



Summary of ICE Thinks/WSP joint roundtable on Connected and Autonomous Vehicles

7 February 2018, Stevenson Room, 1 Great George Street

Background

On Wednesday 7 February 2018, the ICE's President Lord Robert Mair and Rachel Skinner WSP's Director of Development and ICE Vice President hosted a private business breakfast to discuss latest developments on mobility in the UK with Jesse Norman MP, Parliamentary Under-Secretary of State at the Department for Transport.

Whether it be through connected and autonomous vehicles (CAVs), electric (EVs), or shared vehicles, mobility is going through a revolution, and Government's decision to champion this agenda provides a unique opportunity for the UK to be in the driving seat in the future of mobility.

The session brought together senior representatives from across the transport, automotive, civil engineering and legal industries. It was an opportunity to get a sense of the Department for Transport's priorities, and share with other attendees' perspectives on how to operate such a transition successfully, and what implications it will have for our built environment and our regulatory framework.

Introductory Remarks

Lord Robert Mair set the context for the morning's discussions, highlighting that changing technology will change the face of our built environment, and that Civil Engineers are fundamental to the process. Changes to transport technology cannot be undertaken in isolation, and the intersections with our energy and communications infrastructure must be understood. Strong leadership from both Government and industry is required.

Jesse Norman MP, in making his key note address, highlighted the need to address concerns around ethics and societal norms if technological change and acceptance is to be delivered. Also, there is a legacy of existing infrastructure and political decision making to contend with, and we are subject to these constraints.

UK Government is seeking to be more explicit about its transport strategy. A simplified discussion is essential to enable dialogue with the public.

'We need an intelligent, liveable world where everyone can co-exist successfully'.

EVs/CAVs also need to be considered in the wider transport context, including active and public transport. In the future transport will be far more multimodal, operating on a 'transport as a service' model. Additionally, EVs/CAVs have applications beyond private transport – such as agriculture.

There are four department priorities for CAVs;

- Strategy – industrial strategy & future mobility strategies.
- Money – infrastructure charging investment & automotive sector deal.



- Legislation – UK Government careful to create/maintain a conducive legislative environment.
- Skills – Year of the Engineer is very important. We need to understand how we can better fit engineering into the curriculum.

Rachel Skinner's response to the Minister highlighted that getting transport right has benefits beyond transport alone. The cost savings from road safety improvements alone are immense. Accidents cost £35bn per annum.¹ Congestion costs around £30bn per annum.² Air quality costs the wider economy around £54bn per annum.³ Better transport decisions can realise social and economic benefits to safety, congestion, air quality, place-making and land-value. We need to understand what we want from our transport, but recognise that needs across the UK won't be homogenous.

'Technology is a question of when, not if'.

40% of new vehicle registrations last year in Norway were EVs. Investment in EV infrastructure is outstripping that in EVs themselves – creating the correct conditions for uptake.

Real challenges are created by a mixed-autonomy/connectivity road environment. However, we need to make a start – can't afford to wait until we can get 80%+.

Shared mobility appears to be largely ignored. Private vehicles sit unused for 85-90% of their lifetime. In the future there will be a range of different models of ownership, and developers need to consider this as part of their offerings.

WSP's *New Mobility Now* report maps out how these technologies, and better built environment collaboration, can deliver both economic efficiencies, but also better outcomes for society.

Roundtable Discussion

Data & information

Attendees suggested that CAVs on the road will not necessarily result in lower congestion – it will be dependent upon load factor. For example, while UBER might reduce the number of private cars on the road, it's possible that city congestion is increased by UBER drivers cruising for business.

How people will travel in the future will depend on information supplied. Greater use of real-time information will drive modal shift. More information also enables better transport planning choices. It was queried whether transport planners are still the best people to make transport decisions. A better understanding of what people are travelling for is needed rather than additional capacity to accommodate 'peak' travel.

