions.
- Fleet learning and Over-The-Air (OTA) updates allow models to improve continuously, enhancing safety and usability as new technologies improve over time.

A computer on wheels

The average car is packed with 1,400 semiconductors that control everything from airbags to the engine. Modern cars simply cannot run without chips.

● Safety

Airbag controls
Collision-avoidance
Parking-assist
Power locks
Braking-assist
Tire-pressure-monitoring
Traction-control system

● Powertrain

Engine control
Fuel-injection system
Hybrid-electric control
Transmission control

● Electrical

Starter
Lighting system
Vehicle-diagnostics

● Infotainment

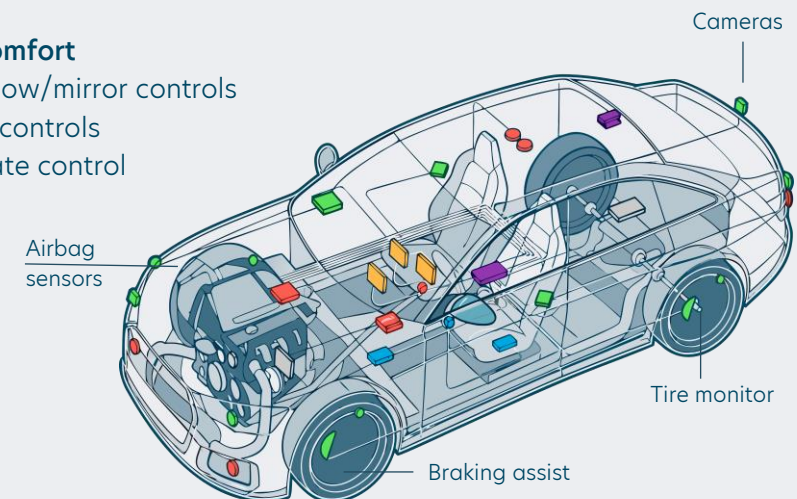
Audio/video
Driver display
Navigation

● Comfort

Window/mirror controls
Seat controls
Climate control

● Connectivity

Controller Area Network (CAN)
Broadband, WIFI, Bluetooth
Over-the-air software updates



