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**Urban Public Transport  
Futures: Broadening the  
Policy Debate**

Edited by  
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The Fourth International Conference on  
Competition and Ownership in Land Passenger  
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**ABSTRACT:** The Fourth International Conference on Competition and Ownership in Land Passenger Transport<sup>i</sup>, held 10-12 July 1995 in Rotorua, New Zealand, provided a forum for presentation and debate on the latest developments in the provision of land-based public transport. Over 120 participants from around the world gathered over 4 days in 5 workshops and 3 plenary sessions. The workshops were 1: Competitive models and impacts, 2: User requirements, 3. Rail sector issues, 4: Regulatory reform and transport policy development, and 5: International experiences in competitive operations<sup>ii</sup>. The opening address and workshop reports presented herein enable a wider audience to benefit from the outcomes of the deliberations.

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<sup>i</sup> Papers and workshop reports from previous conferences in the series are available from: Conference 1 (Thredbo, Australia 1991) in *Transport Planning and Technology*, Vol. 15, No.s 2/4 special double issue guest edited by David Hensher; Conference 2 (Tampere, Finland 1991) edited by A. Talvitie, D. Hensher and M. Beesley 'Privatization and Deregulation in Passenger Transport', available from Auranen Ltd., Saksankatu 1, 30100 Forssa, Finland - fax 358 16 25854; Conference 3 (Toronto, Canada 1993) edited by J. Love and available from Ontario Motor Coach Association, 234 Eglinton Ave., E. Suite 412, Toronto, Ontario, M4P 1K5, Canada (Fax: +1 416 488 6141).

<sup>ii</sup> The papers of the Rotorus Conference will not be published, but are available from the conference organisers (Fiona Knight, Transit New Zealand, P O Box 5084, Lambton Quay, Wellington, New Zealand, Fax: +64 4 496 6666 for \$NZ75 plus postage).

# COMPETITION AND OWNERSHIP IN LAND PASSENGER TRANSPORT: THE 4TH INTERNATIONAL CONFERENCE: PART 1

## INTRODUCTION

**David A. Hensher (Chair) and Fiona Knight (Convenor, New Zealand Organising Committee)**

The Fourth International Conference on Competition and Ownership in Land Passenger Transport<sup>1</sup>, held 10-12 July 1995 in Rotorua, New Zealand, provided a forum for presentation and debate on the latest developments in the provision of land-based public transport. Over 120 participants from around the world gathered over 4 days in 5 workshops and 3 plenary sessions. The workshops were 1: Competitive models and impacts, 2: User requirements, 3. Rail sector issues, 4: Regulatory reform and transport policy development, and 5: International experiences in competitive operations<sup>2</sup>. The opening address and workshop reports presented herein enable a wider audience to benefit from the outcomes of the deliberations.

A number of issues had a dominating role throughout the conference - (i) the concern about an emphasis on cost-minimising strategies, more eloquently expressed as the tendency to give short change to 'serving the community of actual and potential passengers', (ii) the lack of a clear set of definitions of some critical concepts such as productive efficiency which has led to some major misunderstandings of the objectives of specific tendering procedures, (iii) the relationship between contract duration and incentives for investment in assets, and (iv) the quality of data and its transparency necessary to ensure that debate and decision making is aided by better information.

Is competitive or non-competitive tendering/franchising simply a cost-minimising strategy with little consideration of service levels? Objections to tendering promote this interpretation. However in all tendering specifications, be they gross or net contracts, the emphasis in principle has been on the provision of a *given* level of service for the lowest cost. That is, regardless of what level of service is being considered as minimum, there is an express desire to deliver it at the lowest cost. Other implicit or explicit criteria are typically included in the evaluation process such as quality of vehicles (age profile), and the credibility of an operator. The minimum cost tender is reasonably assumed to be the best value for money service provider. While the actual price offered under a tendered contract may not be the 'efficient' price achievable under economic deregulation, the claimed advantages of regulated competition for the market more than outweigh the uncertainties in service provision associated with 'on-the road' or 'on-the track' competition.

The recognition that *level and quality* of service is quite central to a cost efficiency strategy has often been ignored in practice, as critics of competitive tendering highlight cost-minimisation as the motivation for the current worldwide interest in tendering. The need to re-emphasise user benefits within an environment of cost efficiency must be given more prominence. There is a concern that the levels of service currently supplied are lower than that previously offered under a territorial monopoly with no potential competition. The advocates against the current philosophy argue that priority should be given to maximising the level of service and then establishing the minimum cost strategy for delivering this service. This difference appears to be the basis of much misunderstanding and hence criticism of competitive tendering by proponents who promote more emphasis on user benefits and less emphasis on the 'bottom line'.

