ABC Magazine Opinion Piece: Food for Thought

David Hensher
David.Hensher@Sydney.edu.au

OP68: (June 2013)

Why is Light Rail starting to dominate BRT again?

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

Almost weekly, we are noting proposals to build light rail in Australian cities. It is also quite marked how absent any serious consideration of bus rapid transit (BRT) is. The old chestnut of emotional ideology is resurfacing as part of the ongoing debate on choice vs. blind commitment. The latter is winning out in a growing number of Australian cities, most recently Sydney and Canberra with serious rumblings in Hobart. What is the logic? It seems to start with the assumption that trains are sexy and buses are boring and that light rail offers much better value for money that BRT. However in almost all cases there has been a detailed benefit-cost analysis of light rail and an almost token gesture to consider, but reject, BRT. The Parramatta Council in Sydney proposal is a recent case in point.

Public Transport (PT) modes serve many roles in cities throughout the world. We see different elements of PT in each city; some having the full complement of bus in mixed traffic, bus in dedicated road environments, light rail in mixed traffic or a dedicated corridor, and heavy rail. Despite the plea for a rational debate on the role of alternative PT modes, to ensure that the service levels offered represent best value for money and deliver on key criteria such as connectivity, frequency and visibility within a network, there is often great resistance to some options on essentially ideological and emotional grounds. Hensher has referred to the debate as one of ‘choice vs. blind commitment’. There is a strong sense of imagery conditioning modal preferences for LRT without a full appreciation of the equivalent or better benefits than can flow from the less favoured BRT.

The most toxic of the debates has been on the potential role of bus rapid transit (BRT) in comparison with light rail transit (LRT) and heavy rail. Despite the arguments promoting the advantages of BRT, there exists so much resistance to BRT as an alternative to a rail solution. Part of the problem may appear to be a perception that any PT option associated with the word ‘bus’ (I have suggested that BRT be renamed as Dedicated Corridor Rapid Transit (DCRT) conjures up images of noisy polluting buses in mixed traffic congestion; yet BRT can, if designed appropriately, deliver a service that is equivalent or better than LRT and/or HR where the evidence can show a clear and strong case of delivering relevant service levels, with built in growth prospects, that competes very favourably with the cost outlays of rail solutions.

Although the predominant focus of traveller behaviour research has been on studying the choice of mode for specific trips, a growing challenge is to understand why stakeholders (i.e., the community at large) in specific geographical jurisdictions, when asked, overwhelmingly support
one PT mode over another, often LRT, regardless of whether they use specific modes. In order to inform policy and to provide a framework for the promotion of BRT where it is applicable, there is a need to systematically identify the extent of community support or otherwise for BRT as a specific PT 'solution'. Too often, policy-makers pushed by politicians and the media, commission studies that pre-select the modal solution (which is increasingly rail) and reject without evidence the possibility that another option such as BRT might provide considerably better value for money given an appropriate level of service, in terms of frequency, connectivity and travel times. See http://www.youtube.com/watch?v=eXNXm6uW1ME for an excellent example of what happened in Portland Oregon, by John Charles, President and CEO of Cascade Policy Institute reveals the failure of Light Rail in comparison to Bus Rapid Transit. See also Victoria, Vancouver debate at http://www.youtube.com/watch?v=2L-tLcoXd2Q.

There is an extensive amount of debate on the relative merits on LRT and BRT. An example of the counter positions on bus-based systems compared to LRT is shown in two opposing views in Sydney. A former Director General of Transport NSW stated that:

“If there is one issue in public transport policy that ranks as a cargo cult, it is light rail. After six or so years of operating public transport, I believe the existing combination of heavy rail and buses is the right mix for Sydney. There is no substitute for heavy rail for mass transit over a distance. For sheer people-moving power around a spread-out city such as Sydney, it cannot be beaten. However, heavy rail cannot take us everywhere we want to go. There will always be a need for linking services in confined areas such as the Sydney central business district. And any rail-based system is expensive to build and maintain because it involves both rolling stock and line infrastructure. The benefit of buses is they cost very little to run and are flexible to operate. Neither is true of light rail, which is comparatively expensive to run and delivers a corridor, not a network, of flexible services. If a road is closed, a bus can take another route. If patronage changes, the route can be altered. Light rail can't respond in this way.” (John Lee, Sydney Morning Herald Opinion Piece, 17 January 2006)

This contrasts with the official position taken in late 2012 by the NSW Government:

“We also considered introducing Bus Rapid Transit between Circular Quay and UNSW [University of NSW]. In our investigations, we assumed the bus alternative would serve the same corridor and travel in dedicated lanes with high capacity ‘bendy’ buses. However, as one ‘bendy’ bus carries only one-third as many passengers as a light rail vehicle, more buses would need to run to meet the same demand. Investigations showed a bus alternative would not cater for the same level of demand as light rail – offering just two thirds of the capacity in comparable traffic conditions. In addition, forecast commuter numbers were much lower– about half. The bus alternative would not reduce traffic congestion to the same extent as light rail. The bus alternative would not sufficiently overcome the key challenges facing the CBD to University of NSW corridor, including: Removing buses from the CBD to improve amenity and reduce congestion, Providing sufficient network capacity to cater to future growth and network extensions, Improving commuter experience through restructuring the public transport network, Catalysing urban renewal. Light rail was therefore recommended as the preferred solution for the CBD to University of NSW corridor.” (New South Wales Government 2012, page 25)

The latter statement fails to understand the important distinction between service capacity and vehicle capacity and the opportunities to offer higher frequency with lower vehicle capacity, resulting in higher service capacity. Brisbane's BRT system runs 200 buses per hour carrying 9,000 persons per hour (pph) at the peak load point, while Ottawa's BRT carries 10,000 pph at the peak load point. Pittsburgh is currently running 96 buses per hour at the peak load point on the east busway. The associated passenger volume is 3,700 pph. Available data shows that BRT operating on an exclusive lane has a demonstrated one way capacity of 25,000 pph and a theoretical capacity well above 50,000 pph.
If public transport is the way ahead as an attractive alternative to car use, investment in such systems should be made in a rational way. There is a need for sensible funding of technology and consideration of appropriate ways of addressing the problems caused by the automobile. Although there are signs of a shift from light rail to bus-based systems (with recent evidence that bus rapid transit is less riskier in terms of cost overruns and patronage forecasts than rail) in some countries, following on from the earlier shift from metro to light rail, there are still many examples of more sophisticated technology being used than is necessary. In Australia, for example, there is a resurgence of interest in LRT with the Gold Coast LRT under construction (as of late 2012), approval in 2013 of LRT in the Sydney CBD and the Eastern Suburbs, and proposals put forward in Canberra and Western Sydney for new LRT. BRT was either ignored or given very little interest (‘light assessment’), again suggesting a strong ideological attachment to LRT.

Buses, especially bus-based transitway systems are arguably better value for money, and if designed properly, can have the essential characteristic of permanence and visibility claimed to be important to attract property development along the route which is compatible with medium to high density corridor mobility. To achieve this, however, the bus industry in many countries needs a ‘wake-up’ call. There is growing evidence around the world, in origin-destination density contexts similar to locations proposed for light rail, that a dedicated BRT system (i.e., road infrastructure dedicated to buses only like in Brisbane, Curitiba, Bogota, Pittsburgh, Ottawa etc.) can carry the same number of people as light rail for one-third of the cost. It is flexible, it is as permanent as light rail, and it can have the image of light rail (rather than image of boring buses) if planned properly. The USA General Accounting Office (2001) audit of BRT and light rail in 6 US cities. What they found was that the capital cost per mile for LRT compared to BRT in its own lane was 260% more costly. Comparisons with BRT on street or on an HOV lane are not useful and have been excluded. When one notes the lower operating costs of BRT as well, for both institutional and maintenance reasons, the case is clear.

Food for thought

**OP68: (June 2013)**

*Road Pricing Reform – The Interest but Lack of Action Continues*

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

Prof Michiel Bliemer contributed to this piece.

The NSW Parliament is currently undertaking an inquiry into road access pricing. I and colleagues at ITLS made a submission in which we promoted a road reform initiative centred on reducing registration fees and replacing this with a peak period distance based charging regime in the Sydney metropolitan area (and a slightly different and lower distance based charge for non-metro areas where congestion is almost non-existent). The Committee invited me to present our position and cross examined me on the matters. There appeared to be support for some move from fixed to variable user charges to reflect that view that those who benefit from use of the roads should pay. On Monday 27 May a number of organisations were invited to put their position.
The Committee had read all documents provided by academics, and posed some very good questions to the NRMA, Infrastructure Partners Australia and the Director General of Transport. The Committee seemed very much in favour of a complete overhaul of the financial system for infrastructure, and asked mostly about whether the different parties would support it, and how it could best engage the community in the discussion.

The NRMA was all about ‘car drivers already pay enough’. This was mentioned in the opening statement (‘car drivers pay $15 billion per year’), and mentioned that car drivers need to know where the money goes to. The Committee made it very clear that the road access pricing reform did not necessarily mean that prices would go up for the average car driver, however, the NRMA kept referring to extra charges. When asked explicitly whether the NRMA would support a system in which the car driver on average would not pay more in order to make the system more efficient, the NRMA responded that they may perhaps support that, although the government first has to invest in better public transport, better travel information, and more efficient management of roads before discussing a new charging system. The same answer came when the NRMA was asked whether they think road access reform could be used as a demand management tool. The Committee asked whether the members of the NRMA would be considering the true cost of travel, The NRMA representative responded that that is not how people think. The Committee asked the NRMA if they could play a role in engaging the community to gain a better insight into this true cost of travel. The NRMA was hesitant, and re-iterated their demands (more travel information, better management of roads, more infrastructure, etc.). The response is rather disappointing, but not surprising, especially given that the NRMA plays the most crucial role in getting acceptance; their support is needed. In my view the NRMA is not as informed as they should be re benefits to members; their views are very traditional and not really helping their members.

Infrastructure Partnerships Australia (Mr. Brendan Lyon, IPA) was very supportive of a new road access pricing reform. He mentioned that there will be winners and losers, for example winners are people who drive by car from Sydney North-West to the CBD, as they are currently paying a lot in tolls, whereas people coming from the South-West pay no tolls. So a system that charges the whole network would shift how people currently pay. He also believes that the reform should consider all infrastructure, so both the prices of private and public transport should be considered. There will be users of parts of the network that will subsidise other users on other parts of the network, but that is inevitable according to IPA.

Transport for NSW (Mr. Les Wielinga, the Director-General of Transport (DGT)) did not oppose road access reform, but did not seem committed to take any lead here. The (understandable) response to most questions was “it is currently not a policy, so we do not do it.” The DGT did mention that kilometre based systems, like in Germany, are currently available, and that the trucks registered in Victoria drive 80% of their kilometres in NSW, and he thought a new system should make those trucks pay for the use of NSW infrastructure. The Committee finished by stating that they are looking into a complete reform of the system, including the Commonwealth fuel excise. The DGT supported that, as he said that the fuel excise tax that trucks pay does not represent the costs they incur on the system, since the engines have become much more efficient.

On balance, the Committee appeared to be quite convinced by the overwhelming evidence on the benefits of road access pricing, but is looking at how to get community engagement, and was hoping that the NRMA or Transport for NSW (by means of the Westconnex project) could offer opportunities for getting community buy-in using some trials or open a dialogue. There does not
appear to be much willingness on the part of the organisations interviewed; however the best spin is that they did not close the door completely and gave some conditional support.

Food for thought

**OP67: (May 2013)**

*Where is funding for large transport infrastructure projects coming from? The tollroad challenge*

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

With rare exception, actual tollroad traffic in many countries has failed to reproduce forecast traffic levels, often by as much as 50 percent, regardless of whether the assessment is made after an initial year of operation or as long as ten years after opening. Pundits have offered many reasons for this divergence, including optimism bias, strategic misrepresentation, premature ramp up dates on tollroads, the promise to equity investors of early returns on investment, the global financial crisis, errors in land use forecasts, and specific assumptions underlying the traffic assignment models used to develop traffic forecasts.

Given the desire to increase accuracy of the major source of risk associated with investing in urban toll roads, this suggests that a different funding model may be required. The traditional funding model within a public-private partnership (PPP) has involved a mix of debt and equity. Equity investors have typically demanded an early return on their investment, often as early as the first year of a toll road. Given the growing evidence that traffic levels (and hence revenue) fail way below forecasts in the early years, and in the case of many tollroads it takes 6 to 10 years to reach the initial (as distinct from re-based) traffic forecasts, and new tollroads seem not to learn from the evidence, some serious rethinking is required for the funding model, if we are to avoid the financial failings of such grand infrastructure as the cross-city tunnel in Sydney, the Lane Cove tunnel in Sydney and the Airport Link in Brisbane.

The alternative might well be a debt financed model resident within the public sector, with future prospects of equity finance if the evidence on actual traffic levels bears sufficient appeal to warrant equity contributions. With government having what amounts to 100 percent equity in a tollroad, there is an incentive to ensure that the accuracy of traffic forecasts reflects the true risk of the investment, avoiding inflated forecasts which have been used in the past to falsely attract private investment (and to make such investments look better in benefit-cost terms). Whether this will occur, time will tell!

Food for thought
OP66: (April 2013)

The overemphasis on radial infrastructure to the neglect of circumferential network solutions

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

A metropolitan strategy in our capital cities must recognize the growing amount of circumferential travel, the over emphasis of investment that is radial centric (towards the CBD), and opportunities we have to create multimodal road corridors where high capacity, high frequent bus services on dedicated lanes/corridors, separated to stop other vehicle classes, is an appropriate transitional, and maybe long term permanent, solution to many of the accessibility/mobility challenges of growing metropolitan areas. The West Connex road Project in Sydney (a new road corridor between Parramatta and the areas surrounding the airport and shipping port that bypasses the CBD) is one such multimodal opportunity.

The opportunity is there with all major transport infrastructure projects to start thinking in terms of urban revitalization and to see such projects as corridor opportunities that can improve the efficiency of the overall transport network while also rejuvenating parts of run down road corridors. Building multimodal road corridors with exclusive lanes for buses with the prospect of conversion if required to light/heavy rail will have much appeal (money can go further per km of investment). Building the occasional very expensive heavy rail line is unlikely to achieve this for the network (within the budgets we are likely to have for at least the next 50-100 years). But all the while emotional ideology drives the debate leading to the saying that ‘buses are boring and trains are sexy’, it looks like we will have to live with blind commitment to specific very expensive and limited-benefit modes in many cities in Australia.

In addition, as Australia becomes less dependent on traditional employment in industries such as manufacturing and moves to a focus on professions such as banking, services and para-professionals including small components manufacturing and distribution, etc., we need to recognize the importance of what is called employment agglomeration (which makes the CBD currently so attractive); however we can achieve suitable professional employment agglomeration if we have high quality connectivity between the locations that need to communicate physically. This requires a much more serious focus on cities of cities with high connectivity to accommodate the growing circumferential nature of travel as well as creating jobs throughout the metro that contribute to reducing congestion on our roads, especially in the extending peaks.

What is required is the identification of major attractors that provide the mechanism to trigger growth in jobs that can move away from the CBD and conduct business efficiently and effectively. Major hospitals and Universities are examples of such investment triggers. The airport at Badgeries Creek in Sydney (while less of a magnet that hospitals and Universities in terms of the mix of professional and sub-professional skills) offers an example of an employment agglomeration opportunity that serves the West of Sydney.

Food for thought
OP65: (March 2013)

*Job location is becoming a top priority in planning our public transport*

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

At a recent seminar at my Institute, The Hon Nick Greiner (Premier of NSW 1988-1992) made the very passionate statement that location decisions of businesses have inadequately been considered in the way we develop our strategic transport plans for metropolitan areas. Another way of saying this is that we tend to put the cart before the horse (or ‘arse about’ planning of land use (location) and transport service investment). Almost without exception, not one of the metropolitan planning agencies has a grip on how businesses respond to potential transport investment in terms of where they might build or relocate their businesses, which has significant flow through effects on job redistribution and job creation. Even respectable land use forecasts are typically based on population growth and little else of substance.

So why is it the case that we are doing a rather poor job in recognizing the opportunities to grow jobs in the context of investment in new infrastructure? Part of the reason is the dearth of decent data and models that can provide guidance on this matter at a meaningful level of geographical resolution. It also is linked to a dominant focus on passenger travel models with so little really known about how businesses (including freight distribution) respond to improved levels of accessibility offered by both private modes and public transport.

What is needed is some strategic vision on what potential there is to relocate critical infrastructure such as airports and major road corridors to areas where we can not only take pressure off of the existing congested networks, but also revitalize part of the metropolitan area, create jobs and improve liveability. Badgerys creek airport proposal in Sydney is one such opportunity; yet it remains clouded in State-Federal politics. As Nick Greiner said at the seminar, it will invigorate the western suburbs of Sydney in ways that few infrastructure projects can, delivering a diverse set of employment opportunities.

Food for thought

OP64: (February 2013)

*Selling urban revitalization and not simply a road*

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

The commencement of the planning and business case for the West Connex project (stretching from the outer west of Sydney through to the port and airport) is an exciting way to begin 2013. What we have here is a real opportunity to view major infrastructure investment as a way to
revitalize our urban landscape by thinking of the proposed corridor as a framework within which to take a multidisciplinary approach to planning that embodies public transport and active transport (pedestrian and bicycles) in addition to cars and trucks. It also enables landscape architects and designers to think bold about making movement through the corridor and activity participation at locations along the corridor an enjoyable and productive experience. This is a showcase opportunity not to be missed. What we do not want is yet another (stand alone) tolled road where the focus is on maximizing the toll revenue of equity and debt investors. The corridor suggests that bus rapid transit (BRT) could finally be shown to have real merit as a value for money high frequency and reliable public transport offering connecting many parts of Sydney.

What is important to note about West Connex is that it is not a public-private partnership (PPP) in the traditional toll road sense of consortia bidding for the right to win a long term franchise to build and operate the corridor. By staying in the hands of government (even if in time private investors may have an opportunity to participate), will hopefully ensure that a multimodal perspective is adopted where the overriding objective is social net benefit in contrast to shareholder dividends and operator profits.

If one might be so bold as to suggest a vision of what this corridor could accomplish, it would be to have a BRT system right along its full distance (combining all stops and express services) with efficient connecting buses, a distance-based tolling by time of day for cars and trucks designed to be refreshed as traffic levels change (in contrast to a CPI adjusted flat toll which takes no account of congestion levels), with a common number of car and truck lanes (preferably two) in each direction with priority at all main intersections and where necessary some amount of tunneling to alleviate delays, and finally new standards on the design and maintenance of street furniture as well as facades of all shops and other service facilities along the corridor. One minor but infuriating point – no placing of grass and plants unless the Authorities look after them. There are too many roads in Sydney where the vegetation is overgrown and neglected. If this comes to pass then we may just have a showcase multimodal corridor that is a true recognition of what Sydney can do to revitalize its urban fabric that is socially and environmentally responsible as well as enhancing the livability of Sydney and happiness of the people.

Food for thought

OP63: (January 2013)

How well are we doing on the BRT Gold Standard

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney
There are a number of efforts to provide guidelines on what is a ‘good’ Bus Rapid Transit (BRT). A team of specialists\(^1\) that have worked on many of the world’s best BRT systems have catalogued the main design features of BRT systems and have scored them as a way of signalling to consumers, decision-makers, and the general public that a particular BRT system or proposed system is of a certain quality in relation to “best practice.”

To provide guidelines on the role of variations in BRT systems, the BRT Standard 2012, as it is now referred to, has recently been developed as a scoring system, for the purpose of recognising BRT systems around the world which have the characteristics of the world’s best BRT systems. The best BRT systems are the ones that combine system efficiency with passenger comfort and convenience. Only the BRT Standard Committee is currently authorised to confer the BRT Standard Gold, Silver, or Bronze brand on a BRT system.

The BRT Standard 2012 approach is summarised below. The methodology of this scorecard approach is based on the award of points to elements of system design where these system design elements are known to consistently improve system performance, thus indirectly linking the BRT Standard to performance outcomes. The points combine to a total upon which the relevant standard (Gold = 85 or more points, Silver = 70-84 points, and Bronze = 50-69 points) (ITDP 2012).

### BRT scoring standards

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MAX SCORE</th>
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<tr>
<td><strong>SERVICE PLANNING</strong></td>
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<tr>
<td>Off-board fare collection</td>
<td>7</td>
</tr>
<tr>
<td>Multiple routes</td>
<td>4</td>
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<tr>
<td>Peak frequency</td>
<td>4</td>
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<tr>
<td>Off-peak frequency</td>
<td>3</td>
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<tr>
<td>Express, limited and local services</td>
<td>3</td>
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<tr>
<td>Control centre</td>
<td>3</td>
</tr>
<tr>
<td>Located in top ten corridors</td>
<td>2</td>
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<tr>
<td>Multi-corridor network</td>
<td>2</td>
</tr>
<tr>
<td><strong>INFRASTRUCTURE</strong></td>
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<tr>
<td>Busway alignment</td>
<td>7</td>
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<tr>
<td>Segregated right-of-way</td>
<td>7</td>
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<tr>
<td>Intersection treatments</td>
<td>6</td>
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<tr>
<td>Passing lanes at stations</td>
<td>4</td>
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<tr>
<td>Minimising bus emissions</td>
<td>4</td>
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<tr>
<td>Stations set back from intersections</td>
<td>3</td>
</tr>
<tr>
<td>Centre stations</td>
<td>3</td>
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<tr>
<td>Pavement quality</td>
<td>2</td>
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<tr>
<td><strong>STATION DESIGN AND STATION-BUS INTERFACE</strong></td>
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\(^1\) Walter Hook and senior staff, ITDP, Lloyd Wright, ADB, Dario Hidalgo, EMBARQ, Gerhard Menckhoff, World Bank (retired), ITDP Vice President, Wagner Colombini Martins, Logit Consultoria, and CarlosFelipe Pardo, Slow Research
The point system acts as a proxy for quality of customer service so that higher speed or better comfort or greater capacity as examples, attract higher points. The BRT standard gives detailed information as to how to score, including the rationale behind a system which achieves the maximum score, and systems which rate less well. The BRT Standard is an attempt to measure the BRT system relative to ‘best practice’ in system design with the metrics being applicable to a full range of BRT systems.

