

An aerial night view of a city, likely Tokyo, showing a dense urban landscape with numerous illuminated buildings and a complex network of elevated highways. A large, stylized orange graphic, resembling a thick, rounded letter 'W' or a similar shape, is overlaid on the right side of the image. The text 'LeasePlan' is positioned on the left side of this graphic.

LeasePlan

The future of fleet transportation

#whatsnext

The future of fleet has never been more exciting. New technologies and business models – like car subscription services, 5G technology and smart cities – could be both an opportunity for and threat to the fleet industry.

Here we look at the technology already shaping the automotive and fleet industries, what key trends are emerging as a result, and how we can embrace the change.

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What technology is on the horizon?

Augmented and virtual reality

Augmented Reality (AR) is where digital images are placed into a real-time image to make it look like the object is really there, and users interact with it by moving their phone or tablet, for example.

Virtual Reality (VR) goes one step further by creating a completely simulated environment.

No longer the preserve of top-flight Formula One teams, both technologies are already being used by motoring firms. Today, prospective car buyers can get behind the wheel from the comfort of their own home, and explore a model's finest details before placing an order.

VR, in particular, has enormous potential for driver training, providing access realistic demos of driving scenarios. It could range from general hazard perception to more specific scenarios, such as defensive driving, reaction tests and dealing with emergencies.

