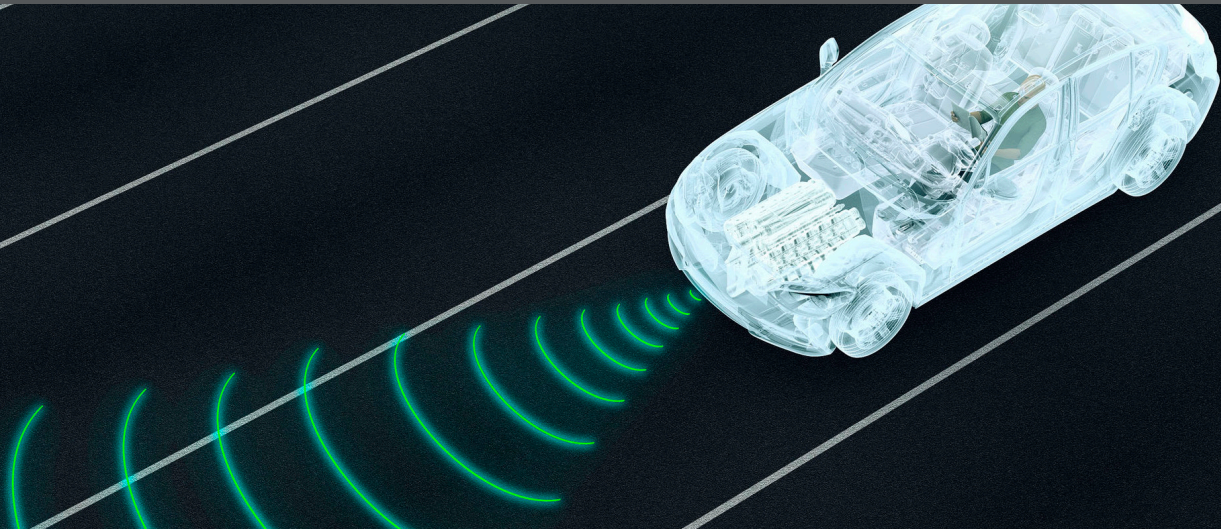


TRENDS IN TRANSPORT AND FUTURE INFRASTRUCTURE

September 2017



INTRODUCING THE TRENDS IN TRANSPORT AND FUTURE INFRASTRUCTURE

Here at Addleshaw Goddard we're seeing a number of emerging trends that cut across different transport sectors and industries. We'll be writing a series of thought pieces focussing on these. The series will explore legal and commercial issues arising from changes driven by the trends so that you can see the impact on each of the affected transport sectors and industries.

This first edition of the series introduces the big Trends in Transport: *shared mobility, electrification, automation and connectivity.*



Shared Mobility

We are seeing a shift from the traditional model of individual car ownership to one, especially in cities where parking is at a premium, of shared mobility or “mobility as a service”. Uber is the classic example of this: the car comes to you.



Connectivity

We are becoming more connected to our vehicles, and they connect with each other. Most drivers now use satellite navigation and it is becoming easier to plan journeys by public transport using real-time online data to track buses and trains.



Electrification

Transport is the only sector where carbon emissions are rising rather than falling and this needs to change. We are seeing a trend towards electrification of transport, both in rail and on the roads as electric vehicle (EVs) are on the cusp of moving from the early adopters to the mass market.



Automation

CAVs (connected and autonomous vehicles) are being trialled in various UK cities at the moment and are seen as a solution to traffic problems as well as part of the shift to shared mobility.

These four trends span a number of different transport sectors – and underpinning all this is the need for data.



**SHARED
MOBILITY**



CONNECTIVITY



ELECTRIFICATION



AUTOMATION



Here are just a few examples of where we see these trends emerging:



TRANSPORT SECTOR:
URBAN TRANSPORT

- ▶ Automation in the form of CAVs, cars, buses and platoons of freight vehicles, made possible by real time data
- ▶ Car pooling and smart traffic management – from Uber to proactive traffic management regimes
- ▶ Batteries and energy storage – development of battery and energy storage technology is rapid but needs further investment to be deployed at the scale and voltage needed to power the vehicles of the future
- ▶ Vehicle to grid solutions: EVs can help, not hinder, energy balancing on the network
- ▶ Connected highways and roadside infrastructure technology is identified as crucial to the development of the CAV.



