

Commission on Travel Demand

Evidence Session Six

Decision Making

London, 21st November 2017

Summary

The overarching aim of the evidence session was to consider how current and future uncertainties in demand should be taken into account in decision-making processes. This note summarises some of the key outcomes of the discussion and will inform the Commission's future work programme. The report does not imply consensus amongst all of the participants of the evidence session and the opinions shared, whilst not attributed, were those of the individuals rather than the organisations they belong to.

There was widespread agreement that it is necessary to start from thinking about what kinds of places we want to live in and to pro-actively plan for demand in ways which helped fulfil those outcomes. This has more resonance with decision-makers and citizens and makes a much broader case for the importance of transport policy. This is a very clear departure from previous approaches of predicting demand and deciding how or whether to accommodate it.

Within this framing, there is a recognition that changes in society and mobility options bring new uncertainties to the types of investments and policies that might be pursued. This will require a change to decision-support tools and decision-making processes. There is no one right answer as to how to address uncertainty but current procedures, although improving, have limitations. A more adaptive approach to planning which draws on a wider set of insights seems likely to be necessary. Exploratory tools which change the emphasis more towards breadth over depth of analytical range may be advantageous. Experimentation and sharing of practice will be required. In advocating change however, there will be a need to keep simplicity and transparency at the forefront.

Introduction

The evidence session began with an overview of some key findings from the across the five previous Commission evidence sessions and written evidence to date. There is a body of evidence which suggests that the role of travel in society is changing. The change in younger people is particularly marked as are some of the changes in activities such as how we access goods and services but also employment. Some of these changes are happening everywhere and some are concentrated most significantly in our largest cities. The net effect seems to be an increasing differentiation in trends in travel in the largest urban areas and other towns and cities. There also appears to be a continuing divergence between growth in traffic on the Strategic Road Network and flat traffic levels or declines in major urban areas. However, there is a continued need to explore how and why these trends are unfolding.

The evidence suggests that at a national scale, traditional factors such as GDP, population and oil prices continue to explain much of the change in total kilometres travelled. It is in some ways surprising that this is the case given the decline in trip rates per capita which was not anticipated. However, longer distance trips may be changing in a different way to more localised journeys and freight, in turn, is different which is also important to national travel demand. The difficulty of correctly forecasting those input variables remains as discussed later in this evidence session. However, even if at an aggregate scale the outturn estimates of demand are satisfactory, this masks quite substantial variation at sub-national levels. There is evidence that some of the core

assumptions which a national approach to demand forecasting produce do not now fit with local data, circumstances or strategic approach to managing travel. The Commission should examine the way forward.

It also seems that the changes to the way society works will continue to unfold with further consequences for travel demand. Coupled with this is a potentially significant change in mobility technologies with Electric Vehicles, Autonomous Vehicles and Mobility as a Service. None of these currently feature in future demand forecasts but yet they could make a substantial difference to the types of investment packages that make sense. It is very difficult to know how to incorporate them and also to know how best to communicate the assumptions and uncertainties that surround them. This evidence session focussed on different approaches being tried currently for doing this.

Policy and Demand

Travel demand is incredibly important to how transport networks function. However, travel and transport help connect people and goods. It is the connection to how the economy functions and to social well-being that make the arguments for transport investment. How we travel also has significant impacts on health and on environmental pollution, notably air quality, climate change and noise and this too requires active policy intervention.

Two ends of the planning spectrum are to look ahead and decide what sort of places we want to try and create for people to live and work in. From there, to work back to consider what type of interventions might be necessary to get us there. The other is to project future demand and to plan interventions around how that demand might be accommodated. Whilst the two approaches can have connections they differ fundamentally in the degree to which policy has agency over shaping demand rather than responding to it. Around the world there are different approaches adopted which cover this spectrum. In our evidence, Oslo and Manchester have adopted a vision-led approach. In London there is an explicit target for 80% of trips to be made by public transport, walk and cycle. In London, because the demand to use the networks is so high and the impacts of vehicular traffic so clearly recognised the public use of targets related to mode use has become politically relevant.