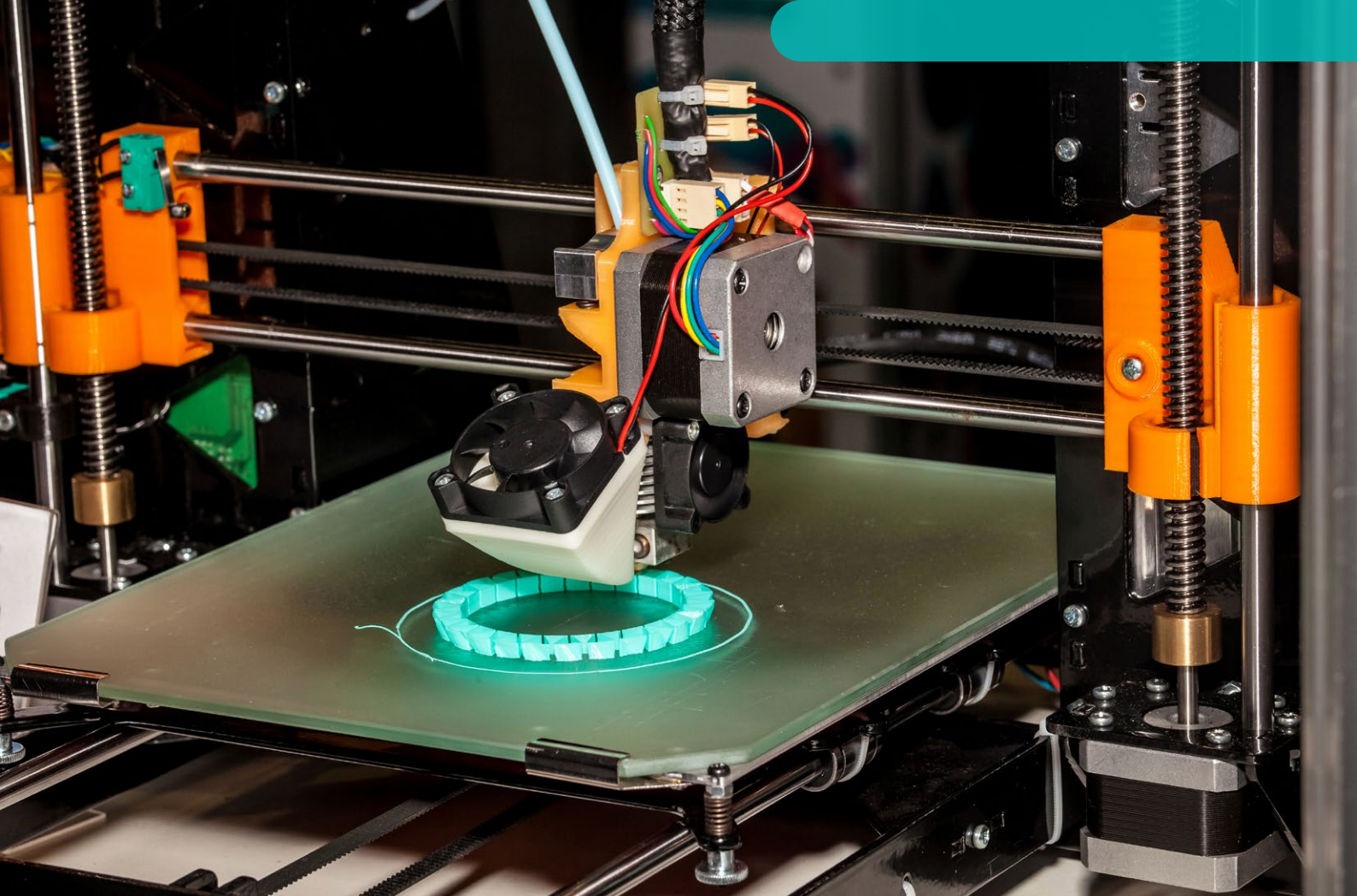
Blockchain

Blockchain is the technology that underpins the world's cryptocurrencies like bitcoin, the self-labelled peer-to-peer electronic cash system.

“Blockchain allows manufacturers to track individual part and vehicle movements, both in the supply chain and post-sale.”

Blockchain is an incorruptible database hosted by millions of computers simultaneously. Its global peer-to-peer network validates each transaction by storing them in blocks. This means the ledger cannot be edited, adjusted or changed retrospectively. As blockchain operates outside of a centralised framework, it has no single point of vulnerability – for example, one server that can be hacked – making it a secure way to record transactions and information. It's already being used prominently in travel, banking and retail.

Blockchain also plays a role in the automotive industry, allowing manufacturers to track individual part and vehicle movements, both in the supply chain and post-sale. It can be used to tackle counterfeit parts and defect-driven product recalls – and potentially help drivers make cashless micropayments for tolls, congestion fees or electric charging.



3D and 4D printing

3D printing is transforming the way we think about manufacturing. It's a step beyond just-in-time production. It enables objects such as vehicle parts or construction components to be built off-site and assembled on delivery - entirely on demand.

It could mean that in the future, replacement car parts are downloaded, sent to print, and created before your eyes - with no added delivery costs.

Then there's 4D printing, which can transform structures using light, heat and water. These are the very early days of the technology, so its full potential is yet to be seen.

Drones

Small, fast and either remote-controlled or autonomous, drones are being experimented with by corporate giants such as DHL, UPS and Amazon. Legislation remains the biggest hurdle to widespread adoption of these unmanned aerial vehicles - rule-makers are still working out how to respond to the new technology.

Why are companies so keen? They could deliver products from warehouses to consumers - and transport supplies to remote parts of the world.

"It could mean that in the future, replacement car parts are downloaded, sent to print, and created before your eyes..."

5G technology

5G is the latest generation of mobile internet connectivity, providing faster speeds and more reliable connections than ever before. Expected to be launched in 2020 - with mass-market adoption over the following decade - 5G networks will be a catalyst for innovation, supporting the Internet of Things (IoT). It could catapult autonomous vehicles into the mainstream and facilitate car-to-car communication, helping them make immediate decisions and improving road safety.

What key trends will shape the future of transport?

The Internet of Things

The Internet of Things (IoT) is the term for devices that can connect to the internet. These range from popular gadgets such as smartphones, to the more obscure tech like smart washing machines.

The IoT is expected to be the most significant tech trend of the 21st century, with the market growing to 75 billion devices by 2025 (Statista).