The conference supports a review and revision, where necessary, of appropriate levels of service followed by a full competitive tendering approach. How existing minimum levels of service have been defined should be reviewed. The distinction between 'doing things right' and 'doing the right things' is very real and must be taken into account when evaluating alternative ways of delivering passenger services.

Although institutional reform of public transport is important, the agenda for the future of public transport is much broader, with the real competition coming from the automobile in both urban and long-distance passenger transport. The opening address by Hensher and workshop 2 report on user requirements, provided an opportunity to emphasise the broader context. As many developing economies grow in wealth the desire to own and use an automobile grows. The continuing debate on the need for congestion pricing and complementary non-pricing actions through planning decisions must be meshed into the more narrowly based cost efficiency paradigm driving much of the reform in urban public transport. Public transport operators talk of competitive efficiency as a reasonable justification for keeping fares low until there is appropriate pricing of competing modes. One might then interpret part of a community service obligation (or subsidy) to public transport as compensation for the presence of externalities associated with automobile use which equate with a social subsidy to car users. A useful calculation would involve identifying efficient prices and then determining how much of the gap between efficient and current fares can be attributed to cost inefficiency, to the presence of externalities associated with automobile use, and to equity compensation.

The debate continues on whether infrastructure and operations in the rail sector should be separated, with a continuing role of government in one or both areas of activity. The rail workshop reviewed alternative institutional structures, especially the Swedish model and the British model. The former promotes an infrastructure company owned by the government together with an access company which coordinates bids for access to the network. In contrast the British system appears much more fragmented with opportunities for privatisation of the track and operations in various configurations.

In the remaining sections of this report (Parts 1 and 2), we overview the challenges facing public transport followed by a summary of the debate and specific recommendations from each workshop Chairperson and Rapporteur. The full set of papers presented at the conference are listed at the end of Part 2, together with all references. The next conference in the series will be convened in the United Kingdom in 1997, hosted by the Institute For Transport Studies at the University of Leeds (organised by Professor Christopher Nash and Dr Jonathon Preston).



## 1. Introduction

The future of urban public transport is a high agenda item as governments seek out more efficient and effective ways of improving the quality of the natural environment. Issues of air quality, global warming and traffic congestion have been important drivers of the agenda for reform of the urban transport sector. As a very heterogenous set of possibilities for change, public transport can be seen in its narrow guise as trains, buses and ferries. In its broader definition it can include taxis, ride sharing and even walking as a recognition that the reduction in single-occupant automobility appears to be a prime focus of arguments offered to revitalise public transport in urban areas.

We take a closer look at some of the challenges facing governments who would like to support public transport if the case for its contribution to urban sustainability (defined in many ways) is proven. The emphasis is on realistically achievable and meaningful futures. We avoid the idea of desirable futures. The latter construct is problematic in that ultimately 'desirability' comes down to a mix of fact and emotional commitment to outcomes which have no guarantee of achieving the objectives the proponent is looking for. The vexed issue of the role of alternative forms of transport, especially different public transport facilities, in guiding the spatial composition of urban activities remains controversial. We argue that each form of transport is simply a medium for delivering urban futures in respect of improvements in mobility, accessibility, equity, air quality, traffic congestion, global warming, residential lifestyle, social justice and so on. The case for each and every form of transport should rest on contributions to these criteria for change, as measures of meaningful futures. Importantly individuals and enterprises must be given choices at efficient prices accompanied by equity compensation packages where justified. We must avoid organising and constraining individuals to support a particular urban structure or transport technology, for example, to make it economical to operate a particular form of public transport which serves the interests of planners, transport operators and owners of property. The role of government is primarily to *manage* this process, and not to meddle in it.