Whatever approach is adopted, there is an opportunity and, some argue, a need to reconsider the primacy of transport in making 'demand' and therefore being the main point of policy focus in thinking about tackling it. As travel is undertaken largely to participate in activities then clearly the changing nature of those activities is integral to travel demand. This is sometimes more policy driven (e.g. amalgamating specialist health services) and sometimes less (e.g. the growth in on-line retail). Understanding demand futures requires a much broader connection with a range of policy sectors and questions than currently is the case. Examples discussed included:

- The potential of huge investments in digital infrastructures that might improve connectivity instead of physical infrastructure. This will reduce some existing demand, reshape some demand but will also generate new demand.
- There is not a good understanding of the trade-offs in household spending. It is suggested that spending on digital connectivity might explain some reductions in spend on travel amongst younger people as well as rising insurance costs. However, changes to housing costs and energy prices might also be relevant.
- The freight and logistics sector is undergoing considerable change and tends to get marginalised. This has not been a focus of Commission work to date.

It was also suggested that because change is not just influenced by economic variables there is a need for new insights to be brought to bear in thinking about demand change from other disciplines.

There was broad agreement that the transport sector as a whole does not conduct enough post-hoc evaluation and therefore there are challenges in demonstrating how significant the role of policy has been in shaping demand. Indeed, it is only in a few large cities that robust locally relevant information on travel behaviour is systematically collected. Some of the changes seem to be part of longer-term social change processes and so disentangling the impact of interventions (such as land-

use policy) which build over time from wider changes which are also on the move is challenging and would require a commitment to monitoring and assessment hitherto not seen in the sector.

Dealing with Uncertainty

Four presentations were given on different ways of approaching dealing with uncertainty. Erik Verroen from Rijkwaterstaat in the Netherlands shared with the Commission some of the thinking currently being deployed.

The Netherlands has a set of national future scenarios which can then be further interpreted in each policy sector. There is an acceptance that our current modelling tools are good for exploring the extent to which particular investments might be robust against variation in factors we have good observational experience of, such as fuel price. However, there is a need to look beyond this to allow for greater uncertainty through the use of the scenario approach. Here, the development of futures which have radically different levels of use of different mobility options such as e-bikes and automated vehicles has begun to be explored.

It was felt important to try and provide some sense of scale to the magnitude of change in travel patterns that different scenarios might imply. This is not the same as making predications of what will happen. It tries instead to consider for what types of activities and over what kinds of journey lengths new technologies or interventions might impact and how quickly those developments could unfold. Our existing tools can help understand some of these issues (e.g. sensitivity to travel time or interchange). Less sophisticated exploratory models can also be used to think about these outcomes. This can help answer questions such as:

- Which scenarios will create greatest divergence?
- Which scenarios are important to share with decision-makers?
- What factors are critical to get an early understanding of?

It was suggested that because of the speculative nature of the approach, a greater emphasis on early assessment of trials, learning and feedback into the futuring process was important. The approach in Rijkwaterstaat is increasingly taking an adaptive planning stand point where pathways are plotted with incremental investments given early priority and irreversible major infrastructure investments only undertaken if it is clear that the pathway of development will require it.

Nicola Kane from Transport for Greater Manchester set out the approach to developing the 2040 strategy for Greater Manchester. There is a strong focus on the role of transport in supporting broader societal goals. TfGM have developed their approach around different spatial areas, recognising that the transport and land-use challenges, but also recent trends in behaviour are quite different in the core of Manchester versus the edges and other major centres. This gives focus to how Greater Manchester builds a future vision for both neighbourhood and wider city region travel. The vision and validate approach being developed by TfGM requires extensive work on agreeing the vision but it also then requires good alignment between the goals and approach developed at a Greater Manchester level and the approaches adopted by national government in approving schemes and funding allocations. It also requires regularly revisiting whether the solutions proposed remain robust to the changing circumstances and technological options through a process of reviewing the strategy's delivery plan and supporting evidence base on an annual basis. The need for

adapting solutions again emerged although the challenges of building solutions which could be adapted (e.g. expanded or more easily repurposed) in the face of strong pressures on funding is a potential barrier.

