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Institute of Transport and Logistics Studies (ITLS)

The University of Sydney

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Cover image: North Sydney traffic

We acknowledge the tradition of custodianship and law of the Country on which the University of Sydney campuses stand. We pay our respects to those who have cared and continue to care for Country.

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Who we are

The Institute of Transport and Logistics Studies (ITLS) at the University of Sydney Business School is a leading international centre of thought leadership in the critically linked areas of transport, logistics, infrastructure and supply chain management.

With all of these facets holding the key to Australia's economic competitiveness, societal wellbeing and environmental prosperity, we focus on providing impartial, evidence-based research with a view to inform the management and policy directions of industry and government. Established in 1991, our goal is simple: to contribute to the design, improvement and optimisation of infrastructure, transport and logistics initiatives around the world.

Our diverse areas of interest include the journey of goods and services from manufacture to disposal, as well as ways of improving the efficiency of national and international freight companies and distribution systems. We are interested in all aspects of passenger mobility and accessibility, from the experiences of commuters travelling to work by car or public transport, to those traversing the globe on aircraft or ship for business or recreation.



We are world experts in evaluating the value of time travel savings, travel time reliability and safety as major inputs when establishing the benefits of transport projects. In a broader context, we are dedicated to identifying strategies for reducing vehicular pollution, greenhouse gas emissions and traffic congestion, as well as encouraging initiatives that promote individual wellbeing and environmental sustainability, and importantly, improving efficiency and productivity to support economic development.

Significantly, we are also a highly respected and internationally recognised academic institution that provides graduate teaching, management development programs and short executive courses in all areas associated with transport, logistics and supply chain management.

In 2018, the prestigious Shanghai Ranking Consultancy ranked the University of Sydney No. 1 in Australia and No. 6 internationally for transportation and technology in the annual Academic Ranking of World Universities (ARWU).

What we do

The work of ITLS is proactive, collaborative and wide reaching. It includes the analysis and review of infrastructure projects and provides institutional design recommendations, including pricing, organisation and governance for potential infrastructure, transport and logistics solutions.

Whether assessing the merits of a proposed toll road, port terminal, freight route, airport or airline route, or consulting on the viability of investment in heavy or light rail, bus rapid transit or high-speed rail, we aim to assist governments and stakeholders to make better informed decisions in alignment with consumer needs and budgetary constraints. We also specialise in collecting new primary data (including big data) on the attitudes and opinions of both public and private sector stakeholders on a range of important matters, including the improvement and prioritisation of public transport initiatives and freight strategy options.

Crucially, all our work is informed by the knowledge that any transport and logistics solution must be integrated within the parameters of planning and land use requirements at local, urban, regional and national levels.

We know it must consider the design of future cities, serving to maximise market and destination access while ensuring that the distribution of goods and services exerts minimal negative impact on urban efficiency and lifestyle.

We also understand that transport and logistics is an ever-evolving field that will continue to have a profound influence on the way society goes about its business, and which will experience ongoing challenges stemming from many issues such as population growth and increasingly stringent environmental obligations. It's our task to assist companies and policymakers in meeting these challenges with state-of-the-art, innovative solutions.

“The research group at ITLS is globally recognised for its contribution to the development of choice models that not only have added to the body of theoretical knowledge, but also delivered practical tools that are widely used by practitioners.”

Kenneth Train

Vice-President NERA Economic Consulting
and Adjunct Professor of Economics,
University of California, Berkeley



Why our work is important



More than just something that allows us to travel from point A to point B, effective infrastructure and transport systems are central to our way of life.

From an economic growth perspective, these systems are crucial to improving efficiency and national productivity, and may even provide the means of exerting competitive advantage over other nations. With transport and logistics activities accounting for up to 20 percent of Australia's business and household costs, the importance of understanding network optimisation strategies cannot be overstated.

Effective transport is also central to the concept of liveable societies and is essential for creating environments that people enjoy living in. Considering that traffic congestion involving virtually all forms of public and private transport (both passenger and freight) in our large urban areas has been identified as a major source

of individual dissatisfaction, a focus on delivering efficient solutions is paramount. At an economic level, this congestion has been identified as a potential threat to Australia's competitive advantage with its East Asian counterparts.

Perhaps, most importantly, the health of the environment and of entire populations is also irrevocably linked to the quality and nature of infrastructure and transport distribution systems. With strategically formulated solutions and technologies offering enormous potential for pollution and greenhouse gas reduction, the continuation of work in this area demands the highest priority.

“The ITLS is one of the rare Australian university institutes that effectively bridges research and public policy. Through its pragmatic, results-oriented approach and willingness to challenge conventional wisdom and political orthodoxy, it has made a significant contribution to the quality of public debate on transport issues.”