Source: AlixPartners
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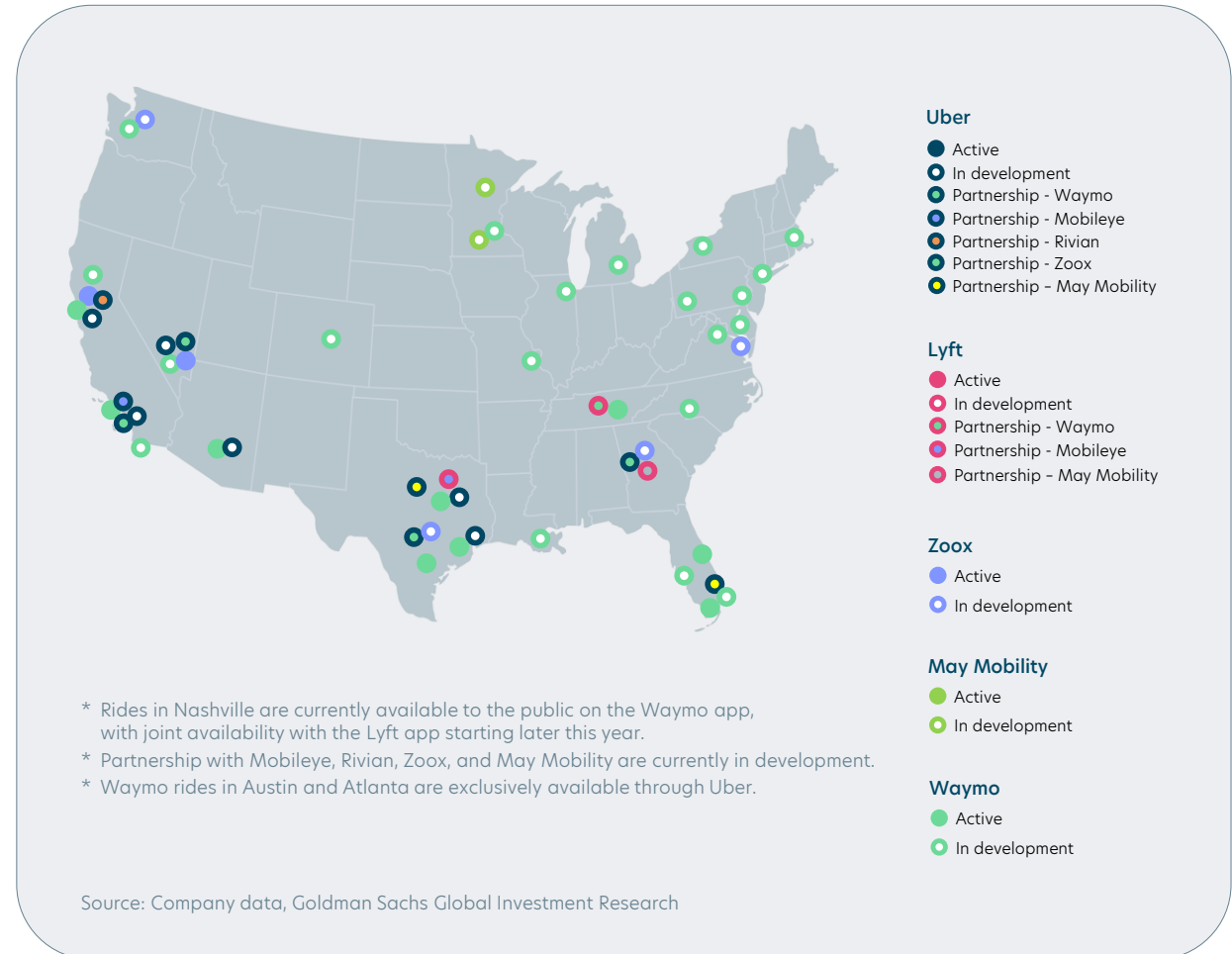
Maps, localisation and connectivity

- High-Definition (HD) maps are a foundational layer for higher-level autonomy (Level 3-4). They provide information such as lane geometry, traffic rules and static landmarks that sensors alone cannot reliably infer in real time.
- V2X connectivity (vehicle-to-vehicle/infrastructure) supports information exchange and cooperative perception, especially in constrained urban zones.
- This supports progress into levels 3-4, where certain areas in cities can be geofenced for robotaxi pilot programs.



The regulatory approach to autonomous driving remains mixed

- Regulatory changes are evolving unevenly across the globe as policymakers must balance innovation with safety and public opinion.
- We have seen some regulators (US and China) take the approach of geofencing select cities for pilot programs, while Europe maintains a more conservative, type-approval pathway.
- For private vehicles, level 3 features on motorways are broadening, subject to speed and environmental constraints.
- Standards and key safety metrics still diverge across countries.
- However, the **direction continues to be constructive**, and we view this as a positive step forward for the theme.



Near-term monetisation should come from level 2 to level 3 features

The Total Addressable Market (TAM) is expected to grow across:



