

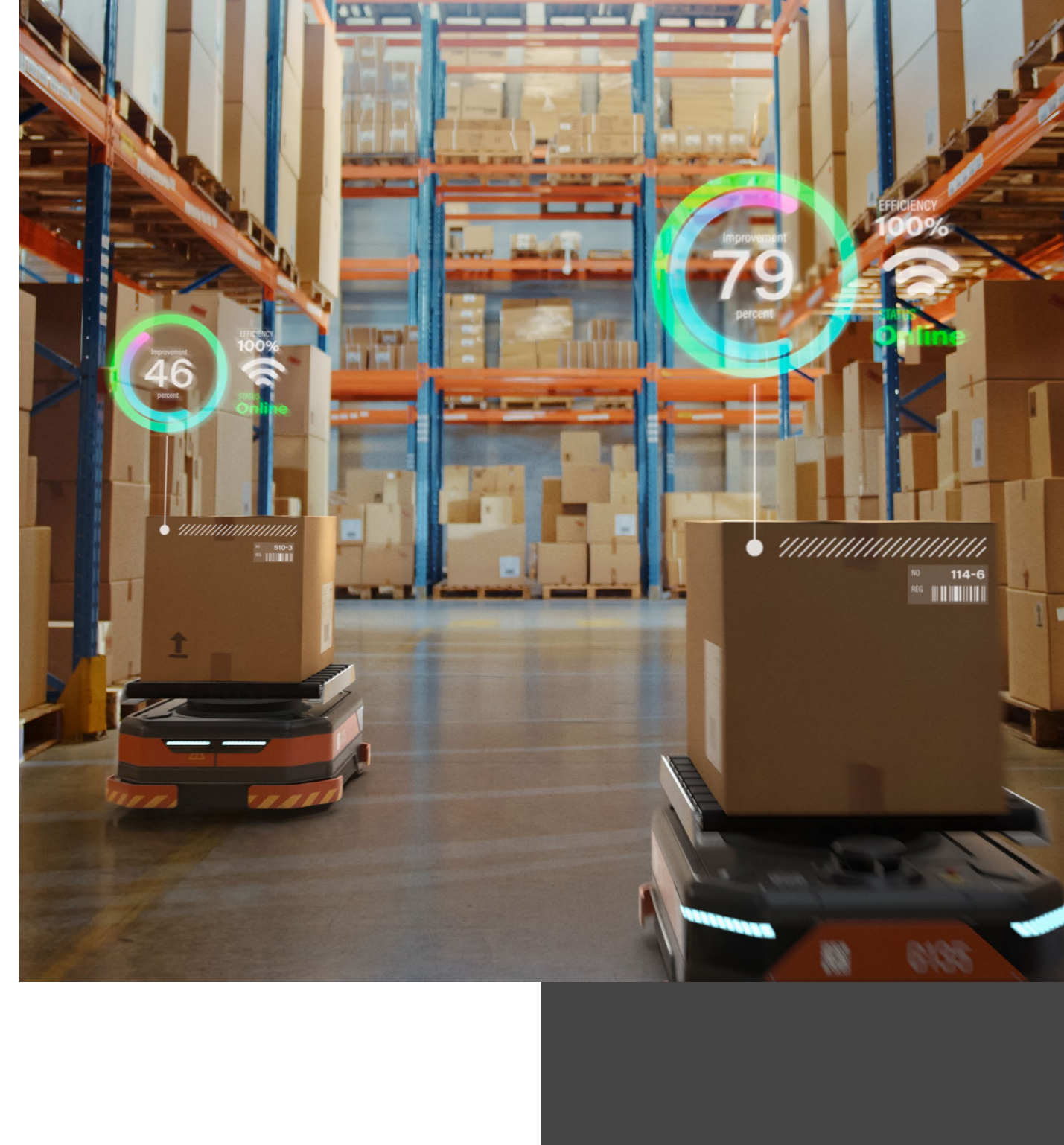
# Unlocking remarkable autonomous vehicle opportunities with 5G



The consumer autonomous vehicles (AV) market will offer immense revenue opportunities for communications service providers (CSPs). However, much AV technology is still in the testing phase.