## 2. The Challenges Facing Urban Public Transport

There are numerous reports and papers promoting the virtues and limitations of urban public transport, rail systems in particular, as a panacea for 'solving' the ills of urban society. On the one hand we have the proponents of heavy and light rail arguing that there is a very definite link between the density of cities and levels of traffic (measured in many dimensions such as vehicle kilometres, passenger kilometres, energy consumption per capita); extending their arguments to suggest that the presence of rail systems is an instrument for 'causing' higher densities of urban activity (e.g. Newman and Kenworthy 1989). On the other hand we have the proponents of arguments which do not support any one form of transportation per se, but who look to the historical evidence in various countries, consider the foundations for historical and current pricing and investment strategies and who use a mix of economic, political, cultural and physical planning ethos to guide a view of the future (e.g. Wachs 1993, Hensher 1993). The 'dominating' or growing role of the automobile evolves from this literature.

It is difficult (and maybe not necessary) to classify the two views of the future of urban public transport, but past attempts to do so have suggested (possibly incorrectly) that the two schools of thought are best distinguished by paradigms of the role of physical planning, markets (ie. consumer preferences) and government intervention in achieving change consistent with the broad set of improvements societies are aspiring to. I would suggest that the central issue that should concern us is the extent to which the choices of individuals and enterprises are allowed to influence outcomes, provided the full costs of their actions are paid by the beneficiaries. It is not the intention herein to take a position on these two schools of thought - the debate is documented in many papers such as Brindle 1992, 1992a, Kirwan 1992, Newman et al. 1993, Hensher 1993, Troy 1994, Downs 1992, Breheny 1994 and Lave 1992. Our purpose is to look at the forces at work in shaping urban areas which are important challenges for the future of transport systems in general and urban public transport in particular. The interpretation of outcomes under reasonable assumptions about pricing futures suggest diverse futures for each form of public transport.

## **2.1 The Changing face of urban society**

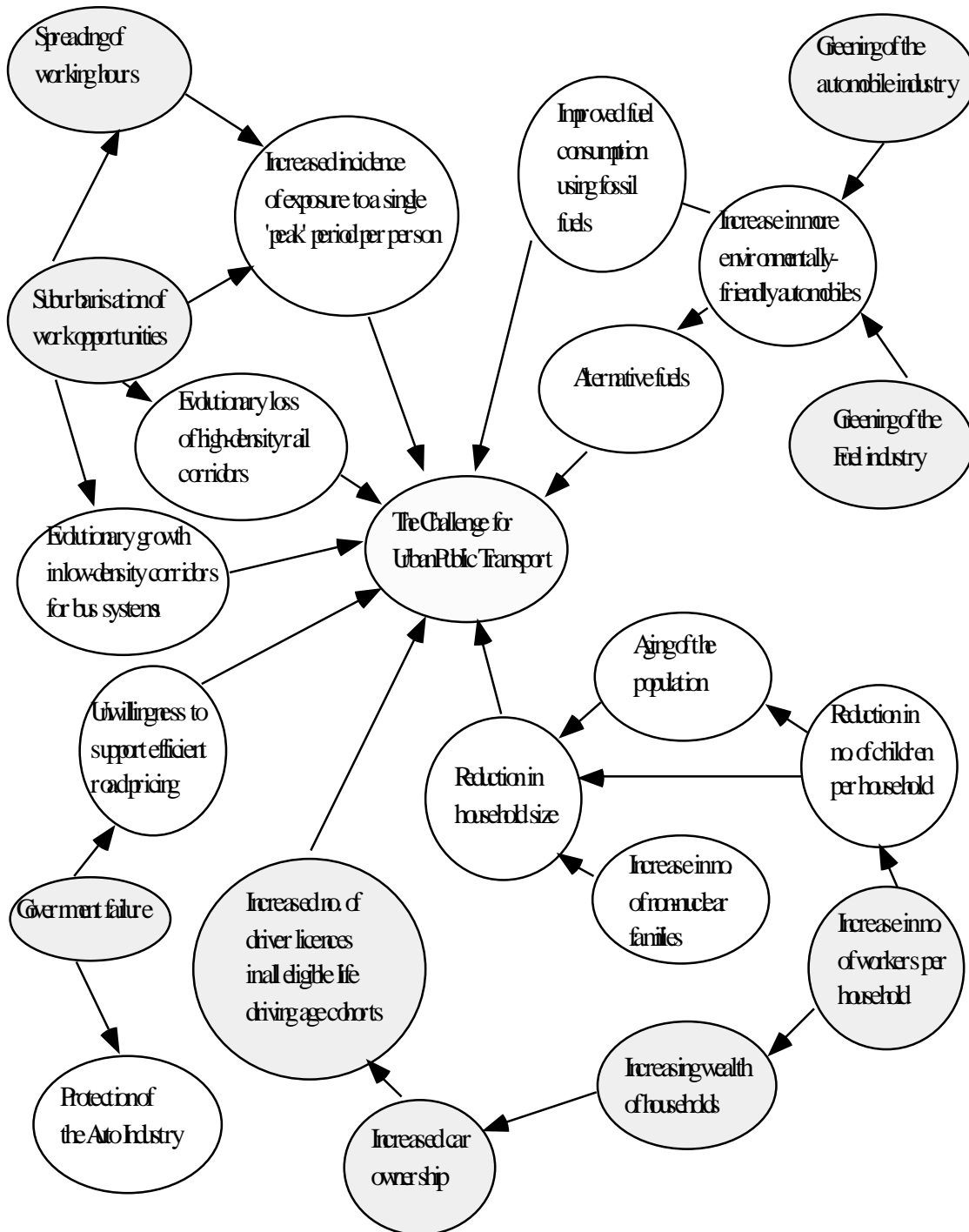
Figure 1 provides a synthesis of some key elements of the changing face of societies throughout the western world which are impacting on the future of urban public transport. These evolutionary changes are as applicable to countries with historically stronger urban public transport such as many Western European countries and Canada, as they are to countries which have run down their public transport in the last 50 years and are now trying to reverse this trend. The USA is the notable example. The key influences on change in the urban passenger transport sector include the changing composition of the labour force and work schedules, the suburbanisation of work opportunities and the accompanying loss of high-density mobility corridors (but an increasing number of low density corridors suitable for bus systems), the changing incidence of the population in each life cycle stage, the commitment or lack thereof from government to pricing and planning/regulatory reforms, the growing awareness and acceptance of user or beneficiary charges, and the greening of the automobile and energy sectors.

