

INTERCHANGE

moving thinking forward

SMART FUTURES: SMART WORKING

How are technologies set to transform the future of work and travel?

26 September 2018, 08:00 – 09:45, London Transport Museum

Panel

- Shashi Verma, Director of Strategy and Chief Technology Officer, Transport for London
- Jonathan Gillham, Director of Econometrics and Economic Modelling, PwC

Chair

- Mark Garrity, Director – Sales, Strategy & Marketing, Thales UK
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About the session

This roundtable debate, the latest in the London Transport Museum's Interchange programme, was attended by a select panel of about 30 experts, thinkers and decision-makers with an interest in the future of London and its transport systems. They came together to discuss how emerging technologies – in combination with other social and cultural forces – will transform the future of work and travel, and the ways in which these changes will impact transport needs and behaviours in London and beyond. The agenda was to explore the strategies needed to continue to deliver efficient and viable transport infrastructure, including focusing on questions like:

- How will future technology revolutionise the work that we carry out?
- What will be the impact on working patterns and transport demand?
- What opportunities will technology transformation create to improve journeys and the transport available?
- Why is technology important, and what factors should we consider when planning future transport strategy?
- What principles will need to be applied in developing effective long-term responses?

The session on the future of work and travel was the last of three Interchange roundtables held over the Summer of 2018, with the first two having examined the impacts of technology on transport and cities.

Setting the scene

With digital technologies having an increasing impact on citizens' lives, work and transport needs, the 2018 series of Interchange roundtables has built on the thought leadership in London Transport Museum's 2017 research report, *Rethinking Urban Mobility*. Like the previous two sessions in 2018, this third roundtable opened with two expert presentations on the topic in question, after which the floor was opened up for questions and debate. The thinking and insights from all three sessions will be combined to create a new "Smart

Futures” report on urban mobility, scheduled for publication in early 2019. The Interchange sessions are conducted under the Chatham House Rule, so no comments in this summary are attributed to any specific attendee.

The debate: mapping out the future of work

The opening presentations provided the starting-point for a lively and varied debate, touching on issues ranging from generational and cultural change to the impacts of artificial intelligence (AI) on employment and the importance of trust and quality in personal data. An overarching theme was the need to see citizens’ travel behaviour in the context of their overall working and personal lives, shaped by a vast array of influences that extend well beyond technology into their social and cultural needs. One delegate commented: “For a lot of people, going to work is semi-social. Who wants to work from home all the time? We may want choice about how much and where we work, but there’s a powerful social driver to work with others.” Another added: “People don’t live to travel. They travel because they have to make a living.”

During the debate, there was widespread agreement that whatever shifts do take place in working patterns – and whatever role AI, driverless cars or other technologies play in catalysing and accelerating them – the resulting impacts will be relatively gradual, and potentially not as sweeping as many people assume. “Technology may change how we work, but the number of jobs it can replace completely won’t be that high,” said a panellist. Another commented: “London has inherited a powerful transport network – and whatever is going on elsewhere in the economy, society or technology, that’s an embedded reality. If you live in Blackhorse Road, you’ll continue to use the Victoria Line: no other type of transport could move so many people so quickly to Oxford Circus.”

AI will impact the world of work...

The panellists were united in accepting that new technologies – and particularly AI and automation – will affect the amount, nature and location of work in London. But opinions varied on the extent of that impact, with several delegates suggesting that the “hype cycle” around AI has run ahead of the reality. The participants heard that AI is projected to account for around 10% of UK GDP by 2030, delivering a productivity gain of around 2%. “AI will lead to changes in the structure and quality of products sold in the marketplace,” explained a speaker, drawing on detailed research. “There’ll be more new entrants, more competition, and more choice for consumers. All of these impacts will help to drive growth.”

The roundtable heard that these effects will mainly start to be felt from about 2025 – and that there will be two major impacts on work, each serving to counteract the other. The first is ‘displacement’, where people’s jobs become automated. The second is ‘income’, through the stimulation of greater demand in the economy. “Overall, the effects on the labour market will be broadly neutral,” said the speaker. “But there will be substantial changes in how people work and what they do. These effects will vary across sectors.”

There was substantial debate over what those impacts will be. A participant pointed out that changes in workplace behaviour will be driven by a combination of two factors: firstly ‘integration’, dealing with how closely people choose to become integrated with AI; and secondly ‘collectivism’, reflecting how much choice people have about doing this. “Some ‘caring’ employers might look to hold off from implementing AI to moderate the effects of on their workers, but competitors might use AI to steal a march on them,” said a participant. Other panellists looked forward to an era of human-machine collaboration. “Decisions about using AI are around feeling your way and thinking how to augment what people do,” said one. “There’s a perception that there’s a binary element to the decisions: you either lose your job

or not. But there's the potential to improve productivity. It's about taking a pragmatic approach."

...but social and cultural factors will be equally powerful

While work will be changed by AI, the consensus at the roundtable was that social and cultural factors will be every bit as influential – including the entry to the workforce of an upcoming generation with different priorities and expectations. One speaker cited the example of a young employee who's combining his day-job with training to be a chef and volunteering as special constable, adding: "When we ask our new graduate recruits what their work future looks like, they don't want to work for us full-time. They want choice around their job – and a lot of them would like a zero-hours consultancy-type arrangement. They want flexibility and the ability to go off travelling."