As such, the most significant and immediate monetization opportunities lie in supply chain operations and logistics.

Supply chain AV can be viewed as a steppingstone, allowing CSPs to learn, predict and address challenges in smaller, private 5G settings in smart factories, preparing for the future rollout of consumer AV.



## The supply chain 4.0 vision



Stakeholders will be able to collect, ingest, store, analyze and action data from a huge number of connected endpoints at various stages of the supply chain.



Artificial Intelligence (AI) and Machine Learning (ML) will be embedded in solutions, allowing stakeholders to interpret data and predict and plan for potential future scenarios.



Advanced robotics and automation will boost efficiency and automate tasks to improve workplace safety.



This multimodal system will involve a fully integrated network of different types of autonomous and semi-autonomous vehicles communicating with each other and their environment.

None of this would be possible – or at least, none of this would be achieved as efficiently and as cost-effectively – without 5G.

## The benefits of 5G for the supply chain 4.0

### Latency

- Mission-critical operations require instantaneous responses and ultra-low latency: 5G is 10x faster than 4G.

### Performance

- A connected environment will involve a large number of different use cases, each connected and managed efficiently and securely.
- Continuous performance and QoS can be achieved via network slicing, where 5G is utilized to dynamically partition capacity on a network.
- Each slice can be optimized in terms of resource allocation and network characteristics.

### Density of endpoints

- By 2025, there will likely be more than 27 billion IoT connections globally.
- 4G can only support around 2,000 connected endpoints per square kilometer. With 5G, this is increased to 1 million devices/km<sup>2</sup>.

### Real-time knowledge

- The high speeds, high throughput and high density of connections that 5G can enable will remove the lag that exists with 4G between data being generated, and data being acted upon.
- From logistics operations to inventory and warehouse and fleet management; 5G will enable seamless endpoint-to-endpoint communication, real-time responses and predictive maintenance and analytics.



## Solving challenges with Dell Technologies

At Dell Technologies, we have the experience and portfolio to enable network modernization; and the experience in the autonomous vehicles industry thanks to partners like AMD. We're enabling CSPs to harness 5G and accelerate the evolution to an autonomous supply chain ecosystem.

Advanced Driver Assistance System (ADAS) technology will be a critical part of this. ADAS features will increasingly work together and become more intelligent, eventually enabling full autonomy.

These include features such as:



## We're also working to address challenges

### Cost

We're helping to drive down costs, enabling CSPs to scale server usage up and down while only paying for what they use.

We're making open RAN viable via our solutions, bringing the performance of traditional RAN to this new model.

We're working with AMD to reduce power in the silicon, and we're pioneering technologies that reduce energy consumption.

Our portfolio of servers is helping CSPs to achieve:

- Faster and more competitive outcomes
- Efficient data center manageability
- End-to-end infrastructure security

All underpinned by our commitment to enabling 30x power reduction by 2025

### The data deluge

**25 billion**  
The number of IoT connections expected by 2025

**175 zettabytes**  
The volume of data generated annually by 2025

We're supporting and accelerating every stage of the data journey, from transport through analytics.

We're providing CSPs with the expertise and tools (including high performance compute platforms, data analytics solutions, caching capability and storage) to capitalize on the supply chain 4.0 data deluge.

## Enter the enterprise AV ecosystem with Dell Technologies

We're partnering with CSPs to help them enter the AV ecosystem and to grow sustainable businesses based on the autonomous supply chain model.

By offering strategic partnerships and a comprehensive edge portfolio, we're collaborating with CSPs to help them identify, develop and monetize new revenue opportunities in this space.

Addressing vehicle autonomy in the supply chain first will make the future rollout of AV much easier and allow for quicker ROI, at scale.

Leveraging our ADAS and wide portfolio solutions, stakeholders will be able to accelerate their AV journeys and progress to the next stage of automation.



Discover how our range of solutions is transforming networks, from RAN and core to edge and cloud.

[Find Out More](#)