## **2.2. The Western Europe Myth: “Don’t look to the USA, look to Europe for guidance on the Future of Urban Public Transport”**

The encyclopedic account of tradition and transition in European travel patterns in Salomon et al. (1993) portrayed as a ‘billion trips a day’ shows an increasing rate of growth of car ownership (in fact nearly three times that of the USA - Lave (1992)), declining household size, suburbanising residential location and the decline of the central city as the dominating focus of activity. The annual growth rate in personal mobility from 1970 to 1987 associated with private modes in Europe varies from a low of 1.7% in Sweden to a high of 6.8% in Portugal (with most countries around 3%). The use of public transport grew at a negative rate in the U.K. (-.9%) and Belgium (-.4%) and up to 3.6% in Denmark (with most countries between 1% and 2%) (Bovy et al. 1993). The share of mobility contributed by the private car increased from 79% to 83% during this period. Italy has one of highest modal splits for urban public transport (26%), with a low of 4.8% in the Netherlands, and a typical percentage share of 11-19% throughout Western Europe. The 1991 Sydney Travel Survey shows a train share of 3.7% and a bus share of 4.3%. These downward trends in use of urban public transport are aligned with the reduction in the proportion of all work trips to the central core of major urban areas. These trends are



strong and consistent with global evidence that such phenomena occur as the wealth base of the population increases. If one accepts the Newman-Kenworthy density hypothesis, this is not good news for forms of public transport which require high density traffic corridors to justify both the continuation of existing services, enhancement by new investment and the application of *justified* subsidy based on community service obligation or what might be better referred to as *urban distributive justice*.



## Figure 1. The Challenges for Urban Public Transport

### 2.3 Is the current debate on the future of particular forms of urban public transport distorted?

Should we attempt to slow down the key determinants of mobility and accessibility? What is the gain in so doing? Many of the changes to date may be an efficient response to the accumulating benefits derived by new opportunities. Is the name of the game to suppress opportunities or to force-channel the opportunities to particular forms of transportation which may not be able to deliver as efficient and effective service for the same ratio of benefits to costs? Suppression of opportunities should be discouraged. Redistribution may be appealing; however the real future of expensive forms of public transport may never be adequately determined with the current regime of myopic planning horizons (a maximum of 25 years is legally possible in many countries) and high real discount rates which require an early return of the benefits. Maybe however the dynamic nature of urban activity and the influence of technological innovation is such that any static planning constructs are doomed to fail, no matter how far into the future we apply them and what discount rate we select.