Whilst the different design elements are not explicitly weighted (although implicitly so through the maximum points available), the intention is to reward good design specifically rather than to performance per se. Although there is a strong link between good design and good performance, performance is additionally affected by the characteristics of the corridor, with favourable characteristics improving performance and vice versa.

Many important indicators of performance (such as door-to-door travel time and bus speed) have more to do with the innate characteristics of the BRT corridor than with the strength of the design. For example, higher bus speeds, which usually mean better performance, can be achieved by operating on limited access freeways with very few station stops. Slower speeds may be realised when the system passes through the city centre with higher stop frequencies and more traffic signals. As such, giving points for
higher speeds would create a perverse incentive to reward project developers who put their BRT systems on limited access freeways and avoid downtown areas.

Perhaps more importantly, the BRT Standard is motivated by a need to help planning BRT rather than simply assessing the outcome of built systems. In this way cities and residents have a basis for comparison and the information to be able to ask for a higher quality system at the design stage which is more likely to lead to better performance.

I wonder how light rail in downtown Sydney might perform in contrast to what we are seeing in Brisbane with its growing system of busways? This is an interesting exercise that should be related to dollar outlays to establish value for money to taxpayers.

Food for thought

**OP62: (December 2012)**

*Starting the road pricing reform process – it is all about the hip pocket and State Treasury revenues*

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

The call for a congestion charge is getting louder and more frequent in many countries as major metropolitan areas experience increasing levels of road congestion. This is often accompanied by a recognition that governments need to find new sources of revenue to maintain existing road networks and to invest in new transport infrastructure. Although reform of road pricing is almost certain to occur at some time in the future, a key challenge is in selling the idea to the community of road users as well as a whole raft of interest groups that influence the views of society and politicians. Simply announcing a need for a congestion charge (often misleadingly called a tax) does little to progress the reform agenda. What is required is a carefully structured demonstration of what might be done to progressively introduce adjustments in road user charges that are seen as reducing the costs to motorists while ensuring no loss of revenue to government. My colleagues (Profs Bliemer and Mulley) and I suggest that this can be achieved by the reform of registration fees in the presence of a distance-based charging regime, that can deliver financial gains to motorists with prospects of revenue growth to the State Treasury of Sydney. Such a reform package is predicted to result in changes to total
annual kilometres of travel (especially in the peak) and flow through gains in travel time that deliver reductions in traffic congestion, typically 4.7 percent reduction in peak kilometres in Sydney. We see this as an essential first stage in gaining community support for road pricing reform – proof of cost reductions associated with improvements in traffic congestion can then be used to continue the reform process.

This road pricing reform plan would require drivers to purchase an on-board unit (OBU) (approximately $50 once off cost) that will record the kilometres by time of day. The off peak kilometres are not charged, but peak kilometres will be charged at the agreed cents/km. This scenario implies that if an OBU is not installed, all kilometres will be charged as peak kilometres, giving an incentive to install a meter (with the expectation that all motorists will do so), just like households have had with off peak electricity meters or with water meters when they were first introduced.

To establish the financial implications of alternative combinations of a peak period distance-based charge (DBC) and discounted annual registration fees, we have built a scenario decision support system (in excel). The key inputs, for each statistical sub division in Sydney (SSD) and status quo (i.e., before) situation, are the mean annual kilometres, the proportion of kilometres in the peak periods (AM and PM), the average daily cost per driver (comprising fuel and tolls, distinguished by peak and off peak periods), annual registration fees, and mean direct elasticities of peak and off peak kilometres with respect to usage costs. In addition, for the reform scenarios, we considered a DBC varying from 2c/km to 10c/km in the peak, and allowed annual registration fees to vary from 30 to 75 percent of the status quo annual fee.

The decision support system calculates the status quo total costs and kilometres for all drivers and revenue to State Treasury, distinguishing outlays and receipts for the peak and off peak periods. We then introduce the range of peak-period DBCs and discounted registration fees and calculate the combination of these two cost outlays for motorists of each SSD that results in both a reduced mean cost outlay to motorists and no loss in
revenue to State Treasury. At the SSD level, we expect to obtain different DBC levels for a given discount on the registration fee, and indeed that is what was obtained. The range is three to eight cents/km. Taking the lowest value would ensure net gains to each SSD motorist, but would result in the loss of neutrality (or better) to Treasury revenue. Placing different charges on motorists over the metropolitan area would raise clear concerns from many perspectives including the political ramifications.

A preferred solution is to take a system wide approach, and to identify a single DBC, given a discounted registration fee, that achieves the required financial outcomes for drivers and State Treasury. The selected peak period DBC is 5c/km with a discounted registration fee of $185, slightly greater than a 50 percent reduction. On average, a driver saves $9 per annum and Treasury gains $32 per driver per annum. These are extremely low amounts per driver, but they translate into sizeable financial gains to all drivers and State Treasury.

Food for thought

**OP61: (November 2012)**

*Infrastructure NSW may have finally got it right*

Professor David Hensher, Founding Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

We are used to a continuing stream of government reports on transport futures, visions, plans etc. Although many often have little to inspire, I believe that the ‘First Things First’ State Infrastructure Strategy 2012-2032, may be one of the best of all documents released over recent years.

Let me explain why I have made this comment. I will focus on Sydney, although I recognize the contribution of commitment to the whole of NSW. First it is a realistic representation of where Sydney stands today in terms of the critical transport challenges, both passenger and freight. It also recognizes that much needs to be done to continue to ensure that car travel is tamed, since it is unlikely that any form of public transport investment (certainly over the 20 year vision horizon), will be able to make a big difference to the congestion on the road network. Cleverly, it recognizes the pinch points
in the road network which can make a huge difference to relieving pressure on the road network (and which have benefit-cost ratios that any public transport project would ‘froth at the mouth for’).

This may well be the first strategic document that substantively recognizes the important role of the bus system, given that more people currently use bus than rail, and that this is likely to continue given the diverse nature of origins and destinations, and the inability (forever in my view) of rail to be able to be funded to have the same impact (and I include the limited benefits of a single corridor rail project such as the North West Rail Project which appears to have escalating costs currently quoted as between $11bn and $15bn). The proposal to have a bus rapid transit system across the harbour bridge and into tunnels (which in part already exist) was an idea I promoted quite some time ago and it is pleasing that the consultants picked it up and showed its merits. Indeed many of the good ideas in the report were set out in my ‘Food for Thought’ pieces over the last three years (so is someone listening to me? Maybe!). Robert Gibbons has also promoted these bus-based strategies over a number of years, such as T-Ways and M routes, detailed in two reports he authored titled "Towards a Transport Vision for Sydney" (NRMA Clean Air) and "Economies and Efficiencies in Urban Transport" (CCG).

The vexed issue of road pricing reform continues and the report recognizes this as well as the challenges ahead. It also says that we need wholesale reform of all charging sources and not just the idea of an add on congestion charge. Whoopie – I have been saying this for years, and in the next ‘Food for Thought’ piece I will set out a ‘solution’ to show how this can be introduced immediately and which will make State Governments no worse off financially, while making most motorists better off. We have to attack the hip pocket first and then demonstrate that we can have reduced congestion with lower motoring costs. So stay tuned. The report by Infrastructure NSW may not have engaged my Institute (indeed we were never invited to contribute – apparently we do not have a brand that is marketable, unlike the big consultants!); however the big names have listened and advised well.

Food for thought

**OP60: (October 2012)**

*Crowding on Train Networks in Metropolitan Areas have become more important than travel time and fares*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

Crowding in public transport is becoming a growing concern as demand grows at a rate that is outstripping available capacity. But what do we mean by crowding? There are five major metropolitan rail systems in Australia and each has their own measure of crowding. For example, Sydney’s CityRail uses the number of standing passengers per square
metre to measure crowding, and its benchmark is 1.9 standees per m². An alternative crowding measure for CityRail is load factor (passengers per seat), and the corresponding target set by the Minister in the Rail Services Contract is no more than five percent higher than 135 percent of seat capacity during the peak hours. Melbourne uses the rolling hour average loads to measure crowding in its Metro trains, and if the number of average passengers per train during a given hour, as counted at the Melbourne city cordon, exceeds 798, a railway line is considered overcrowded. For Queensland Rail, the target of the length of standing time is no more than 20 minutes.

Regardless of formal definitions, it is often the perceptions of travellers that determine whether crowding is a concern or not. In the September 2012 quarter of the ITLS Transport Opinion Survey (TOPS), we asked about train crowding: “How would you describe the level of crowding on your local train services in the peak hours: tolerable, or intolerable? And, what percentage of the time on the train during peak times do you typically have to stand __%?”

Overall, 43% of Australian rail users said that crowding on train services is intolerable. 53% of rail users in Victoria said that crowding on train services is intolerable, which is the worst amongst all states; while 68% of Queensland rail users said that crowding on train services is tolerable.

The % in brackets below X-axis for each category indicates the % of respondents in that category of state.

20.5% train users reported that they spent 80%-100% of time standing on the train when travelling during peak hours.
The response in many cities is to propose more rail investment to reduce the amount of crowding. While this has some merit, a close look at some of the crowding locations raises questions as to why are we not considering the role of long haul bus services in relieving some of this pressure? There are very real opportunities here to start investing in bus rapid transit (BRT) as a way of taking pressure of the rail network while growing public transport patronage. The costs will be much lower per passenger carried that heavy rail. Sadly BRT hardly gets considered in Australia (the exception being Brisbane) and hopefully the Northern Beaches of Sydney. What is disturbing however is the failure of government and other agencies to recognize and promote the virtues of BRT. The ITLS TOPS September 2012 survey found that only 8% of Australians correctly described BRT as ‘dedicated corridor buses’ or a similar phrase; 14% of Australians said ‘never heard of it’, and 32% did not know what it is. 13% of NSW residents described BRT as ‘dedicated corridor buses’, better than other states. What is surprising is that Queensland which has a very successful Busway network in Brisbane appears less informed than NSW and Vic.

Food for thought

**OP59: (August 2012)**

What is happening with bus contracting?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

There is a new wind blowing in metropolitan Australia linked to a new suite of polices for public transport – particularly bus – contracting which have not taken advantage of the accumulated body of evidence globally on the best way to secure continuous performance improvement and value for taxpayers money.

Comments in the media from so called specialists in transport that competitive tendering is the way to go are uninformed in respect of gains achievable by simply placing private bus operators out to competitive tendering. We know after many years of experience throughout the world that serious cost gains to the funder will only occur when a public
monopoly is put out to tender and this cost reduction is a once off windfall gain even if it is up to 30 percent. Subsequent rounds of competitive tendering have been shown to deliver little if any cost gains to the funders. Indeed, if the costs of disruption and tendering are taken into account, these exceed the benefits. Even in Australian this is the case - as shown in Adelaide.

In NSW, plans were being put in place to introduce negotiated performance based contracts with benchmarking in the contracts for the private bus operators but it seems that the well experienced public servants have retired or departed. In NSW I forecast that had the Government proceeded with negotiated performance based contracts with the effective benchmarking process which has been developed but never implemented (which would also have satisfied the Auditor General), a cost efficient outcome ($per km) would have occurred (in the sense of delivering lower costs per km than currently to a level which is likely to be what competitive tender will at best dver) and the contract would have provided all the right incentives to deliver continuous improvement through a trusting partnership.

Instead, the Government in NSW is proceeding with competitive tendering although only for metropolitan private operators but not the outer metropolitan operators. This is a strange set of beliefs that allows what can be good in contracting to be seriously affected by location.

Sadly I believe this industry in NSW is heading to cost escalation, will definitely suffer from loss of trust in the government and be wary of partnerships. The approach to contracting in NSW, with the tender documentation only being available to bidders, looks set to give no gain in cost efficiency but high risk of service decline.

Are the politicians and their public servants being the ‘new broom’ and wanting to be seen to be putting their stamp on the system in at least three States without treating the evidence more seriously? I hope I am proven wrong!

Food for thought

**OP58: (August 2012)**

Being innovative in solving the low density public transport problem

Professor Corinne Mulley, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

How do we encourage people out of their cars and achieve greater mode share for public transport?

The most important factor which influences the success of public transport, and sways people to leave their car at home, is the frequency of services. The evidence is that two
factors are more important than anything else – that of frequency and journey time. When passengers can “forget the timetable” – catch a bus or train in a reasonable timeframe without advance planning – public transport is more widely taken up. By itself, frequency is not enough - even if a bus comes frequently, passengers will not use it if it takes three times as long as a more direct route by car.

So to encourage public transport use we need to increase the frequency of their services and straighten out bus routes. However, on a fixed budget, fulfilling these objectives usually requires taking resources from the local, more circuitous buses on either side of the main routes. And this is particularly important in areas of low density living as the gaps between the higher frequency routes are larger than in the more densely populated central urban areas.

Increasing frequency and reducing travel time in this way creates a problem. How do we cater for all the people who live in the gaps between the frequent bus routes? How do these people get access to public transport?

Flexible transport services can be used to fill the gap and have been adopted successfully in Europe and the US. Flexible transport services are bus services that are flexible either in their route, operator, type of payment or kind of passenger. It may be a bus that diverts to pick up passengers who phone the operator, or that collects passengers from their homes to meet a specific train. It may mean taxi-sized vehicles which come at a set time and are shared by different passengers, or vehicles that operate on a timetable during the day but are on-call at night.

Some flexible services already exist in Australia. In Melbourne, Telebus is a demand-responsive service which deviates from its usual route for an extra fare: passengers can either walk to the bus stop, or pay an extra dollar and be collected from or delivered to their home. The ACT is also actively implementing a flexible transport network. The usual response is that this must be more expensive. But flexible transport services should not be so quickly dismissed. Clever network design in low density areas can work to produce corridors of high frequency with flexible transport as access to these services, within the current budget spent on subsidy. And it can greatly expand the number of people that have access to public transport overall.

So why don’t we see more flexible transport in Australia – especially as low density living so predominates? It’s a combination of a number of factors. Regulation can make it difficult – in NSW, for example, you can’t operate a taxi-sized vehicle that behaves like a bus or a bus that behaves like a taxi because the law defines what a bus is and what a taxi is. Operators too prefer the fixed route service because this is what they know and understand. But it is not only the fault of governments or operators – the customers also need to understand that the flexible service is a more cost-effective solution to low density public transport than empty buses running around to schedule on the off-chance that a passenger awaits.
Innovation in services might well be an outcome of the decision to put bus contracts out to tender. If it does, will the Australian traveller meet the challenge by changing their travel behaviour?

Food for thought

**OP57: (July 2012)**

A reminder that the real enemy to the use of public transport is the car and the political will to reform road pricing

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

Road pricing reform is much touted by economists and others who see the current charging instruments inadequate in both delivering efficient outcomes for road use (especially in controlling levels of traffic congestion) as well as raising sufficient revenue to fund new infrastructure as well as much needed maintenance of existing road networks. It is estimated that traffic congestion in Australia resulted in AU$9.4 billion of avoidable social costs in 2005, increasing to AU$20.4 billion by 2020. In the USA, the congestion costs (in constant 2009 dollars) continue to rise from US$24 billion in 1982 to $115 billion in 2009. In the USA, this is associated with 3.9 billion gallons of wasted fuel (equivalent to 130 days of flow in the Alaska pipeline), and a SUS808 cost impost per average commuter in 2009. This results in a predictable 'tragedy of the commons'.

Despite these well known statistics, politicians in the main are not supportive of road pricing reform. An example that is typical of political responses is:

“We will not introduce a congestion tax for motorists ... due to the lacklustre standard of the state’s public transport system. ...The Minister ... has ruled out imposing a tax on motorists entering the CBD similar to a system used in London. There cannot be a congestion toll if there is no public transport, and the one thing that [we] ... have not got is proper public transport,” he says. “It would be so unfair to put a congestion tax on people that have no alternative to using their car because of the mess in which the former government left the state.”

It is often the case that when politicians refer to public transport they are assuming rail-based solutions, which are not only very expensive, but in the context of road pricing take many years to deliver, making the case for road pricing reform vexed. If, however, like London, we consider improving public transport by introducing a large increase in the number of buses (designed not to create more havoc on the roads in mixed traffic but to support switching away from the car), then road pricing reform can simultaneously be achieved in terms of a timeline with improvement in public transport. A large increase in buses to support greater connectivity and frequency (something not so feasible with single corridor rail projects) can be facilitated by the importing of ready to purchase buses of high quality from China which are considerably less expensive to acquire than buses manufactured in western economies.
The greatest challenge is how to gain public acceptance that is also convincing to politicians. The experience below typifies public sentiment, albeit misinformed. Setting: ABC Radio 702 Tuesday 4 Oct 2011 8.30-8.55am. Hensher discusses the merits of Road Pricing Reform (after stating clearly that it is more than a congestion tax, and to please stop using the emotive language of a congestion TAX). Conversation proceeds and calls are invited. A plumber calls in. He says (paraphrase): “…I spend up to 5 hours on the roads every day between jobs and now you are telling me I have to pay a congestion tax on top of all of my existing costs for the 5 hours. What is he thinking (the Professor needs to get real)… I do not earn enough income now as it is.” My response (paraphrased): “…I made it very clear I thought that the aim is to reform the entire set of charges (including registration fees) and to set the kilometre based charges to reflect the traffic conditions with the aim of not only enabling you to save time (which is money as well) but to give you realistic options on levels of charge and time of day to travel. It is expected that you will spend less time travelling and can convert such saved time into more productive income earning time.” This is the buy in challenge – how to convince voters that there are benefits to them.

We are of the belief that road pricing reform will entail a slow but progressive set of steps that must comply with the adage “keep it simple and singularly focussed” but do not start with the ultimate journey end solution to reduce traffic congestion so that people spend less time in traffic each day, but with some initiative that has an easier staged sell. Crucially the focus of the reform process must be on asking ‘are travellers paying for the right things’ and not ‘are they already paying enough’? This also translates into a request to stop being obsessed with the question of how much car users pay on average, for congestion is not caused by “…the fact that the tax on a car trip is 50p on average: it is caused by the fact that the next trip is always free.”

Food for thought

OP56: (June 2012)

What’s in a name?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

It is difficult to sell the idea of Bus Rapid Transit (BRT) in some cities in Australia. The mere mention of the word ‘bus’ immediately leads to comments like: “Anyone who lives in Sydney’s fast growing north west knows what a short-sighted idea it is to suggest buses should replace the rail link,” “The idea of putting more buses onto an already crowded road system just beggars belief.” Barry O’Farrell (Premier of NSW) says.

Those promoting a bus-based approach have actually talked about dedicated lanes and corridors just as in Brisbane busway. Yet despite all the efforts to explain that Bus Rapid Transit involves buses on dedicated roads, and not mixing with cars and trucks, the
message has failed in many jurisdictions where the word ‘bus’ is immediately interpreted as buses in mixed traffic competing with cars and trucks.

It is time for a radical move – a name change for BRT. I have been thinking about this for many years and I now believe that we should no longer be talking about BRT but about Dedicated Corridor Transit (DCT). This places the matter fairly and squarely where it belongs – the corridor delivering transit services, with transit defined as all candidate public transport modes, or as defined online as “public transportation system for moving passengers”. That is the big sell, and not whether it is steel track or bitumen.

The next task is to heavily market this new language and I appeal to all supporters of value for money investment in public transport to start talking the new language. The sooner we start the earlier it will be that politicians and their advisers start to see the merits of at least evaluating DCT options that involve more than heavy or light rail.

Food for thought

**OP55: (May 2012)**

*Operating Cost Efficiency of Bus vs. train*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

I recently undertook a comparison of the operating costs of the railways in Sydney vs. the buses (private and public) in Sydney. If we ignore the operating subsidy to rail (which seems to be equivalent to about 42 percent of the operating cost (2.39 billion operating costs and 1.64 billion subsidy), it appears that a train costs about 14 times more to operate per service kilometre than a bus. This is an interesting statistic. One particularly interesting feature of this statistic is that if the trains carry at least 14 times more passengers per service km than the buses, then we might reasonably declare that the operating cost efficiency of trains is at least as, if not superior to, that of the buses. In the Greater Metropolitan Area of Sydney context it is sadly not the case for the trains. Published figures indicate that buses have 13 percent more passenger trips than rail. The conclusion is that on average, trains are close to 16 times more cost inefficient in respect of operating costs per passenger trip per service kilometre than buses. This is a staggeringly different sum and raises some serious questions about value for money in investing in rail vs. bus. Presumably there are many other benefits of rail that can compensate for this huge gap in cost efficiency? One does wonder however whether these other benefits can narrow the factor of 16 by that amount.
Food for thought

**OP54: (April 2012)**

*Avoiding the Peak*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

Why is it that so many people who have the opportunity to travel outside of the very highly congested peak periods, especially in Sydney, Melbourne and Brisbane where congestion is getting worse, opt to still put up with the 7.30-8.45am peak of the peak period in the daily commute? This seems to me to be a very important question, since as little as a six percent reduction in car traffic during these periods can make the difference between stop/start and relatively free flow?