Hardware content per vehicle
Sensors, compute, cameras

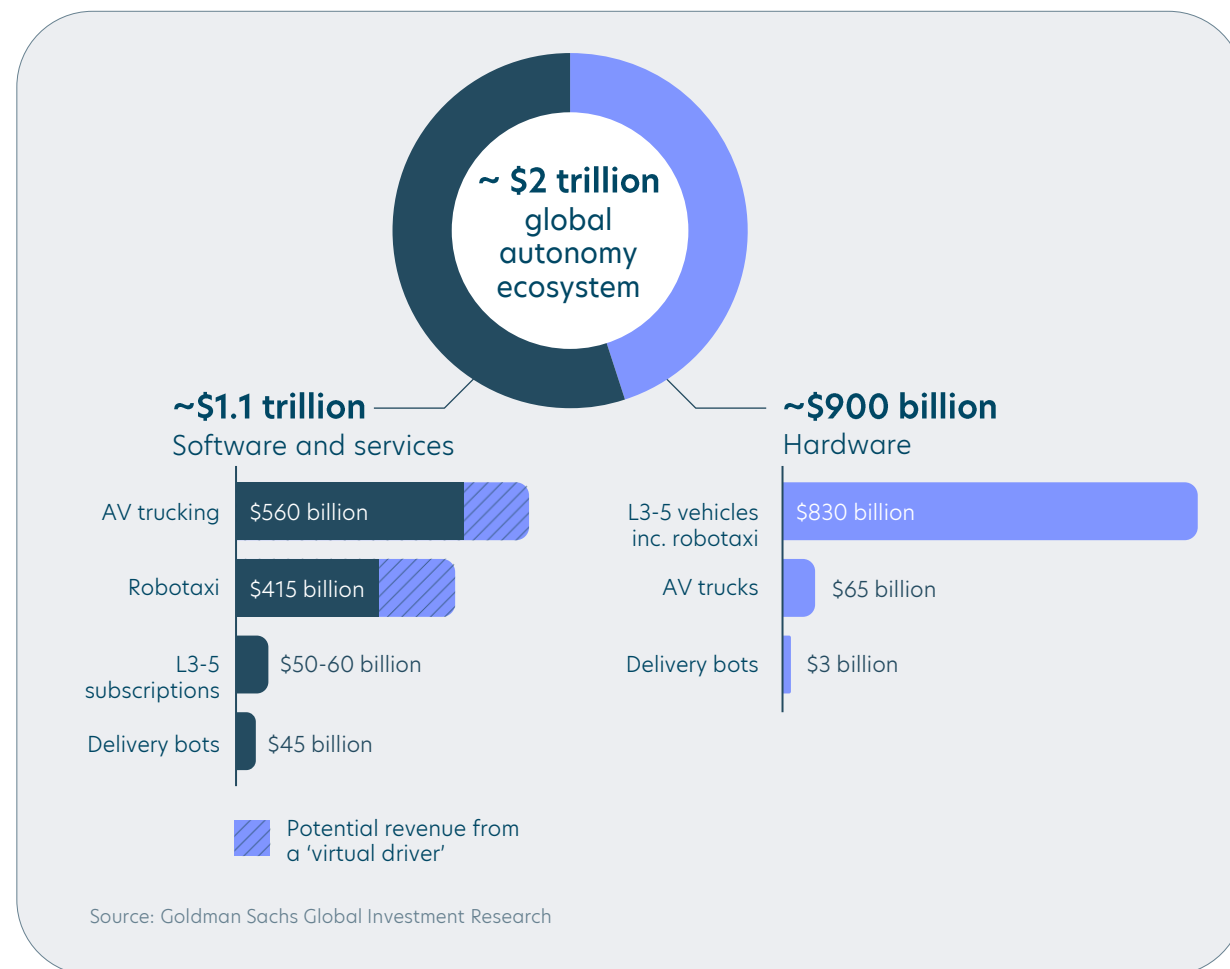


Software licensing/subscriptions
Per vehicle/mile



Platform revenues
Robotaxi fares, logistics per mile contracts

- However, we think that autonomy adoption will be sequenced rather than uniform.
- Near-term monetisation is likely to come first from Advanced Driver Assistance Systems (**ADAS**) and level 2/2+ subscription features, with level 3 expanding selectively in approved motorway operating domains.



Continue the autonomous driving conversation

Autonomous driving is moving from concept to selective deployment. The full publication explores where value may accrue, what risks still matter, and how investors can think about implementation.



Be selective

The theme is becoming more investible, but adoption is likely to develop in stages.



Look beyond robotaxis

Near-term value may sit in compute, software, sensors and ADAS.



Manage the risks

Regulation, safety, cost thresholds and cybersecurity remain key constraints.

Speak to your client advisor for the full autonomous driving thematic publication

[Contact Now](#)

In the full publication

- Maturity framework and timing assessment
- Value-chain opportunity map
- Bull, base and bear scenario analysis
- Key risks across regulation, safety, cost and cybersecurity
- Portfolio implementation considerations

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