Joan Hancox from Buckinghamshire County Council discussed the challenges of planning in a more rural setting with more limited public transport options and considerable commuting flows. Buckinghamshire will expect to develop further through, in particular, the developments of the Oxford-Cambridge corridor. The travel trends faced in this kind of area are quite different to those in cities and this connected to Peter Headicar's previous evidence to the Commission. There has been a growth in car based travel, particularly trips of over 20kms and a reduction in short trips. There is continued political interest in road expansion and very limited opportunities to improve public transport. Services like Uber are yet to establish in Buckinghamshire. It was suggested however that some of the trends being observed relate to a change in the way the economy of the area is functioning with increased working from home and new small business connections. However, very little is known about how technological developments and travel patterns are co-evolving. Without greater clarity over the links between productivity and connectivity, considering the contribution of digital connectivity it was suggested that incremental road building would remain the dominant solution.

The final presentation of the evidence session was from Professor Glenn Lyons on opening out and closing down uncertainty, drawing from a joint paper with Professor Greg Marsden. The presentation looked at the purpose, procedures and people aspects of thinking through uncertainty in decision-making. The discussion suggested a much greater acceptance of a need to think about alternative future scenarios and this is to some degree happening. However, this very quickly runs up against both presentational and analytical problems:

- Politicians do not typically want lots of different scenarios but do want to know that the decisions they are taking are robust to uncertainty.
- Analytically it is very demanding to assess multiple futures and multiple schemes. There is a trade off between depth and breadth in the potential to consider greater numbers of combinations of options.

Whilst uncertainty is addressed at different scales in UK decision-making processes it largely revolves around a presumption of a 'core' or 'most likely' scenario against which other 'less likely' scenarios are tested. It was suggested that this binds thinking to existing tools and trajectories which might not be appropriate. It will almost certainly constrain option generation to the sorts of interventions that have always been applied. IF transport futures are indeed going to be significantly different in terms of the technologies that support mobility and the nature of the activities we take part in then it seems likely that the nature and quantum of at least some of the options for investment would change.

Whilst each of the presentations gave some ideas as to ways in which uncertainty could be treated differently, there is no agreement yet on the best way forward, but there was agreement that current approaches should change. This implies a need for a period of experimentation and debate in how we to address the planning and assessment challenge and how uncertainty is communicated to decision-makers. Simplicity and transparency would be important.

It was suggested that, as with national models of the economy, a plurality of tools would be helpful in the transport sector rather than only relying on the current National Transport Model. The potential for some kind of futures laboratory to explore these issues was raised.

There was also continued support from many for the use of existing tools to understand how substantial some nearer term or known uncertainties might be and to ensure that those decisions less influenced by long-term changes to the mobility system continue to be assessed rigorously.

Acknowledgments

The report was assembled by Greg Marsden based on the rapporteur notes provided by Ersilia Verlinghieri. The workshop participants are gratefully acknowledged for their contributions. The report is agreed as a summary of the meeting by the Commissioners and we are responsible for any omissions or factual errors.

Attendees

- Professor Greg Marsden, Institute for Transport Studies, **University of Leeds**, Commission Chair
- John Dales, Director, **Urban Movement**, Commissioner
- Professor Peter Jones O.B.E., Centre for Transport Studies, **University College London**, Commissioner
- Alice Crossley, Group Leader - Performance Analysis and Modelling, **Highways England**
- Barry Meehan, Transport Appraisal and Strategic Modelling, **Department for Transport**
- Ewa Kimietowicz, Team Leader Transport, **Committee on Climate Change**
- Ellie Davies, Senior Analyst – Surface Transport, **Committee on Climate Change**
- Anesu Bwawa, Policy Advisor, **National Infrastructure Commission**
- Nicola Kane, Head of Strategic Planning and Research, **Transport for Greater Manchester**
- Julian Laidler, Senior Development Officer, **Transport for Greater Manchester**
- Steve Gooding, Director, **RAC Foundation**
- Dr Tom Cohen, Research Fellow, **University College London**
- Hedley Ayres, **National Audit Office**
- Corinne Swain, Arup Fellow – Planning, **Arup**
- Professor Glenn Lyons, Centre for Transport and Society, **University of West of England**
- Tom van Vuren, Divisional Director, **Mott McDonald**
- Erik Verroen, Specialist in Robust networks and Traffic Models, **Rijkswaterstaat**
- Joan Hancox, Head of Transport Strategy, **Buckinghamshire County Council**
- David Christie, Demand Modelling Manager (Acting), **Transport for London**
- Laura Comeau, Strategic Analysis, **Transport for London**
- Lynn Basford, **Dominic Lawson Planning, CIHT Council**
- Ersilia Verlinghieri, Commission Secretariat, **University of Leeds**