There are many reasons why people still do this, and we are talking about individuals who could indeed exercise the opportunity for more flexible trip times. But research I have undertaken suggests that many more people could begin earlier or later, work a little at home before starting later and still be productive, and all with the support of their employer. It is the fear of the unknown that drives a reckless commitment to the peak of the peak for at least enough people to make a difference to congestion on the roads.

As an example, I have been experimenting with travel in Sydney. I used to leave home at 6.45pm for my commute to the University and it took typically 60 minutes. On a good day we might get it to 45 minutes and on a bad day it is often 90 mins. So after getting tired of this, I started leaving home at 6am and my travel time was always 45mins with little travel time variability. Then I looked at a later start, leaving home at 9.30am, which gave me a 35-40 min trip almost every day. However, and most importantly, I would still get up and be at my computer by 7.15am, get all the emails (including spam) out of the way and do a solid 90 mins of productive undisturbed work before heading into the official office most relaxed and free of traffic congestion. I have found that I am doing as much productive work as before, but often exceeding what I did before. Is there a tinge of guilt by not being seen in the office at my previous time of 7.30ish? There was in the beginning, but not anymore. I am contributing far more, still doing all my duties and in contact by email, skype, phone as required.

So if more people at least experimented this way, I believe that they would have the approval of the employer, they would be less stressed, more productive and take pressure of the governments infrastructure needs budget.

Food for thought
Attracting people to public transport will always be a major challenge, and in many situations where we promote the maintenance of a particular percentage modal share, we appear to be doing no more than fighting to keep the share at around 10-15%. The real ‘enemy’ is the car and despite claims to the effect that total car kilometres are dropping a little bit, public transport initiatives are at best protecting government objectives in respect of overall modal shares. This is admirable, but hardly enough if we really want to grow modal share and reduce car use.

Hindsight is a nice thing to have, but how often have we all indicated that we will never make public transport more attractive until we make the car less attractive, and at the same time we must have a much wiser view of what kinds of public transport services will be sufficiently attractive to enough current car users for them to switch out of the car. I suggest that the following common sense views are consistent with initiatives that are necessary if we are to rebalance the modal shares to give public transport a better future:

1. Recognise that Australian cities are low density with a significant number of origin and destination pairs being circumferential (i.e., not radially centric).
2. Recognise that public transport will not attract current car users unless it can deliver connectivity and frequency that will make a non-marginal difference to door-to-door travel times at times that suit.
3. Investing in a few transport corridors in Cities will have very limited impact on road traffic congestion.
4. Public transport that is not spread widely in a metropolitan area will not have a noticeable impact on public transport modal share.
5. Spending heavily on one or two public transport projects is unlikely to impact on traffic congestion unless the services have a large physical geographic coverage.
6. Continuing to avoid a serious review of road pricing will support the relative attractiveness of car use (despite the levels of traffic congestion in many cities).

To add some light on what might happened if we introduced an additional road pricing charge on top of existing charges for car use, I evaluated, using ITLS’s transport planning model system (called TRESIS), what might be the outcome if we had a 10c/km charge for cars in Sydney. We find that this reduces overall car use by 6%, which is enough to remove most of the bad traffic congestion in the Sydney Metropolitan Area. This will give car users some serious travel time savings per trip, while at the same time contributing over $3bn per annum that can be used to fund new public transport investment.
In the Discussion paper released on 24 February 2012 by Transport for NSW on the Long Term Master Plan it is stated that “Road pricing schemes internationally have different objectives. In considering what pricing mechanisms should be used or whether they are appropriate the road pricing debate needs to centre on the objectives that we are seeking to achieve, the extent to which they will achieve the priorities identified for the future and the impact on the customer who is paying for the service being delivered, including the quality of the service that is provided. Governments and communities around the world are all grappling with the issue of road pricing and what role it plays in supporting a more sustainable transport system.” (Section 8.2.2, page 92). If one of the objectives is to reduce traffic congestion so as to make our cities more livable while investing into public transport, then the example above must surely show real promise in achieving that outcome – it delivers quicker trips on the road while funding much needed public transport. Is there another set of instruments that can achieve this? I doubt it.

Food for thought

**OP52: (February 2012)**

*The need for a set of effective performance measures*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

One of the challenges of public transport service delivery is the measurement of performance and compliance with contractual conditions. These challenges were the main focus of a workshop on performance measurement and compliance at Thredbo 12 (Durban South Africa September 2011). The types of performance measures, incentive and penalty regimes, benchmarking and the associated risks in performance measurement were discussed. Other relevant issues included items such as public transport sustainability, transparency in decision making, innovation (e.g. engineering choices regarding technologies), and the overall benefit of public transport to society. It was also pertinent to consider what evidence exists about the wider impacts of transport interventions on macro policy goals (e.g. the environment, reduction in accident rates, traffic volumes, mode switch etc.); the benefits of integration within the transport system and between transport and related economic sectors.

After 3 days of debate and discussion a number of key recommendations were put forward which I believe represent a healthy direction for performance measurement and benchmarking in each State in Australia. The workshop identified nine critical key responsibility areas (KRA) and a key example of a key performance indicator (KPI):

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<th>Area (KRA)</th>
<th>Example KPI</th>
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The workshop concluded that stable frameworks lead to partnerships and trust (and this is where the government sector should take the lead). In terms of KPIs it was concluded that a simple and relevant KPI regime when implemented leads to informed design of contracts which leads to feedback / continues process (government sector). However, it is recommended that the set of KPIs need to be in the contract but levels need to be in schedule (government sector). Setting up appropriate structure to manage performance regime (government sector) is not just for compliance but also to assist operators.

This lead to a series of recommendations:

- Performance measures should be simple and practical but still informative
- Who has control over these KPIs? Policy, regulators expectations? Who bears the risks?
- We need to understand the relationships and obligations of parties / trust
- There should be minimum standards to address the backlog with respect to establishing performance measurement regimes, particularly in the context of creating a formal market which encourages public transport measurement and compliance
- There remain fundamental issues of data availability / integrity / relevance
- Further work is required to establish how much information can be released back in to the market

I acknowledge the contribution of John Nelson and Rico Merkert who co-chaired the workshop

Food for thought

**OP51: (January 2012)**

*A Community of “Experts” - The Citizen Panel*
Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

We now have a suggestion that a community of people drawn randomly from the population may be able to add value in helping public infrastructure organizations find ways through the maze of complexity in prioritising infrastructure that will make a difference.

As I engage in the debate on how we can improve the infrastructure we have, transport in particular, I come up against a major barrier about the definition of infrastructure which seems to focus on a restricted definition of major projects (indeed Infrastructure Australia’s current definition of major infrastructure projects is based on a $100m plus cost outlay). Anything below that at present is not considered, and hence State governments are ‘forced’ to come up with high cost ‘solutions’ if Infrastructure Australia is to assist.

Some ideas I have been promoting (at least for discussion) seem to have fallen on very deaf ears. These include ensuring that all bus lanes are truly uncontaminated by merging along their pathway with mixed traffic (killing off any gains in time saving and service reliability of buses), growing the number of buses massively in order to deliver real gains in public transport connectivity and frequency that is sufficiently substantial to be attractive to current car users (something I argue is unlikely to be the case with very expensive single corridor projects such as heavy rail projects in various capital cities).

Food for thought

OP50: (December 2011)

Before Governments Announces big Infrastructure Projects...

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

In recent months I have noticed the growing number of major transport infrastructure projects that have gone rather quiet on patronage forecasts. Curiosity got the better of me, and so I decided to do some simple calculations myself on the accessibility benefits of some of these announced major projects (including some that are already under construction). I chose to focus on the travel times (door to door) that are expected be on offer once these investments are in place. A reasonable assumption to make is that the travel time is a critical reason for choosing one form of transport over another form. If the door-to-door travel time is noticeably worse compared to other available forms of transport (especially existing public transport), then one might ask why we are investing
in such new transport infrastructure. While we all believe that greater investment in public transport is necessary and is a good idea, we might ponder whether we are getting value for money from some of the active investments across the nation.

My little experiment involved taking a number of key locations and times of day where trips might start and finish, and to calculate the travel times (access, waiting, main mode linehaul, egress) for alternative public transport modes. The obvious comparison is between a bus service and a rail service. Importantly we have assumed that an existing bus service will continue to be offered when a new rail project is up and running.

What I found to my astonishment was how many times the travel time door to door by an existing bus or rail (where it existed) service was quicker than any of the new public transport infrastructure projects, both in the peak and in the off-peak. Indeed, for one very large and expensive rail project, I could not find any situation where it was quicker to use the new service than the existing bus services (including services by bus on dedicated lanes).

Why then are we spending so much money of these very expensive projects if they do not increase accessibility and reduce congestion on the roads? Well, maybe some people will use them for other reasons, but history may well show that we have spent a lot of money for little gain.

Food for thought

**OP49: (November 2011)**

*Road Pricing – Think outside the square*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

Road pricing reform remains a challenging issue that politicians ‘appear’ to believe in but are most definitely not showing any active signs of doing anything about it other than encouraging a dialogue. The stumbling block is the dominant view that while we should reform all road user charges (i.e., registration and fuel excise), the focus in the media and many government documents does not seem to be able to focus away from a congestion charge (or the emotive laded congestion tax). Australia is not the only country suffering from this, and although we should still continue to find ways of reducing traffic congestion, the ‘solution’ may reside in a pricing solution that actually pays peak period commuters to travel outside of peak hours? How might this work?

A Dutch proposition that has recently been tested may hold the answer. They have cameras registering all road users for eight weeks, without telling the road users. They
then extract a list of road users that have been detected in the peak period at least three times a week, and send them an invitation letter. A payment is made according to their reference number of trips in the peak, so if they were initially driving three times a week in the peak and during the payment period only once a week, they get paid twice an amount (e.g., 3 to 5 Euros in trials). In one trial, it is an amount per avoidance of the peak, in another trial it is the number of reduced kilometres driven, as detected by the onboard GPS units. Results from initial analyses of six such trials show that about 50 percent of the travellers avoid the peak period when rewarded. Having a few thousand participants, this can make a clear difference in traffic conditions. For further details see http://roadpricing.blogspot.com/2011/10/opposite-of-congestion-pricing-and-it.html

Another possible way of looking at this that would be even better is to link to a so-called credit-based system, in which you can earn credits driving off peak and spend them on the peak. The reason for not doing this in the Netherlands is simply a legal issue. You can always reward people, but charging people has legal issues and needs to be set by law and the tax office, which takes a long time. So a reward system as described above can be set up from scratch within a few months, making it a very practical tool for temporarily alleviating congestion.

Would this appeal to State and Federal Governments in Australia? The advantage is that no one is priced off the roads which must surely gain political support, but some will be rewarded if the switch trips from peak to off-peak periods, which must surely be a huge benefit in terms of recovery of lost travel time (which is quoted as the cost of congestion). The downside is finding sufficient funds to pay for pay the time of day switching incentive payment. Earning credits through avoiding peak congestion charges and then funding this from the congestion charges imposed on those who travel during peak periods seems the ideal situation but it still entails a congestion charge. So on the reasonable assumption that politicians will baulk at this idea, the way forward may be to consider allocating some of the fuel excise to reward those who switch from the peak to off peak periods. GPS is critical since we must ensure that true switchers are rewarded and not those who already avoid the peaks.

Food for thought

**OP48: (October 2011)**

*Contract and Markets – mature or otherwise*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney
The 12th International Conference on Competition and Ownership of Land Passenger Transport (known as the Thredbo Series) has just concluded in Durban, South Africa. As Co-founder of the series, I am delighted with the success of the series and the impact that it has globally on the reform process in many countries, including Australia. Learning about the ongoing challenges facing reforms in South Africa helps to put in perspective the Australian challenges, which almost pale into significance. Put simply, countries with mature markets (like Australia) wrestle with the abundance of rich talent in the sector; in contrast South Africa typifies a situation best described as immature and evolving. Despite this circumstance, South Africa has a very large informal min-bus (or para transit) sector that offers a very high level of service in terms of frequency and connectivity, but it is accompanied by high levels of risk of exposure to accidents and corruption. Although the recapitalisation program is well advanced in replacing old minibuses (which South Africa calls taxis) with new 16 seater Toyota vans, greatly improving the quality and safety of the vehicles, there still remains the ‘cowboy’ mentality of many drivers who lack the commitment to obeying the rules of the road (including illegal overcrowding the their 16 seater vehicles which commonly carry 23 plus persons). The challenge in reforming this very large sector with high service levels is to remove the illegal practices and safety concerns while preserving such high levels of service. Many would argue that it will be a sad day if this is resolved by removing the sector entirely and replacing it with a very Western conventional timetabled bus service. For sure this will deliver a lower level of service even if it is fully compliant.

In both mature and evolving market settings there remains great interest in the design of bus contracts. With over 26 countries present at Thredbo 12, an intense high level debate identified the key risks to the success of a contract, given global experiences. The risks in order of relative importance are

- Unclear description of government objectives and outcomes
- Poor quality in tender/negotiation assessment
- Allocation of risks and responsibilities
- Ensuring financial viability
- Dispute management and resolution arrangements
- Specifying the services to be provided
- Understanding of the best technical content
- Changes over time in government/government policy
- Specifying (key) performance indicators
- Distortions introduced during contract negotiations
- Collecting and acting on performance indicators
- Complexity in the scope of services
- Building and maintaining a positive partnership
- Tendering /Negotiation process

What is particularly gratifying is the overall view from the conference that we must continue to ensure that the process of contract negotiation is open, clear and achieves buy-in from all sides; that it recognise contracts are at the tactical level, but need to be constructed within a clear strategic framework; that it ensures a clear alignment between
Strategic, Tactical and Operational (STO) aspects; and that we continue to learn from the past and others’ experience, and undertake self evaluation. Linked to achieving these outcomes is a performance management regime defined on a set of key performance indicators (KPIs) that must be in the contract but with benchmarked levels included in an accompanying schedule; and these KPIs must be part of an appropriate structure to manage performance regime by the regulator and not just for compliance, but also to assist operators. It was made clear that “Performance is not the same as compliance”. The 8 KPIs developed by Hensher-Arbuckle for NSW received complete support as a sensible and appropriate way ahead in order to track cost efficiency, network effectiveness and customer satisfaction in particular. It was also reinforced that social exclusion has to be explicit within public transport service contracts with operators.

Food for thought

**OP47: (September 2011)**

*The simple logic of getting people out of their cars and onto public transport*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

This opinion piece may well turn out to be the most ‘influential’ piece I have written since we started the monthly series in October 2007. The careful selection of words is quite a craft and one that begs indulgence to have maximum impact. During the Emerging Crises Summit on Cities, Population, Climate Change and Energy titled *Moving People Solutions for a Growing Australia* in Parliament House, Canberra (July 6 2011), I was on a panel gazetted for Road Pricing Reform. The Chair decided that Road Pricing is a long way off in terms of political agendas (despite all the lip service), and that we should focus our panel discussion on themes where we believe governments might be interested, and where they could make a difference in public transport reform.

I (and Bob Carr, former Premier of NSW) was asked to identify one very specific initiative that government’s could support (especially Federal Government) that could make a real difference to improving the performance of metropolitan transport systems.

My response, almost as if it had been brewing for many years, was to “flood the market with buses”. I connected this response to my earlier question (Opinion piece June 2011) – “How many buses could the NW rail project in Sydney buy?” Allowing for extra drivers, which has significant employment benefits), the current 4,000 buses operating in the Sydney metropolitan area, could be increased to at least 12,000, a three-fold increase in service capacity.
In anticipation of a loud yell of disapproval, I anticipated what the response would be. Specifically, people have told me that this would create a crisis on the roads with horrendous traffic congestion consequent on buses mixing with cars and trucks. My response is simple and accurate – if the real drivers of getting people out of their cars and into public transport are connectivity (the door-to-door element of travel, including integrated seamless multi-modal ticketing), frequency, regularity and visibility, which most would agree are the key factors, then a 300 percent increase in the service capacity of buses spread throughout the metropolitan area (or at least in areas where we believe public transport can make a difference), must surely result in some noticeable modal switching from the car, with a consequent positive impact on traffic congestion.

Given the substantial three-fold increase in service capacity, if this fails to make a dent on car use and hence traffic congestion, then what hope is there for any public transport initiative (be it new infrastructure and or new service levels) to contribute to reducing traffic congestion. Surely the failure of this initiative would send a signal about the disconnect between building the NWRail project (as one example of spending a lot of money on one narrowly focused project given the needs of entire metropolitan areas) and what it will do as a narrow corridor-specific initiative in impacting on traffic congestion (which I personally believe it will have very little impact).

I suspect that many politicians would agree with me, but so few if any would say so.

Food for thought

**OP46: (August 2011)**

*The number of people using train services in the peak suggests that BRT should (must) have a real future*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

One of the main arguments used to support rail investment over bus systems is the carrying capacity of trains per hour. We are told that bus rapid transit (BRT) could never provide the service capacity required to offer an alternative to heavy rail investment. What is the evidence? We look at the recent figures provided by CityRail in Sydney. (see [http://www.cityrail.info/about/our_performance/service_capacity.jsp](http://www.cityrail.info/about/our_performance/service_capacity.jsp))

The one hour morning peak to the city as measured at various stations for the nine metropolitan lines (excluding the Blue Mountains and the Central Coast) shows a maximum of 17,280 passengers on the Western line passing through Redfern Station (a station next to Central). The next highest patronage is 16,905 on the Illawarra line at Sydenham, followed by 16,680 on the North Shore line passing through St Leonards.
Station. The patronage drops off very fast, down to 11,735 per morning peak hour on the Airport and East Hill lines, with the remaining lines having patronage levels at surveyed locations between 9,615 and 3,810. The best in the afternoon peak from the city is 15,240 passengers counted at Redfern on the Western line.

With this factual evidence, let us note that many of the BRT systems (including Brisbane busway system) already have up to 10,000 passengers per hour (see graph below), which covers peak patronage levels for all but four of the nine lines in Sydney, with growing evidence that BRT can accommodate all patronage levels currently observed on the entire CityRail network.

The question that must be asked as we begin the new era of investment in public transport is “Can BRT have a real and substantial role to play in delivering the required public transport service capacity in metropolitan Australia as a value for money option?” The answer appears to be a very big YES. The interest in BRT is growing worldwide. Let us hope that Australia does not lag behind and forgo the accessibility and value for money opportunities on offer.
Food for thought

**OP45: (July 2011)**

*Tunnel Vision*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

A hot topic in Sydney is tunnels. Not tunnels, for cars but finding the many unused or improperly used tunnels under Sydney’s Central Business District. In a recent article I wrote of opportunities to ‘solve’ some of Sydney’s surface chaos in York Street where buses from the northern side of Sydney all converge after crossing the Harbour Bridge. In addition to buses that are actually in service, we have a number of buses ‘not in service’ due to the need to be repositioned under the contract arrangements in place. Indeed one strong message from the chaos is the restrictions that the current contract arrangements have in limiting the fuller use of the service capacity entering and leaving the CBD.

Why can we not put the bus station underground, with access soon after coming across the Bridge and just before entering the York Street precinct? Especially since we believe that there is a tunnel system in place that was designed for the railway in the Bradfield era but never used for that purpose, which recently has become a long car park. It makes very good sense, since we simply have run out of surface ideas to solve this problem.

The suggestion that we can rid of the buses by introducing light rail into the CBD is simply not tenable, unless light rail goes across the harbor bridge and extends well into suburbia. What people hate is a transfer, especially between two public transport modes,
and that will be required if light rail is built and used to remove many of the bus services in the CBD.

So let us encourage a consideration of a substantial underground bus terminal with efficient lifts to and from the surface in an environment in which the air is protected from emissions and which will enable the CBD to do some nice pedestrian and bike solutions on the surface. There appears to be a growing interest in this from some stakeholders and I encourage all stakeholders with influence to promote this idea.

Food for thought

OP44: (June 2011)

The Challenge for the Infrastructure NSW Chief

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

The NSW Government recently announced the appointment of Nick Greiner as the Chair of Infrastructure NSW. This is a critical appointment to direct the turnaround of NSW’s reputation in infrastructure provision, especially in the transport sector. The biggest challenge that will be faced in Sydney is how to move forward to deliver good transport coverage and service frequency in the face of a government commitment to announced major rail passenger projects. If one were able to start with a clean slate and be mindful of getting started sooner than later, and getting some real political mileage that is value adding to the electorate, there is no doubt that this is best achieved by a focus on upgrading the road network and using this opportunity to start assigning a substantial part of the road network as dedicated roads to buses (similar to what we are seeing with the Brisbane busway system) (with the possibility in off peak periods of giving access to taxis and hire cars), in contrast to painted bus lanes which appear and disappear throughout the network, forcing buses into mixed traffic just when they are getting a time benefit. Crucially, however, one must ensure that such a network lines up with meeting the growing accessibility needs of commuters in particular, where the test is in terms of door-to-door connectivity on high frequency, high service capacity (so one can sit) public transport. One will have to deliver some of this in tunnels (which buses can use) given the loss of transport corridors over the years. If the Chair is already constrained by two expensive rail projects (the NW and SW railways), then the network approach should still be proceeded with to ensure that these large projects do not hinder the needs to provide coverage and connectivity for all of Sydney where it can make a difference. Overlaying all of this physical network development must surely be a rethink about the low cost of using cars, which is the nemesis for public transport, and in many ways the efficient and fair pricing of the car use can be a significant part of the public transport solution. I recently calculated that if we were not the build the NW and SW
railways, we could purchase 28,500 new buses for the equivalent projected capital cost, increasing bus service capacity 7.5 times (and even allowing for the operating cost differences, this number could be as high as 4 times, still impressive). That would surely deliver massive accessibility benefits to all of Sydney! For the rest of NSW, the focus must be on completing the Pacific and Hume Highways as dual carriage throughout.

