

# SYDNEY UNI DRIVES MOBILITY-AS-A-SERVICE EXPERTISE IN CITY TRIALS

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The Sydney-based Institute of Transport and Logistics Studies (ITLS) is an expert contributor to public policy on transport and logistics – in Australia and around the world. Founded in 1991, its expertise in mobility econometrics helps transport organisations to find practical responses to public challenges. Today, ITLS is running one of Australia's first ever, comprehensive mobility-as-a-service (MaaS) trials.

International collaboration is what sets ITLS apart from many other academic transport-research institutes. ITLS has a mobility service that partners with the private sector and government to analyse complex transport and logistics challenges. According to Professor David Hensher, Founding Director of ITLS, the institute's global reputation is built on a tradition of partnering with the transport industry, **addressing challenges**, and feeding results back into transport services and the vehicle industry.

'At ITLS, our focus is not just on research,' says Hensher. 'Our focus is on building relationships with public transport systems: it's about how we can help them in day-to-day operations and long-term strategy. Uniquely – for an institute – we have helped to train transport managers in Australia, and once they are working in the industry they contribute directly to our research programs.'

## Devising a bus-service trial in Sydney

In 2018, Japanese tyre manufacturer, Bridgestone, contacted ITLS wanting to engage broadly on mobility research. This led to an initial program of research centred on a trial to measure the relationship between the performance of tyres on buses and cost efficiency. The company wanted to place sensors on the tyres of buses that were in



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Professor David Hensher, Institute of Transport and Logistics Studies, University of Sydney

service in order to track bus driving behaviour and performance. Bridgestone's objective was to find the relationship between **tyre pressure, driving styles and maintenance regimes**.

'Bridgestone contacted us because of our reputation,' says Hensher. 'We are well connected with the public transport system in Australia, and are part of a global transport collaboration funded by the Volvo Research & Education Foundation called Bus Rapid Transit+ Centre of Excellence.'

Using its contacts within the New South Wales transportation industry, ITLS helped to design a trial program with a private bus service, Forest Coach Lines, which operates in northern Sydney.

'We created a prototype analytical model to analyse how to make bus operations more efficient,' says



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Hensher. 'This enabled us to ask some fundamental questions: Do young drivers accelerate more aggressively; does that impact punctuality; and what are the costs in terms of fuel, and wear and tear?'

According to Hensher, trial results are helping Bridgestone to determine the optimal pressure for bus tyres. They have also generated feedback to Forest Coaches on potential ways to save costs on fuel including via driver training and tyre-management programs.

### **Citizen choice in Newcastle, UK**

ITLS also helps overseas agencies to devise transport policy. With a dedicated mobility service that partners with public bodies, ITLS can build models to predict the take-up of transport services using econometrics – a branch of statistics that applies to human economical behaviour.

'From late 2017 to early 2018, we partnered with a government agency from the north-east of England that is trying to improve community transport,' says Professor Nelson, ITLS Chair in Public Transport funded by Transport for NSW. 'They wanted us to develop an app that would help citizens identify sustainable forms of transport in situations where it was a logical option.'

The funded project drew on ITLS' previous research into a mobility-as-a-service (MaaS) app. The core of the research was a series of algorithms developed by ITLS that could predict the circumstances in which a potential travel customer would choose one form of transport over another. Three ITLS – who are econometrics experts in choice and preference modelling – took part in the project.

'Our expertise in transport choice analysis gives us global differentiation,' says Hensher. 'This expertise is why we are asked to advise UK agencies on their mobility agenda.'

The outcome was a practical online tool. ITLS created the brains of the app – a 'what if?' decision-support app that encapsulates the mobility options for citizens in a specific area. The app accommodates a series of customer preferences, and then provides the user with a series of logically-ranked options from which to make a choice.

### **Global connections in advanced mobility**

Using a network of global contacts, ITLS is helping governments and transport systems around the world to trial mobility options. The organisation has maintained a presence at the University of Johannesburg since 1994, when it helped South Africa's first post-apartheid government tackle public transport issues.

'Today, we are working with a ports and logistics research team in China,' says Professor Mike Bell, ITLS. 'Also, we are working with Oxford Economics to study the market applications for different alignments of inland railways. We have also recently partnered with University College London to conduct transport research.'

### **MaaS trials in Sydney**

Over its three-decade history, many ITLS graduates have begun careers in the transport industry and are now part of our informal, global mobility network. As a result, transport companies and agencies from around the world look to ITLS to help solve seemingly intractable transport problems.

One advantage of working overseas is that ITLS can bring this expertise back to Australia. ITLS is currently working on the design, implementation and evaluation of one of Australia's first major MaaS trials in Sydney, New South Wales.

'We are active in advising our local industry partners, such as Transport for New South Wales, in understanding how mobility systems of the future can embrace the opportunities of major new influences such as electrification, automation and sharing,' says Nelson.

'We are proud of our international relevance. We provide a translational bridge between academic research and practical transport policy. Our value add is identifying travel answers that other institutions cannot find.'

Says Hensher: 'We are not just a research centre; we teach at the postgraduate level as well, and over the years many of our graduates have graduated into the transport industry. This has created a superbly placed network that helps us to set up high quality trials and research programs.'

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