This technology has huge potential for fleets. Accurate, real-time information for vehicle usage optimisation, preventative maintenance, and personalised customer journeys are just three exciting improvements the IoT could usher in.

Connected vehicles

Whether cars, vans and lorries are autonomous or not, there are three classes of vehicle-centric communication which could transform the way we drive:

Vehicle-to-vehicle (V2V) communication will allow cars to relay information between each other on weather, congestion and road surface conditions. Their speeds will be matched so they can drive automatically in platoons. They'll also be able to report any incidents to other vehicles.

Vehicle-to-infrastructure (V2I) involves cars communicating with the road network and cities. It means your car can be redirected around roadworks, coordinate journeys to make the best use of congested facilities, and alert you to any hazards. It could be used by cities to set diversions in place or even tax by the mile.

Vehicle-to-X (V2X) is the principle of the vehicle communicating anything else, such as smart devices, using the internet or a dedicated radio frequency. This could be useful for tasks like transmitting mileage for a company driver to a fleet manager, or recording a GPS location.

With each system connected to the internet, authorities will be able to access huge volumes of traffic data and have more control over traffic in real-time. This will enable them to make more informed decisions when planning infrastructure upgrades.

The data could also be used to create services and support product development.



Autonomous vehicles

By 2030, an estimated 15% of cars sold will be fully autonomous (1).

Autonomous vehicles are capable of recognising their environment thanks to on-board sensors, cameras and global positioning systems (GPS). The likes of Audi, Google and Tesla are in the process of developing fully autonomous vehicles, while many marques have already introduced semi-autonomous driving aids.

Meanwhile, commercial vehicle manufacturers are looking at ways to connect their vehicles and create platoons that can move at the same time, like a train. Volvo has so far been one of the industry leaders, testing its lorries in formation. It could have a big impact on productivity and energy efficiency, while maximising road space.

Smart cities

By 2050, 68% of the world's population will live in cities and urban areas – up from 55% today – according to 2018 figures from the UN (2). Up to 90% of this growth will be in Asia and Africa.

The IoT is key to the development of smart cities, enabling a more connected and efficient infrastructure such as streetlights, motorways and car parks that tell your car about available spots nearby.

5G tech was a big feature of this year's Consumer Electronics Show (CES) in January. Providing improved connectivity, responsiveness and reach, these high-speed networks will accelerate the growth of smart cities.

Automation is a growing theme with smart cities, too. When IoT is combined with robots, cities could have the capability for addressing infrastructure problems. For example, automated machines could be sent to fix potholes and streetlights.

Sources and further reading:

McKinsey & Company, Automotive revolution – perspective towards 2030, January 2016:
[Click here to view](#)

United Nations, 68% of the world population projected to live in urban areas by 2050, says UN, May 2018:
[Click here to view](#)

Car subscription services

Car subscription services are a challenger to the traditional leasing model. A car subscription generally involves paying a monthly fee for access to a car.

The attraction for many is having the flexibility to change their car every three months – or stop using one completely if their circumstances change – without having to foot any of the maintenance costs.

Such schemes will succeed or fail based on their ability to understand and respond to the consumer expectations of digital natives.

The automotive disruptors

The car manufacturer of the future could be the same company that made your computer.

Apple has already tested their own self-driving car on the streets of California, and Waymo – formerly Google's Self-Driving Car Project – also aims to remove the need for human motorists.

These tech giants bring with them the scale, power and authority to make groundbreaking change.



How the fleet industry will adapt

As vehicles and technology converge, disruption will likely come from technical organisations as much as it will from the automotive sector.

We see there being two fundamental conclusions:

01 Embrace the future. So much technology is on the brink of transforming our urban world, and companies need to have one eye on the future in order to stay ahead of the competition.

02 Collaborate. Companies need to partner with providers that are thinking about **#whatsnext**. Non-technical companies wishing to stay relevant will increasingly need to engage in technical development to meet user expectations.





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