TRANSPORT SECTOR:
AVIATION

- ▶ Drones and their evolving commercial uses have the potential to disrupt the conventional supply chain and logistics - with rapid improvements in drone sensing and battery technology and retailers like Amazon and Walmart trialling operations
- ▶ Airlines are focusing on improving their customer experience, relying on data analysis and technology.



TRANSPORT SECTOR: **PORTS AND LOGISTICS**

- ▶ Use of data for fleet management and multi-modal connectivity
- ▶ Autonomous shipping
- ▶ The Space Industry Bill should enable the building of Spaceports in the UK, which will make it easier for private companies to launch their own satellites that can enable connectivity applications – more transport real time data enabling shared mobility and automated vehicles.



TRANSPORT SECTOR: **RAIL**

- ▶ Rail Electrification and the Digital Railway programme are expected to increase capacity and frequency across the rail networks and projects digitising signalling and ticketing are underway
- ▶ Many believe that use of smart data in apps and communications that prioritise the customer experience could bring the most dramatic changes to the railway, as information on trains in real time becomes available to all, meaning shared mobility across different transport modes (your automated taxi waiting to pick you up from the station)
- ▶ Others have proposed new 'Super High Speed' systems for passenger and freight transport like the electric pods that use magnetic levitation technology (Hyperloop) – the UK could become one single 'city' eventually.

LEGAL AND COMMERCIAL CHALLENGES



One of the biggest challenges in utilising new automation technology and electrification is in standards and regulation. The Government has acknowledged this and has begun to look at introducing legislation that addresses some of the gaps, as we reported in our article, [Queen's Speech On Trend with Future of Transport](#).

The Transport Technology and Aviation Bill will help to regulate insurance of autonomous vehicles, as well as contain powers to require an EV chargepoint at every major fuel retailer, with common technical and operational standards.

The Space Industry Bill aims to create new powers to license a wide range of new commercial spaceflight, including vertically-launched rockets, spaceplanes, satellite operation, spaceports and other technologies; and a regulatory framework to manage risk, ensuring that commercial spaceflight in the UK remains safe.

Another key issue, especially in light of recent ransomware attacks, is cyber security and increasing reliance on connected and automated, safety critical technology. This will require a set of safety and security standards and organisations will need to take account of these new risks in their commercial strategy. The Government developed a set of key principles of Cyber Security for CAVs to help all parties in the manufacturing supply chain.

A key challenge for businesses is capitalising on these future transport trends, and monetising the vast amount of data to be created through

automation, connectivity and shared mobility. The transport sector has the potential to be at the heart of the emerging field of big data, as companies such as Uber have shown.

Businesses must balance the desire to monetise their data streams with customers' expectations around data privacy; this will require strategic plans for managing personal data. To avoid negative publicity or an adverse customer reaction, customers should be given a transparent explanation of the way in which businesses will use their personal data.

Finally, any use of personal data will need to be considered alongside emerging data protection legislation in order to ensure that data is being used in a manner which will not lead to fines from or investigations by a data protection authority.

FUTURE ARTICLES IN THE SERIES

Look out for future articles in this series which will focus on:



Aviation: Airspace and future use - current and future commercial use of Drones and the Government's Aviation Strategy



Future Transport Infrastructure (1): Spaceports and the opportunity in space



Future Transport Infrastructure (2): Future highways and roadside infrastructure technology



Road Vehicles: Electric vehicles and connected and autonomous vehicles



Rail (1): How do we address the emissions timebomb?



Rail (2): High Speed/Hyper Speed Rail – fact or fiction?

We welcome your views on these trends and topics. Please contact us to discuss.

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