¹ DfT 2013 Total value of prevention of accidents by severity and road type: (tas60004)

<https://www.gov.uk/government/statistical-data-sets/ras60-average-value-of-preventing-road-accidents>

² NRIX Global Traffic Scorecard Feb 2018

³ Economic cost of deaths from air pollution (outdoor and indoor) per country, as a percentage of GDP WHO European Region, 2010 http://www.euro.who.int/_data/assets/pdf_file/0008/276956/PR_Economics-Annex_en.pdf?ua=1



We also have to consider data and information ownership, and people's data rights.

How do we pay for our future roads?

In cities transport needs and models will change. BMW envisage selling journeys rather than cars. We'll see a mixed ownership model but will also see new entrants to the market.

Here attendees saw a risk of 'more stuff on the roads', which may be inevitable without a constraining mechanism – such as road user charging. 'Road user charging' is politically difficult, in part because of the name. Road tax isn't really being discussed – Government needs to consider this. Road pricing needs definition in the context of EVs and CAVs. When we remove the negative externalities does it still require some level of tax? If no or low tax, do we risk increasing load on our infrastructure?

The public assume that private cars should continue, that they'll continue to use infrastructure as they always have, and that they'll pay as they have. We need to challenge this thinking. It is unclear that individuals really understand the full systems cost of transport.

Many vehicles are already leased rather than owned. The 'mobility as a service' model, to an extent, already exists. If we're able to demonstrate costs of private transport then mobility as a service becomes a more attractive proposition.

The freight industry understands costs better than the individual. If we can reduce 15% peak freight movement then this will change behaviours. Night freight and automation will change how we provide freight. To reduce peak traffic, could we better enable last-mile freight at night and compensate those impacted by night deliveries?

Leadership

Nissan are running a car-sharing pilot in Paris. It's still an ownership model, but it's different from BMW. New models are arising. Paris transport authorities are encouraging EVs/sharing/traffic exclusions – minimising traffic, so see this as part of that programme.

We need to set the right framework to enable this in the UK. A combination of incentives and 'nudge' tactics can realise this. An automotive council setting a vision, planning a path, and setting the right incentives, will be part of this. The role of Government is about avoiding missed opportunities and creating a permissive regulatory environment.

Markets exist because of the State, and the state has a duty to ensure we don't miss opportunities. Government has to create rights for new technological environments - e.g. digital space. Primary powers will need to be devolved to regulators, which while a democratic issue it is not insurmountable.

Local Authorities (LAs) have a role in this too. While Government sets the agenda, and industry delivers the technology, LAs will have to deal with the roll-out and public acceptability point too. However, LAs are empowered to make bold transport decisions too. Seville made a decision to



invest heavily in cycling infrastructure, in spite of low previous cycling, now it's heavily used. This was a local decision.

Ultimately uptake and enabling of new transport technologies comes down to: what, why & how? 'What' is about products, and this is for the manufacturers to address, but changing social and economic outcomes is about the 'why?' We need to ask ourselves why things need to change. We need to get this right.

What do **you** think?

ICE Thinks will continue its exploration of CAVs, AI, agile infrastructure and skills this year and beyond.

To do this, we need to know what **you** think are the most important issues shaping the CAV agenda.

- Which of the themes touched on by panellists needs addressing most urgently by those of us in the infrastructure sector?
- Which technologies will drive or hinder and how can/should Government drive them?
- How do we make sure our infrastructure is ready for radical change?

Get in touch about this, or any other aspect of smart cities, by emailing us at thoughtleadership@ice.org.uk

About ICE Thinks

ICE Thinks, ICE's thought leadership programme, is an initiative bringing together groundbreaking thinkers from across a range of sectors in order to identify the megatrends and disruptors that will have the biggest impact on future infrastructure design and delivery. Our webpages, [ICE Thinks](#), offer insight via blogs, social media, webinars, events and videos, including our 2016 highlights video, [Transforming infrastructure, transforming cities](#).