This 'portfolio working' may be made more achievable by new technologies, but panellists stressed that its main drivers are social and cultural. They also highlighted the enduring appeal of face-to-face interaction and working in communal locations alongside colleagues. In combination, these factors point to a future where working patterns may well be more fluid, but still require travel to a place of work. "We need a real analysis of the way portfolio careers will change how people self-identify and manage their lives," commented a participant.

Other speakers pointed out that some companies are now "rowing back" on home working, and that working from home is often perceived as a binary choice when in reality it's a more subtle shift: "As employers become more aware of the wellbeing of their staff, they see that avoiding the stress of travelling to work in the rush hour is good for productivity." Picking up this point, a fellow panellist added that improved productivity may also impact travel behaviours: "If my productivity increases, why shouldn't I go home earlier and do more social and leisure things? It's not about work/life balance, but about integration, where you don't differentiate between work and life. You answer your emails when you wake up, and then go and do something else."

Assessing the long-term implications for transport

What does this multifaceted evolution in work mean for transport in the capital? Past experience of travel patterns suggests that any change will be gradual, and driven by visible social shifts. A speaker described how the past 70 years have seen the working day get shorter after World War Two, the dropping of 'clocking-off' in the 1970s and 80s, and growth in leisure usage of the transport network outside commuting hours from the late 1980s. The reduction in industrial activity and separation of front and back offices have also had an impact.

The panellist explained: "Throughout, the underlying driver of changes in transport demand is radical social change: that's what it takes to shift people's travel behaviours. But with all the move to flexible working we've seen, none of it is visible in the data. In other words, what we hear is happening anecdotally isn't evident at a population level. Either it isn't happening, or the capacity that's being freed up is being taken up by other people." He added that while AI won't sweep away the existing landscape of work, it will transform the way some people work in subtle ways, such as enabling more home-working. "Given this, the question for transport is: will the space that's vacated by the people doing their jobs differently be filled by other people changing their behaviour?"

Three principles for a successful future transport strategy

What's clear is that technology's impact on work and travel is currently surrounded by more questions than answers. It's also an area that doesn't lend itself to traditional demand management tools, such as peak pricing. "Every couple of years someone comes up with peak pricing as the big answer," commented a panellist. "But there are several problems with it. The quantum of peak pricing you would need to apply to make a significant impact on demand is quite high. It would also be difficult to defend politically. But even if the politicians signed up to it, the fact is that peak pricing has a very poor social impact because it's so regressive. The people with the least resources will have the lowest ability to avoid it." These comments underline the difficulty of developing a transport strategy to deal with potential future changes in working and travel patterns. However, during the discussion three principles emerged that panellists felt should be taken into account in developing such a strategy:

1. **Involve the planners.** A number of speakers stressed the danger of drawing conclusions from short-term trends and using these as the basis for long-term infrastructure planning decisions. Taking the current turmoil in the retail industry as an example, a participant commented: "Whatever data you have, when you're living in the middle of a transformational change it's very hard to work out why it's happening and respond accordingly. There's talk of turning Oxford Street into a residential area – but the truth is that city centres depend enormously on agglomeration effects. So you have to involve the planning system in any changes and be careful it doesn't read the signals wrongly."
2. **Use public-private cooperation.** Citing the fact that the private sector is now making the running in space exploration, a panellist asked where future investment in transport innovation will come from if it's left to incumbent players with a limited capacity to take on risk. Another drew a parallel with electric vehicle charging: "What we need is national infrastructure. But where do the private sector play on risk? The private sector have invested in charging technology and batteries – but without investment in the public grid infrastructure, it simply won't happen." Similarly, the public and private sectors need to work and accept risk together if transport is to stay abreast of changes in work and lifestyles.
3. **Ensure accuracy and trust in data.** A recurrent theme of the discussion was the vital role played by accurate data in coming up with the right responses to shifts in transport demand. But unless people feel confident that the data is being collected and used in their interests, they'll be unwilling to provide it. "There's clearly an ethical dimension in collecting and using data," said a panellist. "But aren't we missing a trick if we look at the transformational potential of discrete technologies like AI, rather than at the transformational potential of data?" Another added: "If we want London to be a global centre for AI, we need to collect data in ways that are safe, secure and can be trusted by the people of London."

Conclusion: embedding technological and cultural change into transport

The overall message from the discussion was that technological advances, exemplified by AI, are just one – albeit important – aspect of a wider set of cultural and social changes happening in the workplace. Summing up the tenor of the debate, a participant asked: "How do we get cultural change into our transport network? If there's a cultural change underway it sounds brilliant, and we all want to be part of it. But our transport network must keep pace." Another added: "Technology change is the easy bit. Cultural change is much harder." It all adds up to a three-part challenge for London's transport system: understanding the cultural

changes in how people work, largely enabled and accelerated by technology; working out how to respond effectively; and marshalling and directing the resources to make it happen.

The next Interchange session: Cyber Security

The next roundtable in London Transport Museum's Interchange series will be on cyber security – this event explores how we can keep our smart cities safe from cyber threats.

The discussion takes place on 6 December; please email rsvp.events@ltmuseum.co.uk to request details of the event and to register your interest in attending.



SMART FUTURES REPORT

In early 2019, London Transport Museum in collaboration with PwC, Gowling WLG and Thales UK will publish a report on Smart Futures. In the preceding six months we will host three discussion events, the outcomes of which will inform our research. These events will be held on 13 June 2018, 12 July 2018 and September 2018. A half day workshop will be held in November during which some of the key themes that emerged from the discussions will be explored in more detail.

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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