Food for thought

**OP43: (May 2011)**

*How many buses could a heavy rail project buy?*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

Have you ever thought about how many buses could be purchased for the same amount of money invested in a major metropolitan rail project? Let us reasonably assume that heavy rail projects being proposed in some major metropolitan areas will cost $5billion, which in my view is conservative (given the Hensher rough rule of thumb to double the costs and you are close to reality), and that a single bus unit costs on average $350,000. Simple arithmetic suggests we could have on our roads an extra 14,250 buses. There are currently slightly less than 4000 buses operating the Sydney metropolitan area, so this would increase the total fleet to 18,250, or 4.56 times. Now what if there were two heavy rail projects? Our estimate is that we could buy 28,500 extra buses, increasing service capacity by 7.125 times. This is a huge (or maybe humungous) increase in service capacity that can be spread throughout an entire network and deliver huge benefits in terms of accessibility and mobility (in addition to jobs), which is unlikely to be the case for the single corridor rail project (or two rail projects). Such simple comparisons are never done, but surely it sends a strong message about where the potential benefits of public transport growth might be. Would this make traffic congestion worse? Yes if it had no impact on car use, but with an extra 28,500 (or even 11,400) buses it is hard to believe that they would not have significant impact on reducing car use, since such buses can really focus of connectivity and frequency, both of which are central to achieving the objectives of patronage growth (which has desirable financial and environmental outcomes), and coverage which delivers equity and social inclusion outcomes. Indeed a recent study by John Stanley, David Hensher and colleagues has shown that the major single benefit estimated to flow from Melbourne’s route bus services is the social inclusion benefit, which is valued at $A784m annually, or 43.5% of total estimated benefits.

Food for thought

**OP42: (April 2011)**

*Is it a carbon price or a carbon tax?*
Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

There is so much confusion out in the real world about whether we will get a carbon tax or a price on carbon. It is time for a lesson in language and clarity.

Prime Minister Julia Gillard is reportedly determined to fight on with her carbon tax proposal, despite a new poll showing Labor's primary vote has hit rock-bottom. Labor's primary vote plunged to 30 per cent in the early March poll, with the Coalition leading 54 to 46 per cent in two-party terms, although labour rebounded back a week later.

There are clear sensitivities out there in the real world, which in many ways may be attributable to a lack of clarity in simple language as to what is planned, not helped by the repetitive reference to ‘another big tax’ by the Federal opposition.

In clarifying the language, let me begin with a distinction between a ‘tax’ and a ‘charge’ and then move onto a ‘price’. A ‘charge’ is a sum that is calculated to reflect the cost of resources consumed that need paying for by the beneficiaries of this consumption. It is often related to the idea of paying for a negative externality such as the creation of carbon dioxide (CO₂) as a direct or by-product of the acts of an individual, a household or a business. Government on behalf of society is trying to find a way to recognize this negative externality and ensure that those who create it pay for it. This payment should be referred to as a charge in order to internalize to the individual, a household or a business, the cost imposed on society. Once we have identified the appropriate level of the charge (which is a challenge in itself), then imposing it is equivalent to internalizing the negative externality and then it is no longer an externality, since it is now being paid for by the beneficiaries of the associated actions.

There are a number of ways in which we can establish the right level for this charge, and this is where the confusion abounds. As a prelude, however, we must now be clear what a tax is. We all know it is a sum of money the government takes from us; however it often includes two components – a sum to represent the cost of resources consumed (for petrol this is the opportunity cost of the oil resource), plus a sum that is on top of this amount that government is free to choose its level and which is nothing more than a means to raise revenue to be used as the government wishes, since it is unrelated to the cost of sectoral resources. Government typically imposes it on activities where the market is far less price sensitive (e.g., cigarettes and alcohol and fuel), since we typically are addicted to the consumption of these items, and have in many situations little choice (which includes using the car).

So now we should understand that there exists a price that government adds onto the cost of consumption (and production) that can be a mixture of a charge and a tax. The biggest challenge is how to determine this price in terms of some reasonable objectives such as economic efficiency and fairness, given in the case of CO₂ the desire to clean up the environment. If it all works out well, we would expect the price to be an incentive to look
The two ways proposed to identify this price is through a carbon tax or establishing a carbon price. Government, where it supports such price determination, prefers a carbon price that is established through some market mechanism, which is often referred to as an emission trading scheme (ETS). Trading takes place in a market for carbon (credit and debits), often with a cap on the amounts (hence cap and trade), which should, if markets are efficient (of close to efficient), deliver a market price for a unit of carbon. This is then the carbon price, and there is no need for a direct tax on carbon. The problem with this approach is that we need efficient markets, or dare I say a market of any level of efficiency, to get started. They do exist in parts of the world (notably Europe and California); however it is unclear how Australia might enter that market. The ‘debate’ and ‘noise’ in Federal Parliament is very much connected to what this ‘right’ price might be (no one knows, and certainly politicians have no right to announce such a price). As a consequence (or for other reasons that elude me), the politicians have started talking about a carbon tax (often mixing the language with a carbon price), since then someone can simply announce the level of tax ($/kg of carbon). Now we are talking about a tax (which may have a charge component). Curiously, a carbon tax is highly correlated with the cost of fuel in car and heavy vehicle uses (being the product of fuel price, fuel efficiency (litres per 100km) and kilometers travelled). Research I have undertaken using our TRESIS software developed at my Institute suggests we may as well simply and quietly hike up fuel excise, and this will have almost the same effect; avoiding the emotion attached to a carbon tax. I doubt governments have fallen over a higher fuel excise, but they may just fall over a carbon tax.

So what we appear to have now is a carbon tax at a level not yet announced (as of March 24 when this thought piece was written), which we are told is a transition to a carbon price under an ETS. Exactly how we can transition is a bit of a mystery, since the carbon tax will never create a market for carbon, although it should signal responses from the market to make changes in services and technology to reduce CO₂ and hence the impost of the carbon tax. I am however reminded that a switch to clean fuels (those with no carbon content) which is what government wants to encourage through a tax or a price on carbon, could in the long run erode the revenue base of government, who I predict will introduce another tax on these alternative fuels as a way of stabilising revenue. Time will tell, but for now readers might benefit by the clarification of language.

Food for thought

**OP41: (March 2011)**

*The continuing saga on road pricing – can we convince the politicians?*
Roads are possibly the most underpriced in terms of user contributions of all the public assets that we avail ourselves of. Regardless of whether some believe that governments should provide more road capacity to combat traffic congestion, it is an undeniable fact that if we provide more capacity under the existing road user pricing regimes (registration and fuel pricing only), then more cars will use the roads, quickly using up the additional capacity. The great sadness about all of this is that there is a presumption that we all have rights to enter the traffic and delay all other motorists, yet not contribute to the true cost associated with delay and lost time – the curse of congestion. It is estimated that over $9 billion a year is wasted in lost travel time or avoidable congestion costs, increasing to around $20 billion by 2020. This results in a predictable ‘tragedy of the commons’.

Many motorists argue that they pay enough anyway. But do they? There is enough evidence to suggest that they do not, for if they were being charged to use the roads at a level that is efficient then we would avoid much traffic congestion. Many politicians still believe (as a result of their actions) that roads should be free (toll roads being the exception); however “free” roads are not really free – the choice is between paying with time and frustration, or with money. Feel free to oppose it, but do not complain about the traffic. Opposing efficient pricing means you are choosing to endure continual congestion problems.

What we need to do in sorting out the pricing challenge is not to add a congestion charge on top of existing charges, but to undertake a complete overhaul of the entire charging regime, with options to replace some of the fixed charges (e.g., annual registration) with a usage charge based on kilometres driven by location (and vehicle emissions), so that those who obtain the greatest benefits (such as time savings) should contribute proportionally. This then would be a fair system in contrast to the current system of registration and fuel taxes, which is far from fair. Pundits who claim a congestion charge is not fair should carefully think about how fair the existing system is? Why should we all pay the same registration fee for a class of vehicle when we all travel different annual kilometres on the roads, at locations where congestion varies from nothing to significant?

The future of public transport must surely be linked to this tragedy of the commons if one believes in the adage that ‘to make public transport more attractive we have to make the car less attractive’.

Food for thought

**OP40: (February 2011)**

*The Economy Wide Benefits of Public Transport Infrastructure Investment – Time to look outside the Transport Box*
Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), The Business School, The University of Sydney

The transport sector faces many challenges, given its critical role in the provision of mobility services. In recent years a number of researchers have argued that there are an increasing number of benefits associated with public transport projects that go beyond the identification of benefits to public transport users and the transport sector in general. These benefits have become known as the wider economy benefits (WEBs) and define a new set of benefits attributable to some market responses that follow public transport infrastructure investments. The inclusion of these wider economic benefits in appraisal of transport projects will help to ensure that we do not miss key investment opportunities for enhancing productivity. It is therefore important that we incorporate the best information we have to include wider economic benefits in transport appraisal. The key WEBs are: (i) Agglomeration – bringing activities closer together is time and space, partly linked to the redistribution of employment opportunities and gains in productivity in the provision of goods and services from spatial concentration, (ii) Increased output in imperfectly competitive markets, and (iii) Labour market impacts – labour supply and the move to more productive jobs.

Firms and workers deciding where to work and live trade off various benefits and costs (wages, rents, congestion etc.). Their final location decision will be a contributing factor to the overall city size. When each firm or worker takes a location decision they consider the benefit to themselves such as the impact on profit or wage but (in most cases) do not consider the impact of their decisions on the productivity of others. A firm or worker’s location decision may generate agglomeration economies, which benefit not only the individual firm but also other firms and workers located in the cluster. There is therefore an ‘externality’ in addition to the private benefit.

The rearranging of activities in time and space also delivers improvements in levels of air pollution and emissions in general. Why might the transport sector care about this? There are obvious reasons, one most important one being that if we can identify a larger number of benefits associated with investment in public transport, then the transport portfolio of government can present a stronger case to Treasuries (State and Federal) of the value of public transport projects. While there are claims that such additional economy wide benefits can be as high as 60 percent on top of the traditional transport-sector modelled benefits (mainly gains in travel time), benefits associated with agglomeration look like delivering up to an additional 10-20 percent of benefits, an amount not to be ignored.

The identification and inclusion of these WEBs means that we can provide additional information to help inform prioritization of schemes for funding allocation. With higher returns to public transport projects, we could release more public funds for investment, as well as identify the impacts on gross domestic product (GDP) which always interests governments, and can help to support call for private participation in infrastructure investment.
Some simple but powerful statements to remind us what should drive public transport investment and fair payment for road use

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

Language and words are powerful ways of communicating simple but important points of view. If we could agree on the meaning of sentences then we will be making great progress in communicating the points of relevance in contrast to the points of misleading commentary. Let me illustrate this. In the debate between light rail (LRT) and bus rapid transit (BRT), supporters of LRT are often heard to say that LRT can carry far more people than BRT per hour, and when we drill down to get clarity they really mean that LRT can carry more people per carriage (or carriage set) than a bus or BRT. When it is pointed out that trunk capacity per vehicle is not the issue but service capacity per hour, and that much more bus service capacity can be delivered per hour than LRT service capacity (in addition to flexibility in service in connecting with feeders), there is a glazing over of the LRT eyes. Simple point – talk service capacity per unit of time, not vehicle capacity.

Another example, laden with emotion, is the reference to road pricing and especially the variant correctly called congestion charging. Immediately this is mentioned, the uninformed respondent refers to a congestion tax and assumes it is added onto all existing taxes. There is little hope to sell the merits of reformed road pricing when the word ‘tax’ hits page one of the media every time we try and have a sensible debate on the need to change the current charging scheme (namely fixed registration charges and fuel excise). A careful listening to what we are trying to say to educate the population is that we need to do something to contain traffic congestion, and that we have a real opportunity to review existing charging mechanisms and to align charging closer to the costs that users impose on the network through using their cars and trucks and buses (in contrast to owning their cars and trucks and buses), and that we should be able to design a pricing mechanism that is much fairer, but includes a way of charging for congestion that is contributed to by users of the road network. This would involve dropping some charges as we add in some new congestion-related charges and importantly show how the revenue raised is put back to useful causes that are supported by society. It is possible (yes – believe me) to design a system in which many users of the roads are financially better off with a congestion charge and even an emissions-related charge, where the cost of using the roads is lower when congestion is absent and vehicles are environmentally cleaner. Who would disagree with this? After all time is money although you would wonder sometimes when people complain about delays but will not support possible
ways of aiding improved travel times. Few indeed I suspect; however until we can get away from the clutter of emotional misleading language like ‘being slugged with a congestion tax’, what hope is there. The media in particular needs to be more responsible.

Food for thought

OP38: (December 2010)

*Expertise in Government and Industry – the Major Challenge facing the Sector*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

Over the last year or so, it has been mentioned repeatedly to me that the biggest constraint the bus sector faces is the lack of expertise in the government sector in particular, but also a recognition that the industry of bus operators has not escaped this dilemma either. The expertise that has been highlighted relates to performance management, contracting processes and the strategic understanding of planning and monitoring bus transport as a system serving a network. Why has this occurred? There is a real problem in attracting new blood to an industry that undersells itself – there is no great sparkle when the community sees the industry as nothing more than a career in driving a bus, maintaining a bus, designing timetables and a bureaucratic career in managing bus contracts. It may come as a surprise to many in this industry that until new graduates actually work in the sector, they have no idea that there are challenging jobs in planning, strategic development, finance, marketing and dare we say strategic thinking. It seems to be, observing from a distance, that there are too many people in the industry who lack a strategic focus and/or vision, are more concerned about the day to day operational issues and less concerned about the long term implications of such micro-detailing of issues that may appear important and urgent at the time, yet end up being non urgent and not important. I am sure all readers can relate to this. Compliance management has taken over from strategic commitment to worthwhile change. The level of detail in the growing array of documents that are produced in establishing formal relationships between the regulator and the operator might best be described as governance breakdown or institutional malfunctioning. Why do we need all this paperwork and detail when the requirements of service delivery are so much more simple? Can someone please answer this question. It seems to me that it is worthwhile revisiting what I might describe as essential rules to ensure compliance, in contrast to the numerous rules that have been added over the years to numerous regulatory and implementation documents to ‘protect’ the transparency of a flawed process. My biggest concern is that despite all of this detail and unnecessary complexity (which produces nothing short of ambiguity and lack of clarity), we still remain somewhat data poor in understanding this great industry. My wish is that we start to recognize even more than we have to date, that there is so much wasted effort in competing bodies compiling data
on the sector that is often in conflict in regards to the evidence. Can we one day sort this out.

Food for thought

**OP37: (November 2010)**

*The continuing saga on corridors and networks and big project announcements*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

Almost daily we see media reports of State governments commenting on their transport priorities. While the political process is complicated and one respects the obligations of politicians to their constituents, it remains a great puzzle (dare I say frustration) that the focus is primarily on promoting a few big projects in a corridor in our metropolitan areas. If money was plentiful, then one might argue that we can go along with this (despite it not necessarily being the best spend in terms of value for money). Why is it that the message that the focus must be on the entire network and not on specific corridors simply is not getting through in at least two States of Australia? I guess the answer lies in votes that might be easier to capture with a couple of big ticket highly visible projects? Well, fair enough for those who might benefit from them (putting asides the date in the future when they may be operational); but what about the rest of the system that needs good accessibility (broadly defined by connectivity and frequency). At the end of the day the real test of value for money is system-wide – how are people benefiting in travelling from their origin (O) (where the trip starts – not a railway station or bus stop) to their destination (D) (where the trip finishes, not a railway station or bus stop)? It seems from my reading and listening, that opportunities to give all an attractive level of public transport service (in terms of OD connectivity and frequency) is simply not on the political agendas, except in fine words and aspirations – it certainly is not reflected in investment announcements (potential or actual). I look forward to the day when the political machine announces that we will be funding and investing in a fully integrated bus (on its own right of way – tunnelled or above ground) and rail network based on the OD needs of the public that is not defined by one or two very expensive (and likely to be poor value for money) projects in corridors. Think networks and systems please. It is no wonder that the car will reign supreme for the long future – even getting revised car use pricing on the agenda seems to be talked about but ignored as a sensible way forward to tame the car and fund public transport investment.

Food for thought
What did we learn from the Olympics 10 years on?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

I recently participated in the Tourism and Transport Forum’s ‘Sydney 10 years since the Olympics’ and was asked to discuss a number of themes. I am sure you can all look back with Nostalgia, and recall the following: "As MY bus cruised into the city this week in record time, I found myself wishing the Olympics would go on forever. Commuting has never been so pleasant: nor the city so delightful a destination, full of people, but mercifully emptied of cars" (Adel Horin, Sydney Morning Herald, Saturday 23 September, page 5). The Olympics experience delivered a most powerful lesson - the willingness, under special circumstances, of individuals to use public transport and leave their cars at home. But we were only Good Citizens for a Short While. We learnt however that individuals’ appeared to be willing to wait on average 20 minutes (and up to 45 minutes) for a bus or train to go to/from the Olympics, an event that one has allowed plenty of time to get to or from. But are we willing to wait so long to get to and from work? It appears that we have the capacity but not the will to make a long term switch to public transport. The demonstration of the viability of 'capacity' was a good result but it was not sufficient. Short-term coping strategies did not translate into long-term behavioural change without the ongoing incentives that were in place during the Games. These incentives are very difficult, if not impossible, to maintain under normal conditions. A very important finding, however, was that Sydney can cope with a major move away from the car, and that the service capacity on public transport can be harnessed as a contingency plan to cater for any adverse implications of automobility. This was a test we might only ever have dreamed of as a real demonstration project of how much public transport capacity is required to move so many people. On this evidence alone we can rest secure with the knowledge that the traffic system will never grind to a halt.

Now for the questions I was asked to address. First question - what would be your priorities in Sydney to relieve congestion and get the city moving? The answer included pricing of car use reform (which is politically problematic) and wise use of revenue. On non-pricing initiatives, the focus should be on coverage and frequency; instead what we are seeing in a number of our capital cities is too much focus on 1 or 2 rail projects, although pleasing to see growth in purchase of buses, but they still have to compete with the car in mixed traffic and piecemeal bus lanes. The bus has greater role in delivering coverage and frequency, which we can learn this from Brisbane, aided by integrated ticketting; and it does also encourage development along its spine despite what the skeptics say who argue only rail can achieve this because of its permanence. Well, the Bondi Tram came and went! Our biggest challenge however is getting the corridors back that previous governments sold off. However tunnelling will always remain an option and be necessary for both train and bus (and yes buses can go in tunnels). Something to contemplate – we can build a bus rapid transit system (BRT) that is essentially a train
service - looks like it, smells like it, acts like it – but can be delivered for a substantially lower cost per km – typically at least 10 time less and hence we can service more of Sydney for the given scarce dollar. Sadly Sydney planners (with rare exception), bureaucrats and politicians simply do not get it, and are so rail centric. I encourage them to visit Brisbane, Pittsburgh, Curitiba, Bogota, etc. and many more places in China where BRT has taken off in situations where passenger capacity required is around 10,000 passengers per hour - most of Sydney’s rail network is below this.

Second Question - Transport service delivery in Sydney peaked during the Olympics. What needs to happen to recapture that form? We need Governance reform in particular (institutional barriers are the main cause of many of our problems). We have projects confused with plans (Sydney is not a corridor or even a few corridors but a network); and there is a lack of sustained commitment to a long term plan. It is time to stop thinking CBD and radial centric transport, and to build on Sydney’s multi-centre character (Cities of Cities), to turn this centre heterogeneity to a major international strength, which will not only strengthen Sydney’s high liveability, but will reduce the need to travel as well as to assist travel by low impact means. Land use and transport planning should prioritise this focus, through improving local access to and within centres (increase local PT). We must continue to improve connections between centres (not just the CBD), with a critical focus on corridors as a network.

Third Question - What infrastructure can be credited to the Olympics? None really with possible exception of Homebush rail extension. But that is not all bad – we did learn from previous Olympics not to over-invest. However, maybe we should have, but on projects such as a NW Rail (or BRT link) which are not Olympic connected projects but ones that may have happened in the hype of an Olympics.

Fourth Question - Where to now? The two key challenges today are corridor preservation, and we have done an appalling job in this area, and finding the money to finance the investments in the Network. The themes for a sustainable transport future in Sydney should be (i) commitment to networks and systems compared to projects and corridors, in order to deliver metropolitan-wide connectivity, frequency and visibility of public transport, (ii) identifying feasible funding sources, especially reminding all about User Pays, and (iii) getting back our corridors.

Food for thought

**OP35: (September 2010)**

*Don’t tell me High Speed Rail is back on the Agenda! Who can we trust to deliver more than a feasibility study Call me a cynic but I was there 15 years ago and seen it all before.*
It is nearly 15 years since I was involved in efforts to get a high speed rail initiative off the ground between Sydney and Canberra (known as Speed Rail) after the much criticized Very Fast Train (VFT) plan between Sydney, Canberra and Melbourne. After four feasibility studies with various partners, and millions of dollars spent by the private sector on studies, the request for a public-private partnership (PPP) fell on the deaf ears of the then Minister of Transport John Anderson, who was more interested in a freight rail line. Indeed even before John Anderson, Bob Hawke had asked his close friend Sir Peter Abeles, who was heading TNT and a joint venture partner in the VFT, to ‘kill it off’. I was there and have the inside know. So it seems all political parties were against the idea of a high speed passenger system.