The Hon Nick Greiner AC
Former Premier of New South Wales

Projects and contributions

Centre of Excellence in Bus Rapid Transit (BRT) Development

A research centre established in conjunction with the Volvo Research and Education Foundation, designed to help break the emotional attachment to investment in expensive heavy rail systems and to encourage governments to consider better-value-for-money options.

iMOVE Cooperative Research Centre

A 10-year research program that sees ITLS actively involved in a number of projects with industry partners, including the facility and network optimisation project with Australia Post.

Travel Choice Simulation Laboratory (TRACSLab)

The creation of a visualisation laboratory to study travel behaviour and drivers' interactions. The aim of the laboratory is to improve the capabilities of transport planning techniques by developing new methods to improve the realism of regional congestion modelling and the mathematical representation of traveller decision-making, thereby permitting an improved long-term transport plan.

Mobility as a Service (MaaS)

Ongoing extensive research on MaaS and intelligent mobility with a wide range of industry partners involved.

Understanding the impact of autonomous vehicles on behaviour and interactions

Ongoing research related to automated vehicles. Insights from a number of projects should prepare our society for more automated vehicles on the roadways.

MetroScan

A state-of-the-art planning and evaluation capability (encompassing demand forecasts, benefit-cost analysis and economic impact) to assess the merits of major infrastructure, such as roads, airports and public transport (heavy and light rail and bus and ferry systems), as well as precinct investments, such as new housing and industry/business stock.

Getting to work: barriers and facilitators for people living with disability

Providing strategies to address key transport-related barriers in order to facilitate workforce participation by people living with disability.

SPARA 2020

A three-year, €2.4m project co-funded by the EU Northern Periphery and Arctic Programme designed to address some of the challenges facing peripheral and remote airports. The aim of the project is sustaining, future-proofing and delivering community and regional resilience and connectivity with medium-term, proactive and innovative responses to the special challenges of, and threats to, remote and peripheral airports/aviation.

Supply chain cybersecurity

Demon game models are being developed to highlight vulnerabilities in the cyber networks supporting global supply chains, with a particular focus on the container shipping industry.

Other contributions:

- monitoring of incentives to discourage the use of private transport and boost the popularity of public alternatives
- the pivotal role of our NSW government-funded Chair in Public Transport in the development of Sydney's and NSW's long-term strategic transport plans
- the detailed examination of the relationship between transport activities and health with a particular focus on reducing obesity via active transport alternatives
- scheduled service network design, including pioneering the use of spanning trees to optimise the location of hubs with applications to Sydney Harbour ferries and the global container shipping network
- focusing on addressing the challenges facing ports and shipping businesses, including the development of new optimisation models to identify where best to locate intermodal distribution centres
- engagement with airlines and airports on delivering profitable, customer-oriented, competitive and sustainable services at all levels of the aviation value chain
- development of new behavioural ways of studying the performance of supply chains.

Our partnerships

Since its inception over 27 years ago, ITLS has been involved in many successful collaborative relationships spanning the private and public sectors.



We work with a range of government, industry and community stakeholders, such as state transport authorities, road safety commissions, bus and coach organisations and aviation businesses to seed the development of innovative ideas in transport, logistics and supply chain policy and professional practice.

As advisors on all major toll road projects in Australia and New Zealand, we have been extensively engaged with bidding consortia comprised of companies such as Transurban, Theiss, Macquarie Bank, ABN AMRO and John Holland, undertaking much of the work relating to the valuation of benefits like travel time savings.

We have advised on distribution networks for reverse logistics specialists such as AWA Ltd, provided input on supply chain logistics for companies like Nestlé and Australia Post, and have been trusted advisors to the private bus sector on aspects of government interaction. ITLS also boasts significant and important links to Australia's procurement sector, which looks to us for advice on the setting and improvement of their industry standards.

“ITLS is a world-leading centre in the areas of transport, infrastructure, logistics and supply chain management. In order to optimise the development of public transport and increase public transport use, the NSW Government formed a partnership with ITLS to assist in this general aim.”

Clare Gardiner-Barnes
Deputy Secretary Freight, Strategy and Planning,
Transport for NSW

In addition to our private sector engagement, we are also extensively involved in important government review processes, including work around the New South Wales long-term transport master plan. We have also conducted a significant proportion of the valuation and impact analysis in relation to projects such as Sydney's heavy rail and bus rapid transit system network.

Our Board of Advice ensures that we stay relevant to the greater community. The board supports the continued development and utilisation of the institute as a centre of excellence, adding value to society. The academic and commercial membership of the committee gives a broad network for the sharing of expertise and experience.

