FUTURE OF URBAN MOBILITY:
How could autonomous and intelligent technologies reshape the mobility ecosystem?

Tuesday 12th September 2017
8.00am-9.45am, London Transport Museum

Panel
- James Nettleton, InMotion Ventures
- Richard de Cani, Arup

Chair
- Dr Philo Daniel, Thales UK

OVERVIEW

What are cities trying to achieve from a broader transport and planning perspective? Now is a good time to ask. Driven by population growth, consumer expectations, fiscal constraints, and environmental and health concerns, the mobility ecosystem is in a state of flux. Add to this the effects of ‘disruptive’ technologies and technology companies, and we are faced with an exciting set of opportunities, as well as complex challenges.

From the perspective of transport users, headline grabbing technologies including driverless cars and Hyperloop mass transit promise giant, time-saving leaps. But how do we get to this promised future? And – from the city’s perspective – are these new technologies the best way forward?

The second Future of Urban Mobility discussion focused on six interlinked topics: data, demand responsive transport, road capacity, public good, and autonomous vehicles. The arguments and perspectives of the group are summarised below.

1) Is transport data being used efficiently?

High density rail will always be needed to move large amounts of people, and, as such will remain at the heart of urban transportation systems. However, new mass transit is being designed using an out of date approach: an explosion in data – on user movement, user expectations and system performance – seems to offer a new way forward for infrastructure planning, but it is not yet being embraced. Data offers the potential to plan and manage better, more quickly, and in real-time.

However, some questioned how such data could be used in practice. Perhaps an alternative use is in the improved analysis and explanation of the business case and the benefits of
investing in transport schemes. It is an opportunity to better convince users, governments and third parties of the need for investment.

2) What will be the impact of demand responsive transport at a city scale?

One of the areas where data is being put to use is in demand responsive transport (DRT). New technology companies including CityMapper and Uber have very sophisticated ways of modelling demand and, through new tools or city partnerships, could help to tackle transport challenges.

However, some attendees suggested that given the hard constraints of tube and bus capacity, DRT could only ever affect a small percentage of journeys. Further, that DRT essentially helps to improve the existing mobility ecosystem, rather than create a new solution.

3) Can technology help to change fundamental road capacity constraints?

London is unique in that it has seen a reduction in car use over the last decade. This is the result of – among other factors – progressive policies to shift public attitudes, investment, and the congestion charge. Many other cities want to achieve this outcome, and are looking at technology to do this.

The core question that needs to be addressed is how to get more capacity out of the same stretch of tarmac. How can roads work for each of the competing groups that use it, whether buses, cyclists, cars or freight? Although potential solutions include limits on residential car parking or road pricing, fundamentally there needs to be a new configuration of road use. The role of technology here is yet to be fully explored. One suggestion was that AI should be applied to better allocating or scheduling space on the roads, rather than to replicating driving in cars. Indeed, the proliferation of autonomous vehicles could make congestion worse rather than reducing it.

4) Do we need new models of regulation, collaboration and operation for public transport to remain economically sustainable in a competitive landscape?

It was suggested that public transport is fundamentally a public good, is a system that doesn’t make money, and is responsible for a huge number of long-lasting assets. Given this, the challenge that new technology companies present is that they are essentially driven by profit. And as such, they undermine the economic sustainability of public transport systems. They cannot, it was suggested, be a genuine solution to urban mobility.

Others did see the potential for new technology companies to work successfully with public bodies. Examples already exist of companies providing tools to help public transport providers improve their services and efficiency. Most agreed that it is essential for these companies to build constructive relationships with cities, and to consider the public policy implications of their solutions early on.

Visions for how this could evolve varied. Some saw a role for transport providers to provide end-to-end mobility services, while others see the transport provider providing the ‘trunk’ services, and other companies providing the last-mile, merged together by a mass operator.
Some raised the question of who is going to be the guardian of inclusion and social good? How can we simultaneously maintain a city’s objectives, commercial objectives, and consumer objectives? A suggestion was made that the social good that public transport provides needs to be regulated.

5) What are the opportunities and challenges of autonomous vehicles?

It was generally agreed that autonomous vehicles (AVs) represent the next fundamental shift in reducing the cost of transport. What is less understood is the extent to which AVs will benefit the transport ecosystem. AVs would remove about two thirds of the cost of a private hire vehicle, thereby making the price of a taxi comparable to public transport. Not only would this decrease the economic viability of public transport providers, it would also increase road congestion and further limit road space.

However, it was suggested that the design of AVs would vary from conventional car design, for example as shared pods or smaller, more agile vehicles, and as such free up road space. Likewise, AVs would reduce the amount of land required for parking spaces. If part of a unified network, they could also plan routes efficiently across multiple vehicle fleets, thereby reducing congestion.

Yet this relies on regulation and policy intervention. Without this, we could face a scenario where multiple AV providers compete against one another, running conflicting non-interoperable fleets. As such, it is the responsibility of the government or transport authorities to moderate the market. Some suggested that while public bodies shouldn’t work to hold back innovation, they should mitigate some of the potential problems while taking advantage of what AVs can offer.

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FUTURE OF URBAN MOBILITY REPORT

In Feb 2018, London Transport Museum in collaboration with Arup, Gowling WLG and Thales UK will publish a report on the Future of Urban Mobility. We will host three discussion events, the outcomes of which will inform our research. The first of these events was held on 4 July 2017, and the final event will take place on 12 October 2017.

For more information on the Museum’s Interchange thought leadership programme, please visit www.ltmuseum.co.uk/support-us/corporate/thought-leadership or contact:

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