As I recall, the request for government contributions was little more than $2billion dollars for the initial 300 kilometres between Sydney and Canberra. Back then this project was one best described in financial parlance as marginal – neither a dud nor a guaranteed success but worthy of taking a risk on, in my opinion. Its future all depended on the patronage levels on a service that was to be code shared with Qantas on the Syd-Can route. No more fog bound flights or delays at Sydney airport due to air traffic congestion. No more arriving 40 mins before the flight and having to wait while they took 30 mins to load, taxi and take off. Instead one arrived at the railway station, where parking was provided if one travelled by car, was able to board immediately if one had booked in advance or wait a few minutes to get a ticket (today it will all be online). A high quality experience awaited passengers like the Eurotrain or Shinkansen services, with the ability to use mobile phones, internet etc as well as have decent food delivered to your seat unless you wished to go to the restaurant. Services would be frequent (every 15 mins in peak), with door to door times being very attractive and competing well with the plane. The fast train fares would have been 50% off of equivalent air fare class. The only downside was competition with the car, especially where one has more than the driver in the car (as a family trip). I did the patronage forecasts and we never believed that families would switch, but business travellers and many single occupant car trips would switch.

The Labor government at election time 2010 has reignited the interest, yet how serious is this, especially the proposal to undertake a feasibility study for the Sydney-Newcastle market, a market with very little business travel but plenty of commuters and families, where we have a very good road system (admittedly in need of some improvements) connecting the two cities? The private sector is very nervous after getting its hands burnt big time 15 years ago. One company lost $20million in feasibility expenses.

I am supportive of re-opening the whole debate, but one wonders if we should first look at the most exhaustive and thorough studies undertaken 15 years ago (over an 8 year period) and ask ourselves whether we already know the answer. It seems to me we do. The real issue is not yet another study but some sense of commitment from government who I dare say will delay any decision for many years despite the vote catching appeal of...
yet another feasibility study. As one often hears, a feasibility study at election time is often a convenient way of catching votes without committing to doing anything at all.

Food for thought

**OP34: (August 2010)**

*The one thing we know about forecasts is that they are wrong: but by how much?*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

I have just returned from New Zealand where I gave three addresses on various aspects of transport reform. Over the total of 5 hours of talks it occurred to me that we have not progressed very far in improving our ability to forecast patronage and project costs of new major transport investments. Don Pickrell in 1992 blew the lid off of the USA Federal Government subsidy program associated with capital intensive projects since the program did not require state and local governments to be accountable for their forecasts and hence preference by States was given to such projects over other projects. The big errors occurred in ridership forecasts and capital cost estimates.

In the mid 1970, Dan McFadden (who received the Nobel prize for economics in 2000) demonstrated that a major reason for forecast errors in ridership of public transport is in the nature of the transport models used to study demand for travel (by mode, destination and frequency). Essentially, the models that contribute to significant errors back in the 1970s, known as four stage models, typically using highly aggregate data (at a traffic zone level – as is the zone travels?) such that much of the explanatory power (or variability in travel behaviour response) is assumed away through working with average people and average behaviour. Essentially, the models that contribute to significant errors back in the 1970s, known as four stage models, typically using data describing the travel activity of the average traveller living in a defined physical area (like a postcode or a traffic zone) in terms of the average income, household size, age, and average trip time etc at a traffic zone level as if the physical zone travels?; such that much of the explanatory power of the forecasting models in explaining travel demand is assumed away by working with average people and average behaviour.

Disappointingly all the consultants in Australia (with very rare exception) still use essentially the same methods as developed and applied in the 1960’s. Back then, McFadden and his team at Berkeley California showed the limitations of such transport models. So here we are in 2010, observing what has almost become a “law” of errors – if you want to get your forecast closer to reality, then halve public transport patronage forecasts and double capital costs. This also applies to toll roads.
Given we have known this for many years, why is the practice still blind to the evidence? Some have suggested it is because the numbers on ridership look on the low side to get Treasury support and indeed to enable an ultimate healthy benefit-cost ratio when subject to an environmental impact statement assessment. Others have suggested that if we ever want to get public transport built then we must “exaggerate” the evidence since no one really knows the truth anyway? This is known as strategic misrepresentation (which colloquially is known as lying). Well what to do given those in the know are fully aware of this.

Maybe we are safer simply buying more buses because no one apparently asks the question – how many more bums of seats will this deliver? Have you ever seen a benefit-cost analysis or a patronage estimate associated with any request or announcement to increase the number of buses by 1 or 100 or 300?

Food for thought

**OP33: (July 2010)**

*Pricing must be a priority, so must keep mentioning it*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

The Henry Review tells us that we must rethink the charging regime for cars and trucks. The two specific recommendation (6) is that “Governments should analyse the potential network-wide benefits and costs of introducing variable congestion pricing on existing tolled roads (or lanes), and consider extending existing technology across heavily congested parts of the road network. Beyond that, new technologies may further enable wider application of road pricing if proven cost-effective. In general, congestion charges should apply to all registered vehicles using congested roads. The use of revenues should be transparent to the community and subject to further institutional reform.”

This must be of interest to the bus sector since the adage ‘to make public transport more attractive we must make the car less attractive’ still holds. Anyone who thinks you can build a solution through an injection of investment in public transport alone is foolhardy since it will do little to ease congestion on our transport networks. You have to manage congestion and not assume you can build your way out of it. What we need is an integrated program of carrots and sticks, linked to network operating plans, HOT/HOV lanes, improved public transport to attract car users, better land use/transport integration, and crucially, pricing reform, as recommended in the Moving People documents produced by BIC and UITP.

I remain fearful that governments of all persuasions in Australia will continue to ignore the crucial role of pricing of car use as a non-blunt instrument (one of the few such transport instruments we have). This issue is squarely in the space of politicians and
marketing – the economic and technical issues of efficient charging of car use are more or less solved.

We can be thankful that The Netherlands is doing something about it with a congestion charging scheme that varies the price by location and time of day. We watch and hope it works and we can learn and follow. NXP Semiconductors and IBM have announced the final results of a landmark road pricing trial conducted in the Netherlands, which demonstrated that with the help of technology, drivers can be motivated to change their driving behaviour, reducing traffic congestion and contributing to a greener environment. Key findings of the trial included (i) 70 per cent of drivers improved their driving behaviour by avoiding rush-hour traffic and using highways instead of local roads; (ii) On average, these drivers in the trial saw an improvement of more than 16 per cent in average cost per kilometer; (iii) it showed that a clear system of incentives is critical to changing driving behaviour; and (iv) instant feedback provided via an On-Board Unit display on the price of the road chosen and total charges for the trip are essential to maximising the change in behaviour.

What we have to do is continue to build the case with examples that show the buy in from stakeholders. This is referred to as stakeholder acceptability and is tied up with how the revenue raised is spent. Road pricing can raise significant revenue. The distribution of this money is an important consideration in a road pricing program development, and one which transport professionals, who traditionally struggle to obtain rather than disperse money, may be unprepared to evaluate. Using revenues to fund transportation improvements and broad economic benefits to residents through reduced taxes, rebates or community programs may provide the greatest overall benefit and earn the widest political support. Persons who are much more aware about a definite introduction of road pricing generally develop a more positive attitude towards road pricing than less convinced persons, i.e., the strength of conviction about the introduction of road pricing has a strong effect on the attitudinal evaluation of road pricing. Thus it is clear that we must keep the debate alive in the popular press as well as in the professional outlets – as they say, the more we talk about it the easier it will be to make it happen.
Food for thought

OP32: (June 2010)

What if money did not matter?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

I have just returned from Abu Dhabi (AD) as part of a series of meetings with the AD Department of Transport, to develop graduate education training back to Australia for the new generation of planning and policy nationals. What is amazing is the amount of investment in infrastructure, all to be completed by 2030 under the Master Plan, which will involve buses, LRT, heavy rail and metro systems. The Abu Dhabi planners have set themselves the challenge to move the 97 percent modal split in favour of the car to 40 percent in 2030, a challenge I believe will be impossible to achieve. The only bus I saw was a tour bus (see photo) apart from mini vans moving the thousands of ex pat workers shipped in to assist the building frenzy (including knocking down and rebuilding buildings when they reach 10 years – easier than retrofit!). The SUV is still supreme, with no taxes and fuel at 45 cents per litre. I gave a lecture on sustainable transport and value for money – in an environment in which money is no object and everything is
owned by the Royal family (ies). The mere mention of the need for efficient pricing is such an alien notion when money flows as fast as oil comes up from below the ground. Abu Dhabi has the largest carbon footprint per capita anywhere in the world, and the response in part has been to develop Masdaq City – a zero carbon new city about 26 square kilometers in which cars are banned and the main transport mode is personal rapid transit (PRT), with car parks around the periphery (see the circular car parks in the picture). What can we learn from the Abu Dhabi approach? The most interesting lesson is to build excess capacity well out beyond the needs of the planning period which we westerners tend to define as less that 20 years and hence get exacerbated when we fail to allow for growth opportunities. However a warning has to be made – Abu Dhabi really believes in the power of planning and does not recognize that the market will ultimately dictate the outcome – so whether they can get people out of their SUV’s is a big question – providing air conditioned bus stops has been mooted as a solution, but one wonders.

Food for thought

**OP31: (April 2010)**

*Is there a simplified generic payment formula for bus contracts?*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

The ongoing commitment to contracting the delivery of bus services through competitive tendering or negotiated performance-based contracts has been accompanied by as many contract payments schemes as there are contracts. With the accumulation of experiences throughout the world, are we in a position to identify a few key features of the diverse suite of payment formulae to establish a simplified and generic payment formula that can capture the great majority of ‘desirable’ characteristics from a social and a commercial perspective?

Talking with many operators and some regulators throughout Australia, there is support for a simplified payment formula; however what this might be is the big question, and the big challenge. What all agree with is the desire to reduce the number of variations that are inextricably tied in with voluminous documents penned by lawyers on what the deal is and is not. The administration and transactions costs are unnecessarily high for all parties. One operator has said to me that an average cost per kilometre is all we need, that sensibly allows for differences across operators that are either not under the control of the operator (e.g., traffic congestion), as well as local environmental restrictions.

Candidate options can be classified as: (i) A pure cost-based model associated with cost per kilometre and no incentives, (ii) A hybrid model based on patronage allocation and
residual cost per kilometre without incentives, (iii) a pure cost-based model with incentives, and (iv) a hybrid model with incentives.

A pure cost-based model associated with cost per kilometre is typically a conversion of a total cost, and is determined by operating conditions and efficiency of scheduling. It is often calculated as a function of some key cost sources – operating conditions such as average peak speed, spread of service hours over each weekday and weekend, and vehicle utilisation, dead running time, fleet financing (although this should be of relevance only under economic deregulation since the contract under competitive regulation should have agreed terms of depreciation, risk and economic life of assets), and scheduling efficiency issues such as layovers between trips, which are often influenced by the degree of union influence in scheduling, but it is likely to affect vehicle scheduling as well.

Patronage and service kilometre incentive payments also exist in a growing number of contracts, and are based on a range of approaches. In simple terms, the patronage incentive payment should be linked to growth in patronage above an agreed benchmark; and service kilometres must be related to some gain in patronage otherwise it is an inefficient cost driver.

One very appealing proposition is as follows:

1. The Authority would define the budget for the services, set minimum standards and a growth target. The minimum standards would be based on passengers per kilometre. Bidders or negotiators would have data on the current services and patronage. If it is a negotiated context then the incumbent is the same as the negotiating operator; if it is a competitive bid then that is not the case).

2. The offers would be in the form of required compensation per passenger. This amount would be indexed for both monetary changes (standard indices) and operating speed (based on average timetabled speed), spread of service hours and bus utilisation, given that these latter three context-specific influences not under the control of the operator are key drivers of the differences in gross cost per service kilometre.

I welcome suggestions from operators and regulators who must be asking similar questions, and hopefully have some clues as to what the answer(s) might be.

Food for thought

**OP30: (March 2010)**

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2 Similar to the cost allocation formula used to use for costing contracts in Britain before competitive tendering, which allocated costs according to three variables - bus km, bus hours and peak vehicle requirement.
The most powerful instrument we have for decision making – people’s opinions

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

For some time I have felt a need in Australia to have a regular survey of the opinions of residents of Australia in regards to transport. We have ongoing surveys of consumer sentiment (e.g., the Westpac survey), but no record of how society views developments or the lack thereof in the provision of transport infrastructure and services. ITLS decided to do something about this and in 2009 we developed a methodology, joined in partnership with Interfleet Technology and launched the quarterly survey on March 23rd. In time we can build an informative and influential profile of opinions every 3 months from a sample of residents throughout the country on transport matters that they have views on.

Transport Opinion Survey interviews are conducted by Taverner Research by telephone using trained interviewers. Telephone numbers and the household response are selected at random. The quarterly survey is based on 1,000 adults aged 18 years and over, across Australia. This survey was conducted over 13-28 February 2010. The data reflect Australia’s population distribution.

What did we find in the first quarter 2010?

• Over half of Australians (58%) say the highest priority issue for transport in Australia is public transport improvements, more than twice as many as road improvements (23%).
• Less than one in five Australians (19%) think transport in their local area has improved in the last year, with NSW residents the least positive.
• Only one in five Australians (20%) think transport in their local area will be better in one year’s time, with about half thinking it will be the same as now. Victorian residents are most confident transport in their local area will be better in one year’s time.
• A quarter of Australians (25%) think transport in Australia will be better in one year’s time than now, while slightly more (27%) think it will be worse. NSW residents are the least confident of any state, while South Australian residents are clearly the most confident about transport improving.
• Australians are more confident that transport in Australia will be better in 5 years than in 1 year, with almost half (46%) thinking transport in Australia will be better in 5 years. NSW residents are the least confident of any state.
• 53% of Australians think their state government is most responsible for transport with West Australian residents most likely to nominate their state government as responsible (60%), and South Australian residents least likely (43%). 27% of Australians nominate both the state and Australian federal governments and only 14% nominate the Australian federal government.
44% of Australians think the private sector should be more involved in the provision of public transport, while 29% think the private sector should be involved less. NSW residents were noticeably more positive than Victorian residents on private sector involvement in public transport.

Since the readers are public transport people you will be interested in the following graph.

**What do you think is the highest priority issue for transport in Australia now?**

![Graph showing public transport improvements as the highest priority with 58%, road improvements at 23%, and other issues ranging from 0% to 1%]

Note: Responses were grouped into the above categories. Responses sum to 100%.

Stay tuned to quarterly updates.

Can Food for thought

**OP29: (February 2010)**

*Plans, Plans and Action! Or is it a Promise?*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), Faculty of Economics and Business, The University of Sydney

February 2010 has been a month of new plans to ‘sort out’ Sydney’s ailing transport system. First we had the Sydney Morning Herald (SMH) Transport Blueprint with an almost total emphasis on public transport (some have said it should have been a transport and land use plan and not a public transport plan!). Then we had the NSW Government’s Metropolitan Transport Plan (previously announced as a Blueprint but downscaled). In many ways the SMH blueprint has outshone the government’s plan (the latter printing 50 shiny copies which is also available online at [http://www.nsw.gov.au/shapeyourstate](http://www.nsw.gov.au/shapeyourstate)).
Now that the dust has settled, what might we observe about the two plans? First we have to recognize that much of what is offered will not even be started until well after the government’s current term in office. However this is not unusual since major infrastructure takes time to put in place. However, given that what we now have is at least the 5th plan with little action (in line with the plan) over the last 10 years, and that many of the proposed projects have been lightly appraised in respect of impact on key objectives, such as reducing congestion, improving accessibility and delivering value for money, it is not unreasonable to ask about the chances of specific projects ever happening?

The most dramatic feature of the government’s plan is the scrapping of the Metro and the almost total focus on CBD centric transport investment. This may prove to be a mistake given that it was meant to go out West to Westmead and was more than a CBD metro, and most importantly was designed to create competition and to break the stranglehold on Cityrail and union power in the delivery of rail services which have been anything but efficient and effective. So this is a win for Cityrail, the union and wasteful spending. What we now have is a promise for line duplication to the west and the north.

The $50.2bn metropolitan transport plan pledges $6.7bn for a new train service to outer northwest Sydney (the Hills district), with work to commence in 2017. But while the blueprint promises "quadruplication" of the rail line between Chatswood and St Leonards on Sydney's north shore, it makes no commitment to extra capacity on the harbour crossing. Two new rail tunnels will be needed under the harbour, at an estimated cost of $3-4bn. I commented in the Australian recently that "If a quadrupling of the line is needed because there's evidence to suggest demand will require it and it will remove a bottleneck, there's going to have to be recognition of getting across the Harbour Bridge." and “likely public opposition to any proposal to add an extra deck to the bridge would leave the government with no option apart from tunnelling.""What we've got here is very high-level commitments to projects that were once on the books and were taken off, but are now back on for political reasons." A weakness of the transport blueprint was its assumption future rail users would want to take trips in and out of the city rather than making "circumferential" journeys. "Why are we quadrupling the line there in the first place?" A spokesman for NSW Transport Minister David Campbell said that an additional harbour crossing would be considered in the future.

When and if the north-west rail link is recommenced as a project, it would be appropriate to revisit the options that were considered almost eight years ago. These include bus rapid transit in tunnels along the lines of the Brisbane system (and yes it can deliver the same capacity as a tunnelled railway for considerably lower cost, making it look like, smell like and act like a rail system).

Most importantly however, the continued failure to look at more efficient and fairer charging schemes for car usage (apart from a flat $30 registration increase for most car classes), denies the system of an opportunity to raise sizeable sums of money to put back into the overall transport system so car users and public transport users (and the freight
sector) can all benefit. It remains a puzzle as to what certain politicians believe that ‘roads should be free’. Clearly this is sending a message that people put little value on saving travel time!

Food for thought

**OP28: (January 2010)**

*Going Dutch – listen to the future*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

There is a slow but growing realization that the future of public transport depends on the future of road pricing related to vehicle use, with a portion of revenue raised to be earmarked to public transport as a way of obtaining stakeholder buy in. The Dutch government is leading the way – it plans to scrap the road tax as well as the purchase tax on all new cars when the system is introduced in 2011. The Minister of Transport says this will provide a fairer system which taxes vehicle use, rather than ownership. Indeed, the minister says that more than half of Dutch road users will actually pay less under the road user charging scheme. According to calculations by motoring organisations, only motorists who drive more than 18,000kms a year are likely to be worse off under the new scheme. Currently in Sydney Private cars average 12,500km per annum, Household business cars average 15,000kms per annum, and company cars average 22,000kms per annum.

A first implementation takes place in The Netherlands by 2011 for truck traffic and as of 2012 to 2016 for passenger cars. The motor vehicle tax (MRB) and the purchase tax (BPM) will be replaced by a system whereby the motorist pays depending on location, time and environmental aspects. The Automotive Telematics On-board unit Platform ATOP from NXP makes it possible to introduce pay-as-you-drive. It is safe, simple and very cost effective: it really is possible!

The Dutch government has determined that the costs of operating the national road user charge will not exceed five per cent of the proceeds. On November 16 last year the Dutch Cabinet agreed to the km charge for cars: 3 euro cents/km in 2012 increasing to 7 euro cents in 2017, equivalent of A$0.05/km in 2012 (or 50c/litre) or A$750 per annum (15,000km), compared to current registration fees (typically in Aust. around $300-$400). The 3 Euro Cents per km will increase to 6.75 Euro (€) cents per km in 2018. The 3 euro cents is an average but varies by class of vehicle based on energy efficiency (A, B, C…). Hybrid vehicles will pay approximately 0.5-1 Euro cents per km. In 2012, however as part of a phase in program, the new charging regime will apply to only 20% of cars (selected via a lottery), with 100% covered by 2018. The charge will be a flat rate per km per class up to 2018; however from 2018 a peak rate will start, but only in Amsterdam,
with a lower base (non-peak) rate when the peak rate is introduced. The entire scheme is designated as revenue neutral. It is claimed that 58% of people in entire country will be better off with significant reductions in congestion.

We look with great interest to the Netherlands. Will Australia like what it sees? It will certainly be much fairer than the very unfair (inequitable) system we have in place.

Food for thought

**OP27: (December 2009)**

*Beyond the Words – Action is now increasingly more visible*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

2009 was a watershed year with more State governments finally showing an increasing positive active commitment to public transport, as well as earlier initiatives starting to deliver tangible patronage growth outcomes. Whether we agree with the specific infrastructure and service propositions or not, there is now very tangible evidence that investment in improved public transport has begun. In Sydney we see planning well advanced on rail projects (e.g. The Metro in the CBD and out to Westmead, the South-West Rail link), and the roll out of 300 additional buses. In Victoria we see the high frequency Smartbus Route network grow to 198 kms.

The Bus Association of Victoria suggests that the success of bus patronage growth is attributable to frequency, span of hours, better network planning, and geographical coverage. We would not argue with this, but would also add capacity. We might also remind governments of all persuasions that within the limits of likely funding on public transport, achieving these four objectives will requires some careful thought on how much of the financial pie is available to serving the entire metropolitan network. We are seeing a risk associated with a focus on a few corridor specific projects that will leave little for the rest of the system.