Furthermore, our strong international affiliations with the Department of Transport Engineering and Logistics at Pontificia Universidad Católica de Chile, our partnership with ITLS (Africa) in South Africa, Massachusetts Institute of Technology (MIT), Instituto Superior Técnico (IST) Universidade de Lisboa and EMBARQ (the World Resources Institute Centre for Sustainable Transport) network provide a rich environment in which to develop and share collective thought advancement in all areas relating to global transport and logistics issues.

Our training capabilities

Additional to our focus on research and consultation, ITLS is also a specialist course provider dedicated to developing the next generation of infrastructure experts and planners.

We offer formal graduate coursework and research programs that lead to masters and PhD qualifications and are also strongly engaged with executive programs in partnership with both government and industry bodies.

A major strength of ITLS is its success and reputation in the custom design and delivery of training programs to suit the needs of particular organisations. ITLS has appropriate infrastructure to deliver award and non-award programs anywhere in Australia, programs that may be delivered in face-to-face, distance and/or online mode. We always encourage a strong, quality partnership between ITLS and a specific organisation or industry association in the development and execution of such programs. Such a partnership involves some component of teaching by industry personnel. To illustrate this capability, we refer to the very strong association and quality partnerships forged between ITLS and the Bus and Coach Association of NSW, and with the Roads and Traffic Authority of NSW.

In partnership with the Bus and Coach Association of NSW, ITLS has developed a program designed to meet the requirements for accreditation for bus and coach companies in NSW under the Passenger Transport Act, as well as executive programs in this area. ITLS offers an online accreditation program (minimum standards) for new entrants to the industry and for incumbents wishing to stay up-to-date on accreditation requirements as part of the annual self-audit. In addition, we offer a Certificate of Bus and Coach Operations for supervisors and a Certificate of Transport Management for managers and advisers to the industry.



“ITLS is unique for the depth and breadth of engagement in the delivery of industry-focused certification programs conducted by organisations such as GS1 Australia. ITLS’ leadership team and the academic staff exemplify what is best in innovative and creative teaching with the students’ best interests at the heart of everything that is done.”

Terry Papadis
Manager, Training Solutions, GS1 Australia

Our leadership

The Founding Director of Transport and Logistics Studies, Professor David Hensher, has been synonymous with the study of transport, logistics and supply chain management in Australia for over three decades.



Professor David Hensher is an internationally renowned research pioneer who has dedicated his career to the analysis and improvement of infrastructure systems around the world.

“Transportation systems are key to the survival of our urban societies and are at the hub of what makes them liveable,” Professor Hensher explains. “They are not unlike our own nervous systems, representing the life-giving infrastructure that enables the rest of the organism to function healthily.”

Originally educated as a mainstream economist, Professor Hensher became interested in transport logistics when he met Professor Michael Beesley at London Business School in the early 1970s. Subsequently convinced that transportation economics represented one of the most relevant applications of micro-economic theory, he undertook a change in direction via a PhD, exploring the little understood area of travel time evaluation. His resulting Hensher Formula revolutionised UK economic evaluation guidelines in relation to business-related travel time saving and became the first of many contributions to global thinking around transport and logistics issues.

Since then he has authored 13 books and over 630 papers, co-founded the long-running Thredbo Series (the world’s premier conference series discussing reform agendas in land passenger transport) and has served as a vice chair of the International Scientific Committee of the World Conference of Transport Research and president of the International Association for Travel Behavior Research.

His catalogue of industry recognition is also considerable and includes the 2009 International Association of Travel Behaviour Lifetime Achievement Award, the 2006 Engineers Australia Transport Medal and the 2009 NSW Bus and Coach Association’s Outstanding Contribution to Industry Award.

Professor Hensher is also the recipient of the Smart 2013 Premier Award for Excellence in Supply Chain Management, and recipient of the 2014 Institute of Transportation Engineers (Australia and New Zealand) Transport Profession Award, an award given to an individual who has made a significant contribution to the development of the transport/traffic engineering profession over a sustained period. He was the recipient of the 2016 Award for Outstanding Research as part of the inaugural University of Sydney Vice-Chancellor’s Awards for Excellence, and in 2018 was selected by the University as one of 25 research stars for the ARC inaugural Engagement and Impact Submission.

Firmly of the belief that transportation and logistics remains a highly neglected area in economics, Professor Hensher continues to stress the importance of the transport logistics interface to national productivity and says the consequences of wrong infrastructure choices by decision-makers and stakeholders have never been as severe.

“Given that we now live in one big world and that infrastructure and transport systems are vital for connecting us efficiently, the challenges facing planners and broader society have never been greater,” he says. “As change becomes more rapid and profound, the ability to respond appropriately assumes ever greater importance.”

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