The author, with Professor Corinne Mulley of ITLS-Sydney, and a PhD student at the University of Newcastle (UK) recently evaluated the impact of a high quality bus service known as Superoute (having some similarities to the SmartBus Routes in Melbourne), which can be delivered with relatively low amounts of financial investment. The ‘Superoute’ brand was designed and introduced to offer passengers high quality services across a number of the major corridors on local services within Tyne and Wear, to encourage greater use of public transport. Buses operating on a ‘Superoute’ offer higher frequencies than other routes, bus priority measures where appropriate to secure better punctuality, a high standard of shelters and information at stops, and modern vehicles including easy access for wheel chairs and prams. A total of 40 ‘Superoutes’ are operating across Tyne and Wear following their launch in 2002 (see www.superoute.com,
Patronage on the ‘Superoutes’ is on an upward trajectory since the introduction of quality improvements, whilst the rest of the network continued to decline. On average there has been a 30 percent growth in patronage over each two year period.

These examples highlight the need for greater partnership between government and operator, as well as a rethink about how restrictive existing contracts are in encouraging any initiatives such as the one above. In particular we would suggest that there are greater opportunities for Local Government to engage much more with bus operators (beyond current activity which mainly relates to the provisions of roadside furniture such as bus shelters) in sharing financial inputs where State Governments are not involved, since relatively small investments in quality partnerships like the Superoute initiative in the UK (which was not funded by Central Government) can deliver strong transport benefits while taking pressure off the road budget.

Food for thought

**OP26: (November 2009)**

Legally binding Commercial Arms-Length Contracts will work better if there is greater trust in the partnership between operator and regulator

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

The 11th International Conference on Competition and Ownership in Land Passenger Transport (Thredbo 11) was held in Delft, The Netherlands in late September. A number of bus operators, consultants and regulators from Australia attended (including all the Executive Directors of the Bus and Coach Associations in NSW, Queensland and Victoria and the President of BIC). Over 4 days we discussed and debated developments in reform agendas throughout the world as well as updating experience with contract systems already in place. A number of very useful experiences and recommendations were tabled. Some of the most pertinent ideas and actions around the world that should be shared with Australia are summarized below. As NSW in particular begins its next round of contract negotiations in the next 12 months, it is timely to reflect on what we have learnt.

In terms of the experiences with the NSW contracts, research undertaken by the author to has identified a very low degree of contract clarity in respect of ‘incentives to improve performance and grow patronage’, ‘contract renewal procedures’, and ‘ad hoc claims’. There was however a high level of contract clarity on ‘maintenance of accreditation currency’, ‘obligations regarding bus maintenance with the contract’, ‘agreements and obligations in respect of rights of operators in adjacent locations in joint service provision (integrated networks)’, and ‘payment procedures’. We also investigated how successful the bus operation has been under the contract in addressing (or resolving) issues that have arisen during this first contract period. We found that the most successful issues that have
been resolved through communication are ‘contract renewal procedures’, ‘maintenance of accreditation currency’, ‘contract end procedures’, and ‘adherence to contract matrix’. The issues where success has been perceived as quite ineffective have been ‘depot upgrades and expansion’, ‘change events’, and ‘incentives to improve performance and grow patronage’. This evidence should be taken into account in the next round of negotiations. Overlaying all this evidence was a finding that where operators reported a higher level of trust between themselves and the regulator, there was greater communication and quicker resolution of issues, saving money and time.

Looking to other countries we find that

1. Building and using Trust is not a vacuous construct but one with pre-conditions: Stakeholder Competence, Confidence, Consistency, Commitment, Common core objectives (The 5 C’s), Contract Clarity (before signing the contract), and Clarity of obligations once the contract is signed.

2. Evidence suggests that the greatest challenge in terms of ambiguity after a contract is signed is on the demand side with Service planning, Network design, and Marketing.

3. There is growing support for Gross Cost Contracts (GCC) which include strong and effective incentives and profit and loss sharing, mindful of budget constraints of Treasury. An example in Holland is Gross cost plus BIG incentives, with bonuses based on Satisfaction of passenger, Satisfaction of authority (with operator), and Growth in patronage. There is a shared benefit (25%) of extra passenger revenue, and a maximum bonus of 1 million Euros p.a. (approx 4-5% of turnover). There is also a recognition of a sensible budget constraint (crucial issue often neglected – which helps Treasury)

4. In Holland however, there is a strong interest in revenue-based contracts with budget subsidy incentives, although it is too early to decide their effectiveness.

5. Net cost contracts have come under criticism in Europe. The problem for the authority is managing evidence on revenue, and operators not reinvesting super profits back. As well, operators often have little or no risk over fares, network and actual potential market.

6. Up-skilling of all stakeholders but especially regulator/PT authority is crucial in building trust

Finally a crucial challenge that regulators should recognise and advise on is ‘how much of patronage growth can be attributed to the specific contract design, and how much is due to other factors?’

Food for thought
OP25: (October 2009)

The Bureaucrats are at Least Talking about Road Pricing, but can Federal Talk translate to State action UNLESS there is a sting in tail?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

It is very pleasing to see the Head of Treasury in Canberra promoting road pricing reform as a headline in his tax reform agenda. Ken Henry said that “There would be few areas in economics [road pricing reform] where such a clear and rational set of policy directions have so consistently lagged in practice.”

It is well known that, most of the time, cars impose minimal costs on other road users. However, in major cities we experience significant congestion during extended peaks, seven days a week, when each vehicle imposes costs on other drivers and does not contribute to the cost of so doing. This results in a... “predictable 'tragedy of the commons' estimated to waste around $9 billion a year in avoidable congestion costs, increasing to around $20 billion by 2020. Such costs will only increase with faster population and economic growth.”

Ken Henry makes an admirable stance “In the face of these [congestion] costs, why have we stuck to the traditional 'fuel tax and rego' model for roads, when sensible pricing
seems to offer such large benefits? The Federal government likes its fuel tax, and the State govt likes its vehicle registration charges.

While it is pleasing to see a senior Bureaucrat talking about Road Pricing, one wonders how Federal Talk is likely to translate into State action UNLESS there is a sting in the tail? The concern that needs addressing is that a congestion charge is very likely to be collected by State governments and not Canberra, and so one wonders what incentives have to be put in place for any suggestions from Canberra to be actually taken seriously by the States.

The Premier of NSW Nathan Rees (Front page Sydney Morning Herald Sat 1 Nov 2008) soon after his appointment said: “…there should be a public debate about whether or not congestion charging should be introduced for the CBD” AND”.. he wants cashless tolls on all of Sydney's major roads so motorists pay varying fees at different times of the day - an effective congestion tax to cut peak-hour traffic.” This is encouraging. However 11 months one we have a climate where the NSW government has announced its intention to remove the toll from a major tollroad next February. Hence one wonders about the preparedness to consider much more sensible efficient and fair pricing regimes. It is apparent that at least one State government believes that roads should be ‘free’, and that they are hence committed to paying with time and frustration, rather than with money. Feel free to oppose it, but do not complain about the traffic, Opposing efficient pricing means you are choosing to endure continual congestion problems.

Food for thought

**OP24: (September 2009)**

*The new era of zero emissions is in sight – good news for Public Transport? Maybe*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

There is a growing swell of opinion that the energy sources that has the current highest probability of replacing fossil-fuels is electricity via 'replacement advanced battery technology'. For those in the know, there is a lot happening in the development of vehicles driven on battery-power accompanied by a network of battery replacement stations (much like petrol stations).

It was announced on October 23, 2008 that Australia will become the third country in the world to have an electric car network (up by 2011) in a bid to run the country's 15 million cars on batteries powered by green energy. The international company Better Place (head office Canada) has teamed up with AGL Energy and Macquarie Capital Group to set up a network of "charging spots" and "battery exchange stations" to power electric vehicles in Brisbane, Sydney and Melbourne. The electric car networks, as they are called, allow zero emission vehicles to run on clean energy grids in order to reduce the dependence on
oil. As we all know, but often fail to remember, there may be a shortage of oil but there is no shortage of energy.

Denmark and Israel have already begun to lead the way on this initiative by moving to establish the world's first electric car networks. Under the plan, charging spots, to top up batteries, are being located in places where cars park, such as home garages, shopping centres and office carparks. The charging spots, which would look like parking meters, provide cables to connect batteries to a green energy grid. AGL Energy provides the power from renewable sources including hydro and wind. On the urban fringe and on freeways, "battery switching stations" would exist for trips longer than 161 kilometres. A driver would enter a switching station (much like they do today with filling up the fuel tank at a petrol station), and replace the car's battery before continuing on their journey.

Most notably, the advanced battery technology which looks very much like a flat disc will be slid into the undercarriage of a car and as a new battery is able to deliver power for up to 160 kilometres, which is plenty spacing between existing petrol stations which will become battery switching stations. As one approaches the battery switching station, one enters a facility that in a maximum of 40 seconds (once one is out of the queue), the flat battery is attached to the ground unit, slid out and a new battery placed in the undercarriage and away you go (after paying naturally! using electronic equipment much like an ETAG for a toll road). Battery technology at present has a maximum of 160 kms before recharge (or switching), and this deteriorates over time. After a number of recharges the batteries being switched in the long distance interurban context loose power and can be relocated to other switching stations in metropolitan areas where the kilometres between switching and hence recharge are less. There will come a point in time after a number of recharges where the battery will no longer be of use (much like batteries in mobile phones).

It has been estimated that the operating costs of these vehicles will be as low as 3c/km, in comparison to 12c/km for petrol-powered vehicles. With less moving parts the maintenance costs will also be lower. We are told that such vehicle will cost around $20,000 to purchase. This all sounds too good to be true! But it is happening and Canberra has started the process.

Although the focus is on cars initially, the evidence, if realised, will send a message about the carbon footprint of cars and (which should almost disappear – even allowing for the sourcing of battery technology and its power), and provide encouragement for the entire bus industry to move this way where it will be much easier to implement the battery switching network.

There must be a downside surely? Well if we fail to rethink the whole charging regime for car use, we will end up with much greater car use and hence traffic congestion in the big cities. In the rural and regional areas the lower cost of fuel and vehicle prices should mean that some who are disadvantaged but can drive will be better placed to buy a car. Hence it the cities this may signal greater urgency in introducing variable user charging where you pay per kilometer, so that we can properly reflect the cost of lost time,
something I have explained in detail in previous opinion pieces. The bus industry can both benefit through lower operating and maintenance costs but also worry about the possible increase in costs due to traffic congestion and the move away from buses in favour of low cost energy-efficient zero carbon footprint cars.

Food for thought

**OP23: (August 2009)**

*I Tolled you So!*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Have you ever stopped to think about how much people spend each year on tolls, compared with petrol, in using their cars in cities where there is an extensive and growing tolled road network? Let’s look at Sydney (see the Figure below). It is generally assumed that the average kilometres that a car is driven per annum (privately and company registered vehicles) is 15,000 kms. Given the current average retail price of unleaded petrol of around $1.25 (accounting for premium unleaded in the mix), and an average fuel efficiency of say 9 litres per 100kms, then the average fuel bill per annum is $1,687. Depending on where one lives in Sydney, as well as where one visits (including the work location), tolls paid per annum can be as high as $4,400 per annum for someone living in the Hills district, working in the CBD and using the M2/Lane Cove Tunnel/Harbour Bridge each day of the week for 45 weeks per annum. If you choose to avoid Lane Cove Tunnel, the annual toll impost is $3,100 per annum. Tolls in Sydney for those regularly using tollroads from the Hills district put the price of fuel in perspective!
Of course, not everyone uses toll roads, and indeed the 38 kilometres of tollroads do not cover all trip contexts. Indeed 18 percent of all residents in Sydney regularly use tollroads, and from the Hills District we are talking about over 80,000 trips each way per day where tolls are paid, the equivalent of approximately $125m per annum. This is equivalent to approximately $3,300 per car per annum.

The fact that tollroads are getting expensive for many trip situations around the Sydney metropolitan area, should raise questions about how long people will be willing to pay increasingly high tolls? The answer must lie in part with the travel time savings offered and the service levels of alternative modes of transport. It is interesting to note that 9 of the top 10 roads with the slowest speeds in Sydney in the peak periods are toll roads (the worst road in Sydney being a free road – Victoria Road). With buses benefitting by a dedicated lane on a number of the tollroads, and which are often seen speeding past the crawling car traffic, the elements of a clear message that bus services can do a better job than the car is starting to emerge. What also is emerging, however, is the apparent patience of many commuters who would still sit in their air conditioned/heated car, especially in the cooler months, without coughing commuters on buses and trains, and having to stand for quite a high percentage of the journey. Clearly we are prepared to pay a lot for getting a seat, which is guaranteed with car use but not for bus and train (and appears to be getting worse for train in particular).

Food for thought

**OP22: (July 2009)**

*Keeping the BRT Dream Alive*
Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

I thought I had exhausted my plea to take BRT much more seriously in a country still driven by the emotion and ideology of rail solutions (which is some situations are eminently sensible, but not as an automated view that this is the only form of public transport for high capacity corridors). However a recent compliment on my submission to the Senate Inquiry in funding public transport has reignited the need to keep reminding all about the merits of Bus Rapid Transit (BRT). A commentator with reputation emailed me and said “It's the first time that someone has made me take it seriously.” The essential message from my Submission is summarized below.

The advantage of bus rapid transit systems, if properly designed, is that they can, for given finite resources, provide much better coverage of the network in delivering the necessary services. One of the great risks of more expensive heavy rail - and I would say, to some extent, light rail, although it has a lot of similarities to BRT - is that we must not focus on just trying to solve the CBD problem, because the rest of the network, which is about 60 per cent of all trips in Sydney, is not going to have any money to be treated.

BRT, as we have seen in Brisbane and in many parts of the world, has the opportunity to provide the level of service that I think we need, given the capacity requirements of all the key corridors throughout the metropolitan area, not just in the CBD; to actually deliver much higher value for money. Generally speaking, although you could argue about the numbers, you can roughly get 100 kilometres of BRT for the price of a kilometre of rail, making assumptions about equivalent infrastructure like tunnelling and so on. That is why I also would say that, if you want to know how to do it, Brisbane has done it extremely well, and yet in other States there is some reticence to even want to know what the Brisbane system is. It is almost heritage stuff these days. You travel around the world and there are five BRT systems and, if you are serious about looking at value for money public transport solutions, you would spend a few weeks in Brisbane. I have to also say that a lot of this is working because of the institutional environment, where you do not have many organisations planning the outcome.

From a Federal perspective, at the end of the day where will the money come from to fund significant PT infrastructure? I would like to think that we would have a closer look at infrastructure bonds -I might even say expressly public transport infrastructure network and network bonds – (I was pleased to hear Lindsay Fox supporting this). I would also like to suggest that we have to rethink the whole issue of hypothecation, because we have underpriced this sector and we need to get it right, but we need to demonstrate what we are going to do with the revenue, so that those who use the system can see some return for the impost. I think one of the failings is that those who use the system at the moment, and who complain bitterly about the congestion and lack of time, are willing to pay but they want to see the benefit. It has to be made much more explicit, and I think the London congestion charging scheme with hypothecation is an excellent example of how you sell pricing to the community: you do not sell pricing, you sell revenue return.
Food for thought

OP21: (June 2009)

Individualised Marketing of Public Transport – Time to take it seriously?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

The recent ‘debacle’ with changed timetables and routings on buses in Sydney is a salient reminder about the power of the customer. All good intent was exercised by the operator to improve services; however the residual crumbs of discontent were not factored in.

Is it not time to actually visit households and identify the types of bus services (timing and routing) that would make a difference? This bottom up customer-focused individualised planning pays dividends. We know – just look at the accumulating evidence on the travel smart voluntary travel behaviour change program in South Australia in particular, that shows how many individuals have been informed one-on-one about specific services that might be of value to them (which are often not well known by potential users of public transport). Such an approach is especially useful when households have recently moved into a neighbourhood and are less familiar with the options, and possibly more open to consider public transport before habit sets in, provided that the information provided is seen as being tailored to suit the needs of the potential switcher to public transport. After all we buy a car, borrow money, and work with a travel agent to construct a vacation or business trip as a one-on-one arrangement, so why not do it for planning regular commuting and other local travel?

How does the travel smart program work? There are various versions, but essentially, a telephone survey can be used to sample individuals and then to classify them as ‘regular users’ (R) of alternatives to the car, and for householders to nominate themselves as ‘interested’ (I) in reducing their car use. The sampled households so classified can be offered access to a range of maps and brochures on travel options. Following the delivery of the information face to face by the public transport operator, they might be provided with a free travel pass for one month as an expression of interest. Importantly all participants who ordered information must be given a reward. For regular users of public transport it might be in the form of a letter from the public transport operator, or a small gift. Following the identification of the sample of interested persons, a follow-up meeting to take a close look at the person’s current trip activity and where public transport may be able to be used would be worked through, and the free pass used to encourage trying a particular bus and/or rail service.

While the human resources might be substantial, so is the task of attracting people out of their car. Since there are so many reasons why people stick with their cars, then why not try and identify those people who are sufficiently close to considering public transport but need a little help from the bus operators or regulator to assist in identifying ways of
making the switch. The focus on the population as a whole is far too aggregate in nature if we want to make a difference where it can count. This also includes being on the look out for pockets of serious discontent that would react the way people did in Sydney last month when a major timetable change occurred.

It is time that we also started to question the information that is provided in the spaghetti format of hard copy glossy timetables. I have great trouble understanding most of them. I wonder what the public think. Do we ever ask them?

Food for thought

**OP20: (May 2009)**

It is time for some demonstration projects that are Low Risk and Potentially high payoff

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

In recent months I have been repeatedly asked by many individuals in government, industry and the media on what I would do to improve public transport in our major cities. We see many proposals – some sensible, some whacky and others brilliant but impossible to fund. So what would I ‘recommend’? Where do we start? Well let us recognize that there may be some very low cost initiatives that can be tested, and if they succeed then build on them; if they do not succeed then stop doing it. This clearly suggests that we cannot spend 5 years building something only to have it fail. There may well be some initiatives that can be tested immediately that might be the basis of identifying if there is a serious market of patronage growth that is worth focusing on, even with longer term more costly investments involving non-reversible commitments.

The one single initiative that I have been pondering on for some time, and testing on a few individuals, is a simple one. Given that frequency and connectivity are primary elements of any successful public transport initiative, why not select an area of a major capital city and triple the frequency of bus services (i.e., have buses serving existing routes with headways that are 3 times lower than currently exist). Or, even better, offer 5 minute headways in the morning and evening peaks in a particular geographical context where we have a sense that there is potential patronage growth. Some pundits might respond with – ‘who is going to pay and where are we going to get the buses and drivers?’

My response is – let us take an area in a major city where say 50 buses operate in the morning peak. Let us increase this to 150, and so we have to find 100 buses. Let us undertake the trial for 12 months (you must have at least this time so that the market can become aware of the new services and establish ongoing commitment). Leasing 100 buses would cost about $15m maximum (which can be sourced for buses about to be retired as well as spare capacity that exists amongst quite a number of operators). In addition, government should support the use of existing buses in the off-peak where there exists a great deal of spare capacity, and test a number of service scenarios. These scenarios should include 5 minute headways in the peak, 10 minutes in the shoulders and 15 minutes in the off-peak Monday-Friday (at least). We would need to source drivers and also ticketing machines compliant with the local area as well as destination signage
and marketing of the new services. This seems a very small price to pay compared to commitments to expensive alternatives.

Where the new services deliver noticeable patronage growth, one should refine and extend the services; and where this is not evident, the services can be removed.

There is nothing like testing the market in real time, compared to spending huge sums of money of patronage prediction models that so often bear little relationship to how the market actually responds.

I encourage Minister’s of Transport and their senior advisers to take this opportunity seriously and act on it. The benefits may surprise everyone.

Food for thought

**OP19: (April 2009)**

The Senate Inquiry: Will then Listen, Learn and Act?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

It is pleasing to see that the Senate of the Federal Parliament is conducting an inquiry into investment of Commonwealth and State funds in public passenger transport. I was invited to give my views to the public hearing of the Senate standing committee on rural and regional affairs and transport. A summary of some of the points that I encourage the Inquiry to consider are summarized below and which I offered in my overview introduction.

The focus at the Federal level should be on the strategic emphasis of what this is all about and the connections between the federal government and the rest of Australia. Far too frequently there is too much focus on operational issues without getting the broad strategic vision right. The issue that challenges us is the ability to make good decision making with finite resources and to try and break away from some of the more modal ideology that this field unfortunately has suffered from over the years. What that means is that the crucial issue is recognising the nature of accessibility. Accessibility is what it is all about, not movement for its own sake; to get people to places. That means that we have to look at our networks much more seriously and, although corridors are not unimportant, our cities in particular are extremely low dense on a corridor basis, even though the CBD is dense, and it is the connectivity that is the challenge. My favourite words on this are that we have to focus on what I call ‘the system-wide test of connectivity frequency and visibility’; visibility especially in terms of buses, because one of the advantages of trains is that you know where they are going; often you have not got a clue with a bus.

One of the major failings is the lack of a strategic vision that is maintained and which frequently breaks down as a result of institutional failures. There are too many organisations working in the public transport and transport in general fields and not actually working well together. Sydney has the greatest challenges in this respect. It is a lot better in other places like Brisbane and Melbourne.

In order to make progress in terms of the federal connection, we have to look at the issues in terms of what does it also mean for climate change? Critically, we cannot ignore the fact that, in
order to make public transport more successful, we have to make the car less attractive (where the greatest potential savings in CO₂ emissions resides). At the national level, we should seriously start rethinking what we are going to do about charging for the congestion on the roads, and I would like to think that, with the support of the federal government, we could link this to some sort of incentive for state governments to work their way through this issue which is rejected every time it is mentioned, ‘If you want money from the federal government, you’ve got to put it to the system-wide test and show that it’s value for money.’ One of the real risks we have is that, if we focus heavily on projects which are easy to define and not on the system, we may end up spending most of our money on a few large projects and not getting the real return that we need. So the value for money test is what I am interested in.

On some other issues, I would like to see the federal government leading on standards. They have done it on toll roads with E-tag and interoperability. I would like to see the federal government doing this on smartcard technology as we roll it out with integrated ticketing, because my feeling is that we are going to get a spaghetti of differences across the country and we are not benefiting by the advanced nature of the expertise in some parts of the country, like Western Australia.

By way of conclusion, the Inquiry should not be just about cities; it should also be about regions and rural areas, and I think that we have thoroughly neglected the regional and rural areas in terms of the way governments go about their planning. Social exclusion is an absolutely crucial issue. Finally, 1976 was the last year that we ever did a national travel survey, so half the time we do not have a clue about what is happening outside the cities and it is about time we made decisions on better data.

Food for thought

**OP18: (March 2009)**

We need a National Vision Statement

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Congested roads, overcrowded public transport services and delays in agreeing, and then implementing, the kinds of changes that are needed to respond to such challenges in our cities are symptomatic of a long term lack of strategic planning and investment in Australia’s transport systems and infrastructure more generally. From about 6 percent of Gross Domestic Product in the early 60s, Gross Fixed Capital Formation in the key economic infrastructure sectors (transport and storage, electricity gas and water, communications services) fell to a little over half this share in the 90s. Over half of this decline in share was in the transport sector. National Competition and National Road Transport reforms have helped deliver improvements in the efficiency of infrastructure utilisation over the last decade and a half, including in the transport sector, and investment levels have recovered somewhat in the last decade. Yet there remains a considerable catch-up in store and much thinking to be done about long term priorities.

There is a need to radically overhaul the policy and system planning processes that drive urban transport infrastructure and services in Australian cities. An inability or unwillingness to take a long term, vision based, approach has given us incremental
approaches, which change with election cycles, or quicker. This will not resolve the long term problems of transport in our cities.

The long term pressures of responding to climate change, in particular, should drive a transformation in the way Australian cities approach their transport systems. This should flow through to how we shape out cities in coming years, and that a carefully targeted approach, affecting only a small part of our cities, can meet requirements. While transport infrastructure requirements attract most media attention, major transport pricing reform must accompany infrastructure development, to ensure that we make the best use of existing capacity. Pricing reform is a virtuous initiative, delivering its own direct welfare benefits and pushing travel choices in a direction that are more sustainable long term.

Infrastructure requirements in urban transport are substantial, partly reflecting three decades of declining investment share from the 1960s. Responses to investment backlogs and to emerging pressures must be framed in a way that helps to shape a more sustainable future, not simply be a response to “apparent” transport problems. Transformational change is required, not more of the same. International experience suggests that champions can be very important in achieving transformational change of the scale suggested in this paper. This is currently a case of “situation vacant” in Australia. The Federal Government’s creation of Infrastructure Australia provides a unique opportunity to change this dynamic.

Food for thought
This commentary is based on joint research with Professor John Stanley.

OP17: (February 2009)

Extra Bus Capacity in Sydney - Does it Make a Difference to Patronage Growth?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

When asked what I believe are the essential elements of a successful patronage growth strategy for public transport, I mention ‘connectivity, frequency and visibility’. The first two elements remind us that the ultimate test of impact is a network test and not just patronage along a single corridor. Visibility refers to ensuring that potential patrons know where the PT vehicle can be boarded and alighted (and is especially relevant to buses). A delicate balance is required between coverage (which is clearly linked to connectivity) and frequency. A tendency in recent years has been to recognise the importance of network connectivity, but then to focus on investment in a corridor (or project-based) ‘solution’ to the accessibility and mobility challenge of metropolitan areas. On the upside, the project approach can define with great clarity exactly what investment is required and make the investment need more transparent when funding is sought from Federal Government (e.g., under the Infrastructure Fund) or from a public-private partnership (PPP). The downside is that system-wide investments that are difficult to
compartmentalise as discrete projects often miss out for a serious injection of funding and have to be incrementally appended to a project-based planning system that is not ensured to be consistent with what a system-wide approach in the first place would arrive at. Instead we are forced to look for sub-optimal solutions that could be even more expensive than what we need if the focus was on network investment and not large scale stand alone corridor ‘solutions’. It appears that it is this ‘reductionsism’ philosophy that takes bite chunks of a system in isolation that inevitably results in over-supply of capacity in some locations and serious under-supply in the greater network. What can be done to resolve this? The Senate inquiry into public transport provides an opportunity to engage the Federal Government in a responsibility to link its funding (from all sources) to State governments to require a system-wide test on value for money and in particular to at least make the case that a specific project, especially those that absorb huge amounts of budget (with evidential cost overruns of about 50 percent), is indeed best value for money and that other explicitly evaluated alternatives are less attractive. We seem to have failed to do this in the recent past.

Food for thought

**OP16: (January 2009)**

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

It is not so long ago in (September 2008 ‘Food for Thought’) that we were looking at fuel prices being $2 by January 2009. Instead, at the end of January 2009 they are around $1.10 for petrol and $1.30 for diesel. What does this mean for the future use of public transport? We know that the short run fuel elasticity of demand for car travel (in kilometres) is close to -0.36, and for trips it is closer to -0.21. What this tells us is that if we were to reduce fuel prices by 10 percent, then holding all other possible influences fixed, we might expect a 3.6 percent increase in total vehicle kilometers, and a 2.1 percent increase in the number of trips. So if we take the $1.65 per litre for regular unleaded in September, and compare it with $1.10 per litre today, we have a drop of 55 cents per litre, or a massive 33 percent. This equates to an increase in car trips of close to 7 percent, and an increase of 11.9 percent in car kilometres. This is not good news for public transport in general, or for road congestion.

However, today we also have other factors at play that are in the ‘all other possible influences fixed’. Some will work to cushion the downside impact on public transport, while others will work against public transport. Specifically the key forces at work, at least in 2009, are likely to be reduced interest rates that make car use more affordable (after netting out the major expenses in mortgage repayments), and the loss of employment that works in favour of public transport (both in absolute numbers and in taking some pressure off the peak hours services). The other key element is the containment of getting out and about. We can expect a reduction in travel for discretionary purposes (i.e., to restaurants, shops etc.), accompanied by an increase in the purchase of specific entertainment items for the house to compensate for the reduced
non-home activity. With electronic goods declining in price (given the exchange rate advantage on imports in the last 6 months), car prices dropping (especially those currently on sale which were paid by importers at very attractive exchange rates), and fuel prices dropping, the net impact is likely to be a reduction in public transport use. By how much is hard to tell, but a reasonable estimate might suggest around 5 percent overall by the end of 2009 in our major cities. This will change the modal shares quite a lot; for example a five percent drop on the 12 percent share in Sydney reduces the share in absolute terms by 0.6 percentage points or from 12.0 to 11.4 percent. This difference may be a positive for overcrowded trains and buses, but not good for the general health of the sector.

Food for thought

**OP15: (December 2008)**

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

*Let’s Flatten the Camel and Use all of our Transport Capacity a whole lot better*

In November each year I head north to spend one week as a member of a small international advisory panel (IAP), chaired by the Singapore Minister of Transport, the Honorable Raymond Lim. As part of the 2008 meeting a ‘World Urban Transport Leaders Summit’ was hooked onto the IAP activity. Attended by over 100 delegates, a big theme was the shape of our cities and the role that public transport might and should play. During the final panel session, there was a lot of discussion on the benefits of having a metropolitan setting with one high density node (namely the CBD) as the basis of ensuring the viability of public transport.

A number of senior and well articulated participants were horrified at the thought, especially those from developing economies where more density is the last thing they want. As the discussion ensued it became clear that there is a lot of global support for a move away from a CBD centric view of the world, in which all transport is radial to the cause of the CBD; often to the neglect of the rest of the system which caters for a far greater number of trips and demands for accessibility.

The largest capital cities in Australia - notably Sydney, Melbourne and Brisbane - would in my opinion be far better off as liveable places if we stopped focusing so much on a single CBD, and recognized that we have cities of cities with great prospects of providing greater accessibility benefits. Some might say we already have refocussed; yet when one looks at what is happening on the ground, it is hard to see what strategic plans, actions plans, and vision statements actually meant. ‘Lost in translation’ comes to mind!

With a cities of cities focus, we can design our metropolitan fabric so that there is good connectivity between key nodes (i.e., a trunk level of service) as well as good connectivity to each of the nodes (i.e., a feeder level of service), which can use transport
means that are very cost effective and capable of delivering the required levels of service capacity. (I distinguish between vehicle capacity and service capacity per hour; the latter is what matters and not the former and when this is accepted we can see the attraction of bus solutions in contrast to rail solutions for most of the truck corridors in our capital cities).

Importantly we are not talking about urban sprawl but about making good use of the existing urban setting in order to give greater accessibility and living environments to all. The next time someone talks about improving access to the CBD, ask them why and at what opportunity cost to the rest of the system.

Food for thought

**OP14: (November 2008)**

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

*The Political Interest in Doing Something about Congestion is finally surfacing?*

The Australian Transport Council (ATC) moved forward on tackling urban congestion, at its meeting in Adelaide in November. State and Territory Transport and Roads Ministers met with the Commonwealth Minister for Infrastructure, Transport, Regional Development and Local Government to discuss a national transport policy. In relation to congestion, the ATC Joint Communiqué issued 7 November said:

“It (ATC) agreed that road pricing schemes need to be carefully designed and specific to their proposed locations. Jurisdictions will cooperate in modelling the congestion, network, socio-economic and emissions outcomes of various targeted pricing scenarios.”

Ministers are now openly discussing a suite of significant and even ambitious objectives that would have been hard to imagine a year ago. Although ministers have yet to bite the bullet on road pricing, they are seriously considering a range of road pricing schemes including HOT lanes, cordon fees, distance-based fees, parking measures, time-variable congestion pricing.

Some of the additional transport policies needed prior to a road pricing scheme to ensure success include improvements to public transport, walking and cycling facilities, enhancement of traffic management to mitigate adverse affects, encouragement to use mixed-modal travel such as park and ride services. Some of the other challenges, along with choosing the right road pricing scheme, are the costs of establishing and operating the system and the interoperability of technology.

We should be encouraged by these statements, but not ready to rejoice. Just when we thought there might be action in Sydney when the Premier Rees got headline news with
his commitment to tackling traffic congestion with differential tolls by time of day (initially on the harbour bridge and tunnel crossing), we were reminded by the Treasurer that he had no intention of introducing any form of congestion charging, but believed that the initiative of differential tolling in one location on the harbour crossing would have a noticeable impact on peak-hour traffic into the CBD of Sydney. With a differential of $1 in one direction only for individuals living on the leafy north shore in liberal electorates, we are unlikely to see any noticeable reduction in traffic level. Nevertheless we should give credit for recognising the potential merits of time of day pricing. A great pity it is limited to one harbour crossing location and not all entry points into the CBD. Talk of applying differential tolling to other tolled roads will require careful negotiation with the private sector concession holders since they would not be interested without some guarantee that their revenue would not diminish.

We all know that a successful public transport system would ideally like to flatten the camel and have no peak humps at all, but a flat level of activity throughout the day. The same logic applies to the road network, and it is not hard to speculate that with appropriate time of day pricing throughout the entire network (not just tolled crossing and for that matter just tolled routes), we might just find that we have plenty of road capacity. We are not aware of any other policy instrument that can achieve this.

Food for thought

**OP13: (October 2008)**

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

*Will we ever have enough Government funds to sort our Infrastructure?*

The Australian Infrastructure Fund has recently received over $235bn worth of bids for the opportunity to access the $20bn Infrastructure fund. We are advised that a proper benefit-cost analysis will be applied in the determination of what projects will get up. While we strongly support the initiative of government, we raise the more fundamental concern about how seriously the evaluation process could possibly be in determining which requests will be approved. There is a feeling abroad that such processes end up funding a few very large mega projects that have strong political visibility but may well be down the list of benefit-cost ratios, regardless of the level of detail associated with the benefit-cost appraisal. What this suggests is that we have to find other ways of funding infrastructure if we are to make a difference. The skeptic in me suggests that $20bn spread across the nation might (and between many sectors such as telecommunications and transport) deliver no more than $2bn to a capital city for transportation. With the focus on rail ‘solutions’ in Sydney and Melbourne, which will cost around $6-7bn (despite government pronouncement of the order of $4bn), it is unlikely we will see enough financial action to make a big difference. Even more concerning, projects that promote systemwide and network-based solutions in contrast to corridors are unlikely to get up. This is not good news for the bus sector unless by some marvel of turn, we see the
occasional bus rapid transit system (BRT), which could if taken seriously deliver at least ten times the amount of transport capacity for the same financial outlay as expensive rail ‘solutions’ (even with tunnelling where above-ground access is not available). Brisbane has recently completed tunnelling for its BRT, demonstrating that buses can operate efficiently in tunnels, despite claims to the contrary by those who support rail.

It is time to start thinking about alternative infrastructure funds. The obvious one, that built the Opera House, is a lottery. This alone, in a nation of gamblers and risk-takers, might be expected to deliver far more dollars for public transport that the Australian Infrastructure Fund will ever deliver. I am surprised that governments have not, at the very least, sought the views of the electorate on this very attractive way of finding the huge sums that we need. Let’s look at a scenario. Suppose PT lottery tickets were sold for $10 per ticket, and that 10 percent of the population in Sydney purchased two tickets through the year. This would raise in gross terms $80m per annum. If we deducted administrative costs and prizes, this sum might decrease to $60m per annum. Over five years, a period acceptable for a decent piece of infrastructure investment (compared to 10-12 years for rail)(ignoring inflation and adjustments into present value terms), we would raise a net sum of $600m. and build at least 20-25 kilometres of high quality (Brisbane-style) BRT.

Food for thought

OP12: (September 2008)

*Rethinking Stereotypical Segments of Potential Public Transport Users*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

*Passengers are individuals, so let’s seek out those who seriously might switch to public transport and stop trying to sell generic policies that are ignored by most*

As populations age and remain healthier well into their senior years, the standard socio-economic descriptors (i.e., age, income, car ownership, stage in lifecycle, occupation) that have evolved as stereotypes for public transport use begin to fail. It is commonly asserted that elderly residents are prime candidates for public transport use, described as short on money and long on time and hence captive to public transport. Thus low fares go with long meandering routes with relatively low frequencies. Increasingly, however, elderly residents fail the stereotypical test. Many are relatively wealthy, have a driving licence and a car, lead active lives and are short on time. Speed and comfort may be more important than low fares.

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3 Strictly speaking the Australian official definition of an elderly person is someone over the age of 85. The age range 55-85 is referred to as ‘seniors’. The advice from Bronwyn Bishop (MHR for Makeller) is appreciated.

4 They also have a strong preference for car use.
An alternative segmentation may be best defined by service perceptions and attitudes. Lieberman et al (2001) proposed a very interesting grouping based on the need for flexibility, speed and personal safety. They proposed six classes of individuals in terms of their travel requirements and expectations (see Figure 1):

- **Road runner** – high need for flexibility and speed and high sensitivity to their personal travel experience.
- **Cautious runabout** - high need for flexibility and speed but moderate sensitivity to their personal travel experience, distinguished from intrepid trekkers by their lesser concern for personal safety.
- **Intrepid trekkers** - high need for flexibility and speed but moderate sensitivity to their personal travel experience, distinguished from cautious runabout by their greater concern for personal safety.
- **Flexible flyers** - high need for flexibility and speed but low sensitivity to their personal travel experience
- **Conventional cruisers** - low need for flexibility and speed but high sensitivity to their personal travel experience.
- **Easy goers** - low need for flexibility and speed and low sensitivity to their personal travel experience.

Figure 1. The Diversity of the New ‘Stereotype’
These segments mapped to socio-economic and demographic descriptors are likely to provide a more useful basis for seeking out potential patronage for public transport. The presumption that this classification can be ‘explained’ by age and income is likely to be false. In particular this classification process can materially assist the ‘search’ for high eligibility candidates for switching to public transport under individualised marketing programs to which we now turn.


Food for thought

**OP11: (August 2008)**

*What if petrol was $10/litre? – how would motorists react?*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Traffic congestion, high fuel prices, and crowded public transport are three transport themes that are daily headlines that hit home to all urban populations. Until very recently when fuel prices began increasing at a non-marginal rate (see Figure below), traffic congestion was attributed as the major cause of the switch from car to public transport in many jurisdictions, creating high levels of overcrowding and congestion on trains and buses. The large increases in fuel prices in 2007 are now being suggested as the main reason for reduced car use and increased public transport patronage.

Petrol prices are increasing at a formidable rate. In July 2007 unleaded regular petrol was just under $1.30/litre and 12 months later the price is $A1.65/litre. Pundits predict that the price will be $2/litre by the end of 2008, and long-term forecasts by the CSIRO suggest a price as high as $8/litre in 2020. Given these recent hikes in petrol prices, we are seeing almost daily commentary on what this will mean for the future of mobility and accessibility and especially public transport patronage growth.

Commentary ranges from fear mongering using analogues from theology such as ‘the war on mobility has finally arrived’, ‘the end of western life styles as we know them’, through to views that we must not allow this to happen and government must act by reducing fuel excise, and views of elation that finally we have pricing signals that might encourage earlier investment in substitutes that include public transport, more fuel efficient cars as well as lower polluting vehicles.

5 Typically increasing from around $1.20 for a litre of petrol at the beginning of 2007, to over $1.60 in June 2007.
Using TRESIS, an integrated transport, land use and environmental strategy impact simulation program developed by the author, we are able to move away from the value laden commentary and assess the influence of higher fuel prices on short run and long run passenger travel activity in major urban areas in Australia. Using Melbourne as an example, when we evaluate petrol prices in the range $2 to $10 over the period 2009-2017, to establish likely impacts on car use, modal share, and greenhouse gas emissions, we find (see Table below) that the growth in bus patronage over nine years increases from 15.6 percent in 2009 to 2.5 times the current patronage today. This is equivalent to reducing car kilometers by 25 percent and greenhouse gas emissions by nearly 40 percent.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Increase petrol and diesel prices by $1 pa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009</td>
</tr>
<tr>
<td>Drive alone</td>
<td>-3.92%</td>
</tr>
<tr>
<td>Ride share</td>
<td>-4.18%</td>
</tr>
<tr>
<td>Train</td>
<td>18.66%</td>
</tr>
<tr>
<td>Bus</td>
<td>18.56%</td>
</tr>
<tr>
<td>Light Rail</td>
<td>8.67%</td>
</tr>
<tr>
<td>Busway</td>
<td>10.58%</td>
</tr>
</tbody>
</table>

Trend in Nominal Petrol Prices: Q3 1966 to Q2 2008 (source: ABS, ITLS)
Greenhouse gas emissions:

<table>
<thead>
<tr>
<th></th>
<th>TCO₂ (kg)</th>
<th>CO₂ per car vehicle kilometre</th>
<th>Passenger vehicle kms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth in patronage</td>
<td>-6.76%</td>
<td>-0.30%</td>
<td>-6.48%</td>
</tr>
<tr>
<td></td>
<td>-22.64%</td>
<td>-2.86%</td>
<td>-20.36%</td>
</tr>
<tr>
<td></td>
<td>-29.62%</td>
<td>-5.64%</td>
<td>-25.41%</td>
</tr>
</tbody>
</table>

* These percentages are growth in patronage, noting that bus, tram (light rail) and train are off a very small base.

The evidence herein suggest massive opportunities for public transport, which if not delivered will be converted into coping strategies centred around car use and relocation activity (including revised distributed work practices and even more ‘peak’ spreading). However, as substantial and impressive as these changes are, there are scary since the public transport system would be unable to cope given the current infrastructure investments plans for the next 20 years.

Food for thought

OP10: (July 2008)

**Prices and paying for car use**

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

There has been a lot of talk about the rising price of petrol and what it will do for “working families” of Australia. Add to this emissions trading and its implications on price hikes, and dare I say some more serious consideration of variable user charging such as a congestion charge, and the air is full of prices and higher prices. Some might say that finally we are starting to recognise the true cost of motoring, which is generally regarded as underpriced in that the full costs of motoring (including congestion and emissions) are currently not recovered from those who impose them on society. Indeed higher fuel prices may just begin to be a proxy for a preferred variable user charging scheme which is being denied by politicians in Australia both State and Federally.

The mere mention of efficient pricing in Australia and the political sky falls in on oneself. Recently, I commented in the media on ways of reducing traffic congestion and providing revenue to plough back into public transport. The political reactions were very disappointing. They were immediately dismissed by one State Minister. The Federal member for Mitchell, Mr Hawke, is stated as saying (to a journalist from the Hills News in Sydney) that “I find it particularly ironic that the day after I raised this matter [traffic congestion] of great concern to motorists in north-west Sydney we have an out-of-touch academic calling for another charge to be levied on already suffering motorists – a proposal which rather than calling for greater investment in public transport…. seeks to further slug motorists” He then goes on to state “…a more practical measure would be to levy on all academics who come up with impractical and ill thought out proposals that have no application in the real world….With the amount of impractical suggestions that
are proposed each year by academics, this type of levy would raise a significant amount of money to help fund infrastructure” Mr Hawke said.

Such commentary, while amusing to an extent, is a sad reflection on the state of political appreciation of ways in which we can reduce congestion, improve trip travel times and fund investment into public transport. It is the lack of intellectual thinking, so eloquently illustrated by the uninformed commentary on academia that has given us the current transport situation in our larger cities. With some relief, not all politicians think this way; however the politicians staying attuned to the global debate on these matters and even starting to implement some of the ideas are contributing to the economies of The Netherlands, the USA, the UK, Italy and dare I say Singapore. Given that the Netherlands is about to remove fuel excise and introduce a variable user charging scheme that is aligned with my recent media commentary, I can but only assume that the Member for Mitchell would lump them in with the ill informed academics. Ah Ah! it also appears that Professor Garnaut and his emissions trading scheme, with pricing of petrol, fits the academic set of ‘impractical suggestions”. After all it is similar to a congestion charge – another increase in the cost of motoring.

One might hope that this opinion piece might encourage more carefully thought and responses from those who we elect to move our great country forward.

Food for thought

**OP9: (July 2008)**

*For Whom the Bell Tolls*

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

At the recent Colloquium in Canberra I spoke on the topic of infrastructure as a network system and not as a series of potentially disconnected projects in corridors. Prior to my talk I had raised a question in discussion time on the missed opportunity, through the public-private partnerships in toll road concessions, to require under contract the provision of dedicated lanes for buses throughout the entire length of all tollroads. The speaker who was the general manager of a tollroad company responded by telling me that buses do not work well on tolled roads because they need bus stops for the travellers who would need to get on and off at frequent intervals. He went so far as to suggest that buses are best as modes to feed trains and to not be considered as viable options on tollroads. Fortunately I was not the only person who found such a response quite amazing and wrong. He missed the point entirely that some of the most successful bus services in terms of patronage growth are those that deliver passengers over long distances (for example the Hills service between the Hills District and the central business district in Sydney). The figure below shows very clearly, admittedly schematically, that buses can
make a high difference to delivering long-haul metropolitan public transport, at a high value of money to the taxpayer which operate as both feeder and truck. What is missing in most Australian cities is a decent road network to be able to support much higher levels of service that buses are capable of delivering.

Food for thought

This should resonate will with the growing focus on infrastructure. No longer is the bus operator the constraint; it rests centrally in the inadequate interface between the ability of operators to do what they do best and the road infrastructure they are offered to perform on. Network planners will advise that successful network structures should be consistent with branching structures, overlaid express services, bus stops/stations located off-corridor and direct connections. Tollroads should be seen as crucial to this network solution since in recent years they offer the greatest prospects for a truly multi-modal corridor that can accommodate a greater amount of public transport activity over longer distances than any other public transport infrastructure project.

The message herein is clearly in support of bus-based public transport that can deliver service levels, as high, if not higher than conventional views about rail. Value for money is assured. Unfortunately my views will again be described as those of a bus-lover. How sad, since the mode is really irrelevant in the search for the best accessibility outcome per dollar outlay. In introducing my talk in Canberra I made a plea to have the audience remove its modal bias and listen to the arguments and evidence. Sadly I suspect that is impossible.

Food for thought
OP8: (May 2008)

Future Directions to Fund our Roads that Buses Use: Listening and Learning from Other Countries

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

The provision of road infrastructure globally is undergoing major institutional change as governments increasingly hit budgetary constraints on traditional sources of public sector financing. The funding of roads from common sources (e.g., fuel taxes) is becoming more problematic than ever before. While in some jurisdictions it is a matter of allocation, in other contexts, it is a more serious concern about the total amount available to allocate. In California, for example, a 2007 Road User Fee Task Force Program issued a White Paper from the Californian Performance Review (CPR). Initiated by the Californian Governor with reporting back directly to the Governor’s Office, it has been promoted in response to the diminished proceeds from fuel taxes. Funding ‘by the gallon’ from fuel-use taxes no longer suffices, despite some additional Federal Government contributions.

The ‘new’ funding sources are primarily private capital and road user charges. The growth in congestion in many urban areas accompanied by increased emissions (air pollution and enhanced greenhouse gas) from cars and trucks has refocussed interest on user charging to both reflect efficient internal cost recovery as well as to internalise the increasingly damaging negative externalities of road transport activity. Kilometre fee development (all networks), with/without fuel tax compensation is an example of the future direction. Paying by the mile is now on the political agenda in California. As little as 0.1 of a US 1 cent fee per use-mile, it is suggested, would generate annually $US310m towards the road funding bill in California.

As an illustration of a dramatic institutional reform linked to the provision of road infrastructure, the Dutch Transport Minister, Camiel Eurlings, announced in early 2008 that satellite-based road user charging will be implemented throughout the Netherlands to reduce congestion and finance future road infrastructure. The 'kilometre price' proposed is to be differentiated by location, environmental properties of the vehicle, and time of day (effectively a peak/off-peak or congestion charge)\(^6\). It is to be introduced for all vehicles on all roads in the entire country, starting with trucks in 2011 and phasing in a scheme for cars from 2012 to 2016. The Dutch government plans to scrap road tax as

\(^6\) The road user charge scheme will be facilitated by GPS/speed sensor vehicle tracking, calculated by onboard electronic accumulating odometers, remotely assessing travel from central computers that are capable of applying a range of charging regimes. These include uniform road-use charges and congestion pricing (differential charging according to traffic conditions) including adjusted-upward charges for road use in remote areas (perhaps excluding local residents) where maintenance costs are high and distances travelled are relatively less. Graded distance fees can also be introduced if desired – possibly on equity grounds.
well as purchase tax on new cars when the system is introduced. Eurlings states this will provide a fairer system which taxes vehicle use, rather than ownership. Indeed, the minister says that more than half of Dutch road users will actually pay less under the road user charging scheme. According to calculations by motoring organisations, only motorists who drive more than 18,000kms a year are likely to be worse off under the new scheme. Importantly, the Dutch government has determined that the costs of operating the national road user charge will not exceed five per cent of the proceeds.

This must be good for road based public transport. With a Federal government repeatedly supporting a greater engagement in the cities in order to tackle road congestion, amongst other agendas, the activity overseas must be good news for Australia if we listen and learn and do something about it.

Food for thought

**ABC Magazine Opinion Piece: Food for Thought**

**Time to be Innovative with Freeway and Toll Roads**

**OP7: (April 2008)**

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

One of the topics in any discussion about ‘what to do with growing traffic congestion and the dominating role of the car’ is to find ways by which we can still allow car users to travel without incurring any extra costs, while providing opportunities for car users who are willing to pay more to save time. Since buses also use roads, then there may be real cost-effective opportunities that enable buses to be the beneficiary of any innovative car strategies. There is one which has been staring at us for a long time - the HOT (high occupancy tolled) lanes for high valued car trips and buses.

This is how it might work. Let us use the M4 in Sydney as an example and assume that we are able to provide three lanes in each direction (at present there is a mix of two and three lanes in each direction). The inner lane would become the HOT lane so that the inner and outer lanes are available for entry and exit from the road. Some investment would be required to move the other two lanes slightly to the left and right respectively, to enable a distinctive separator for the HOT lane. The rule of use of this HOT lane would be based on a distance-based charge (or even a fixed premium toll) for car users willing to pay a greater amount to have a higher guarantee of travel time savings (essentially buying time savings and travel time reliability or predictability). The buses would use this lane as well and be exempt from the tolls. Importantly the toll level must be varied as evidence of traffic build up occurs in the HOT lane (as is done in Southern California for cars), so as to deliver target travel times.
In Southern California, the HOT lanes are the innermost lane (i.e., the one by the median). They have limited access and egress points which also help to control the volumes of traffic. There is an exit/entrance about every three regular exits/entrances to the freeway, so that a vehicle that wishes to use the HOT lanes must anticipate its exit and get off in plenty of time to transition across the remaining lanes to exit. This should work well with a 6-lane freeway.

This idea may sound like bus lanes; however it is different in that we have a way forward of funding the initiative through the differential between the baseline toll on other lanes on a tollroad such as the M4 and the premium toll for cars. We would advise car users that the increment in toll that delivers a faster trip will be used to reinvest back in delivering more HOT lanes that can also benefit public transport. No more will we see cars users complaining about the empty capacity of a red-painted bus lane, for they can use the HOT lane with buses without impeding travel times of both modes, as long as car users are willing to pay a premium in toll.

Strategic thinkers would surely see this as having great merit.

Food for thought

**ABC Magazine Opinion Piece: Food for Thought**

**Frequency and Connectivity – Key Drivers of Reform in Urban Public Transport Provision**

**OP6: (March 2008)**

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

Public transport investment is being touted as a key springboard for a sustainable future, especially in large metropolitan areas with growing populations. Whether such investment will turn the tide away from automobility is a big question; however regardless of the likely outcome, any commitment to improved public transport has a growing number of options to pursue. Although variations in rail systems typically loom dominant in many strategic statements on urban reform, ranging from heavy rail through to metro rail and light rail, there is a growing interest worldwide in ways of making better use of the bus as a primary means of public transport, and not limited as a service that feeds a rail network.

In establishing a role for public transport, it should be enshrined in the motto of delivering ‘frequency, connectivity and visibility’ that is value for money as defined in
terms of net social benefit per dollar outlaid. Connectivity refers to the provision of services that offer door-to-door services with minimum delay and almost seamless interchanges. Visibility is predominantly ‘knowing where the mode is going from and going to, and when’.

There are many ways in which bus transport can be developed as part of an integrated network-based public transport system, typified by the best practice bus rapid transit (BRT) systems in South America such as Curitiba in Brazil and TransMilenio in Bogota, Colombia. Bus Rapid Transit is “…a high-quality bus based transit system that delivers fast, comfortable, and cost-effective urban mobility through the provision of segregated right-of-way infrastructure, rapid and frequent operations, and excellence in marketing and customer service. BRT essentially emulates the performance and amenity characteristics of a modern rail-based transit system but at a fraction of the cost. A BRT system will typically cost four to 20 times less than a light rail transit (LRT) system and 10 to 100 times less than a metro system.”

Recent research shows the appeal of BRT in Los Angeles when comparing the Orange line BRT with the Pasadena, California Gold Line light rail (LRT), both of which connect to the Red Line subway and have similar service patterns and length. The BRT is performing considerably better than the LRT. The latter costs considerably more and carries fewer riders. Capital costs per average weekday boarding for the BRT line is $US16,722 in contrast to $US45,762 for the LRT line; cost per revenue service hours for BRT and LRT are respectively $US243.18 and $US552.54; and cost per passenger mile are respectively $US0.54 and $US1.08. These are impressive evidence of the value for money from BRT compared, in this instance, to an LRT system. Metro rail and heavy rail would be even more unattractive within the service capacity range studied.

What lessons can be learnt from the most successful BRT system in Bogota, Columbia, the TransMilenio, and what is its applicability to Australia. The most important findings relate to connectivity and network integrity, reinforcing the view that it is all about networks and not corridors per se. They suggest that BRT is capable of playing a role in the achievement of a wide set of objectives such as sustainable accessibility and urban renewal when implemented as part of a holistic package of integrated strategies. Importantly it is the commitment to a network of BRT routes (and not a corridor view of planning per se), which gives a metropolitan area the opportunity to enhance the accessibility and urban renewal benefits from corridor level to metropolitan wide level. The relatively low capital costs have made this possible in many countries within a relatively short time frame (up to 5 years often). Whether this is a transition strategy to other forms of public transport or an end in itself should be determined by how the market responds. It is not uncommon to see BRT promoted as a transition to light rail, metro and even heavy rail (e.g. in Brisbane and Pittsburgh), partly to get something started within constrained budgets, but to also appease anti-bus groups who see public transport as singularly rail. What is encouraging is that the success of many of the BRT systems has resulted in its expansion without the need to go to a rail ‘solution’. Carrying capacities of BRT (see Figure 1) are increasing all the time and moving the case solely for rail off of many agendas.
Food for thought

ABC Magazine Opinion Piece: Food for Thought

OP5: (February 2008)

537 words

Why are bus operators not taking advantage of alliances to share costs and grow business?

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

If one studies the airline industry, one is struck by the amount of alliance activity amongst two or more operators. These alliances come and go, and are restructured regularly and re-focussed as required. In aviation, such alliances range from very light alliances such as purchasing fuel together to get a bulk or super bulk discount, to maintenance cost sharing, and heavy alliances in code sharing of flights amongst passengers booked onto different airlines.
For many years of lecturing in the NSW Certificate of Transport Management (CTM), I have suggested that there are many opportunities for bus and coach operators to work cooperatively together in getting better deals on cost inputs, even if the operators may compete for patronage business (this is known as cooperative competition). It is good for all, since it ensures greater efficiency in consumption of resources, as well as opening up opportunities under contract or otherwise for the scarce government dollar to go further, giving even more value for money. Yet bus and coach operators, with rare exception, do not do this, and as far as I can tell, my advice through the CTM is rarely acted on.

It has taken me some years to try and work out why this opportunity is not grabbed. Bus and coach operators in the main (there always are exceptions), regardless of size and ownership, are very conservative (certainly when compared to the airline sector), and are heavily focused on operating a business in a very day-to-day manner rather than thinking about strategic opportunities that can actually assist in operating a business more efficiently and effectively. Years of dependence on government and declining patronage (often for very easily explained reasons), have made the industry somewhat inward looking. It is true that bus and coach associations play an important role in facilitating a wide range of financial deals for members, but this is not the same as individual operators working with other operators to gain even better cost and service outcomes.

Maybe some more lateral thinking on this matter could be used to give an operator a strategic advantage as we move into benchmarking of operators. Those who form an alliance for specific cost input savings relative to what they pay out by going it alone must be advantaged. This is not a matter of ‘getting into bed with the direct or indirect competitor’ since contacted operators who will be increasingly subjected to benchmarking to earn the right to re-negotiate their contracts (in contrast to being subject to competitive tendering), should all be trying to assist government who pay most of their bills, to reduce the cost of providing bus transport. Future benchmarking programs would include recognition of this cooperative alliance process through higher rankings of such operators.

There are so many innovative way of creating input cost alliances, that the smarter strategically thinking operators(s) will always increase their chances of entering re-negotiation and moving themselves further away from the risk of being subject to competitive tendering.

Food for thought

ABC Magazine Opinion Piece: Food for Thought

OP4: (January 2008)

581 words
It is all about dollars – there is a will but a difficult way

Many years ago I said that ‘One will never make public transport more attractive without making the car less attractive, if buses and trains want to make a serious dent in the mainstream travel market, in contrast to the number of niches which keep public transport, buses in particular, afloat’. The situation appears to have hardly changed with one exception – the real curse of the road system, namely traffic congestion, may the savior of public transport, but only if governments are able and willing to invest literally billions of dollars into public transport infrastructure in metropolitan areas. Sadly in Australia, the lack of political will at all levels of government, in supporting congestion charging and some amount of hypothecation, means that revenue sources will be hard to come by.

Despite the long list of offered ‘solutions’ by ‘experts’ and the democratic community of the partially informed ‘lay experts’, the simple facts are that until we can offer a substantially improved public transport system, there is very little chance that any major policy effort to attract significant car users into public transport will be anything than a short term nightmare, with a consequential return back to the car. With a modal share in Sydney of 10 percent of passenger trips by public transport, and with rail struggling to cope now that any spare capacity has been taken up, imagine getting even two percent of car trips into the rail system or the buses. This would increase public transport trips by 20 percent and the current system simply would not be able to cope. A similar situation would exist in Melbourne. What this suggests, time and time again, is that a focus of substantially higher frequency of bus services combined with efforts to establish dedicated rights-of-way for buses, is not only a sensible value for money strategy, it is also the way of delivering accessibility and connectivity to the entire metropolitan area. A mix of good coverage and good frequency is essential. Focussing on specific corridors with high cost investments such a heavy rail, while appealing to some and also sensible to some degree, comes at a very high opportunity cost of being unable to invest in the rest of the public transport network, which is essential to ensure a mainstream move back to public transport.

The good news is that politicians and government advisers agree with all of this; the bad news is that they have limited resources to do a great deal about it. It is just a matter of time before we have to involve the private sector and introduce more efficient variable user charging for car use. If it is done properly, most car users will be better off. As an example of taking the hard decisions, the Dutch government, in 2011, plans to scrap road tax as well as purchase tax on new cars. This will provide a fairer system which taxes vehicle use, rather than ownership. Indeed, the minister says that more than half of Dutch road users will actually pay less under the road user charging scheme. According to calculations by motoring organisations, only motorists who drive more than 18,000kms a
year are likely to be worse off under the new scheme. In Australia, the average kms per annum of urban residents using their privet car is 12,500kms.

Food for thought

**ABC Magazine Opinion Piece: Food for Thought**

**OP3: (December 2007)**

350 words

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

*Buses are boring and trains are sexy – time to do something about it?*

The image of the simple bus is not good. It has essentially remained as a rectangular box (with the occasional mild curve) since we moved away from showing off the bonnet in the 1950’s. I have formed a very strong view that public transport in general and bus services in particular should be enshrined in the motto of delivering ‘frequency, connectivity and visibility’. Connectivity refers to the provision of services that offer door-to-door services with minimum delay and almost seamless interchanges. While the idea of visibility is predominantly ‘knowing where the bus is going from and going to, and when’, good looks would not go amiss. It has the same implications as a car driver who prefers to travel in a smart looking sports car or modern Mercedes or BMW. When I discussed this with one of our very reputable bus body builders, the response was that we do need to make our buses look more interesting, but that government regulation requires specific angles for lights etc.

What I find very odd about this is that in many counties, notably in Europe, we have some really attractive buses that appear to preserve this feature without having to stay rectangular. A set of pictures that I often show people are given below. The first reaction is ‘what a nice looking light rail”? Wrong – they are actually buses. Indeed such better looking buses when manufactured in large volumes are very cost competitive with the rectangular box, and with some thought, can carry the same number of people. Combined with low floors, Euro 4 or better engines and style, they must surely be given more serious consideration than we see today in the Australian way of designing buses.

We eagerly await the first Australian-based bus body builder’s new offerings.

Food for thought.
OP2: (November 2007)

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

*Things could be better but relative to other countries it is.....*

I have just returned from Singapore where I am a member of the International Expert Panel to advise the Minister of Transport and the Land Transport Authority (LTA) on its transport policies and strategies, and help keep LTA abreast of the latest global trends and developments in land transport. You may well ask – what can we offer Singapore?; whom I am sure many ABC readers would hold up as a ‘jewel in the crown’ in the provision of public transport and how it deals with the car by electronic road pricing. True that the return on investment is something Australian operators only dream of (lets
leave it at 20 percent plus and no operating subsidy), but it may come as a surprise to know that the bus system is not any more cost efficient and service effective than many urban operators in Australia (after exchange rate conversion). This means that if one wants to dip one’s toes offshore, that there are serious entrepreneurial openings when and if competitive reforms take place (keep a vigilant watch on this). Never deny the fact that many Australian based operators have been through tough times and the survivors are healthier for it. Take this experience and use it to stand up and be counted amongst the set of globally mobile operators who are in the business of dividing up the world into 25 main players (yes – you did hear it right – that is the view of many in the know).

Some of the challenges in Singapore are not dissimilar to those in Australia. For example, the debate on fare structures under fully integrated and seamless multimodal public transport ticketing is alive and well in many countries. We are not alone and unoriginal. The big issue is the flag fall component on each mode and the impost of having to pay it each time one changes mode. The solution is amazingly easy apart from the modal politics – namely do away with flag fall, have a distance or time-based fare structure (just like the direction that tolling of roads in heading) and set up a clearinghouse (again like fuller interoperable toll roads) to receive revenue and disperse it appropriately. In some countries they are using the move to smartcard fully integrated ticketing to review and revise many outdated fare structures and introducing simpler fare structures that reflect both efficient and equitable fares and most important are sensible ways of attracting people back to public transport. Food for thought!

ABC Magazine Opinion Piece

OP1: (October 2007)

480 words

The Data Trail - Keep it Simple but make it Meaningful

Professor David Hensher, Director, Institute of Transport and Logistics Studies (ITLS), University of Sydney

My recent participation in a number of inquiries into ways to improve the efficiency and effectiveness of public transport has highlighted the inadequate focus on really knowing what does make a difference to actual and potential users of public transport. There appear to be a large number of customer satisfaction surveys which seem on balance to focus mainly on looking at how satisfied (happy?) existing users are with a range of existing service attributes. There is something missing – someone may be eternally
satisfied with a specific feature of a service (e.g., the attitude of the bus driver or the inspector on the train or the attendant at the Ferry wharf), but is that really so important as to influence whether someone would choose to use or not use a bus or train or ferry? An obvious and simple improvement would be to identify how important specific service features are in one’s choice of means of transport and how well is the operator performing in providing the service in terms of that feature. As an example, we might think about asking how does the stakeholders’ perception of how successful the operator has been in addressing each of the issues compare with their perception of how important each of the issues are? To determine this, a simple “difference score” might be used, defined as the difference between the importance and success ratings given by each respondent to each issue as shown in the Table below.

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<th>How Important Scale:</th>
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A positive score indicates that the success in addressing an issue is lagging behind its importance in choosing a means of transport. Its magnitude is indicative of how much success is lagging behind importance. For example, the score “3” is obtained when the stakeholder considers an issue to be very important but the same issue has been unsuccessfully addressed by the Operator. A negative score indicates that the Operator has over addressed an issue given its importance to actual and potential passengers. For example, the score “-3” indicates that a stakeholder considers an issue to be unimportant even though it has been very successfully addressed by the Operator. A zero score indicates that the Operator has addressed the issue in line with its importance.

Given the growing importance of measuring the passenger’s (existing and potential) assessment of the effectiveness of public transport services, it is timely that we at least ask the question: Do we Really Know our Passengers? Are we measuring incorrectly if we want to grow patronage? Information is only relevant if it is useful.