Who would have suggested 25 years ago that the micro-computer, the fax, the mobile phone, the incidence of women in the work force, the huge improvements in the fuel consumption of automobiles and the development of 'just-in-time' opportunities in retailing, the blurring of the boundaries between retailing and wholesaling, 24 hour shopping and extended weekend hours would have had such an important influence on the patterns of commuting and non-commuting activity? One important message that comes with this commentary is the need to keep options open in the planning process. Another way of saying this, given that decisions do have to be made and funds committed, is that transport systems (and planning processes) which are flexible in terms of adjusting to accommodate changing patterns of spatial and temporal activity will be of greater value to societies experiencing continual change. Urban areas will always be in a state of change. Fixed-track public transport systems are at an inherent disadvantage - they signal the inevitable need for some substantial financial support unrelated to the ideals of community service obligation and environmental protection. Furthermore they absorb substantial sums of money which might have been better spent on other more flexible forms of public transport. So we get a double whammy.

Arguments currently used to defend additional investment in rail systems (be they heavy or light rail) in preference to technologically advanced bus systems (eg bus priority systems) appear to be on extremely shaky ground. Hensher and Waters (1994) document the arguments and reject the position taken by advocates of rail systems in preference to bus *systems* that only a rail system can ensure permanence and visibility of public transport. We do however recognise the perception that buses have an image problem compared to rail; but that this can be overcome. Hensher and Waters also question the view that rail systems alone have desirable properties in respect of urban structure; we

would argue that all forms of transport can have desirable (and sometimes undesirable) properties in respect of the criteria for contribution set out at the beginning of the paper provided we price right, regulate properly and allow individual's preferences to influence the final outcomes.

A conclusion from the available evidence is that *any* transport infrastructure investment will have a significant impact on land use where it contributes in a non-marginal way to accessibility, regardless of its nature. For example, Ottawa and Curitiba (Brazil) introduced extensive busway systems accompanied by legislation. Ottawa's legislatively mandated land use and transportation plan gives precedence to public transit over all forms of road construction or road widening, with planning regulations requiring developers to concentrate developments near transit, to orient buildings and private access to transit stops, to provide walkways and transit-only roadways through developments, and to enter into agreements with the municipality on matters such as staging construction to accommodate transit. Curitiba, a city of 1.6 million located 400 kilometres south west of Sao Paulo, implemented a master plan in the late sixties which restricted high-density growth to several slender corridors radiating from the city centre. The traditional core has given way to a cluster of high rises and scattered outlying development with all tall buildings arrayed along five transportation axes. Express busways occupy the median of each road. To achieve this, the city brought or condemned a substantial amount of land along or close to the transportation axes and enacted zoning regulations that restricted high-density development to a two-to four-block corridor on both sides of the road. Flower street, an auto-free downtown pedestrian zone was created, banishing cars in a 17-block area.

*A Lesson:* a metropolitan strategy can embed an effective bus-based system within its overall land use/transport plan which can produce the same types of impacts as rail. What is required is enabling legislation with a mandated urban form/transport plan which explicitly prioritises the role of bus-based systems. This whole process of strategy planning must recognise that the objective of promoting public transport per se is fallacious - just as the promotion of particular land use patterns and urban form is fallacious. The key issue is the establishment of planning frameworks which enable us to identify directions of change which are consistent with 'moving in the right direction' with respect to the agreed set of criteria that define progress (without necessarily knowing the extent and timing of the impacts); and furthermore that the planning process is sufficiently flexible to adjust over time for technological progress and changing individual preferences consistent with 'correct' pricing signals. It must be stated that establishing consumer choices under a regime of efficient prices does not solve the investment decision - this must be decided on broader benefit-cost criteria, including an allowance for the very real possibility that information available today on technological opportunities, social norms etc. is not sufficiently reliable to give a meaningful description of the future. The 'solution' then is the establishment of flexible transport options which can readily adapt to the evolving changes in consumer demand.

To what extent then can changes consistent with sustainable mobility be best achieved by massive investment in rail systems, and/or road systems and/or through the encouragement of other strategies focussed on broader objectives such as spatial and temporal changes in workplace locations and working hours (Hensher et al. 1994).

## **2.4 The fear that road pricing will emasculate the rail system under likely funding regimes, even though it will raise lots of dollars**

Location-specific road pricing where the wider set of costs of using the system are recovered from users has been promoted by economists for decades. The technology to implement it is now available; what is missing is the political will, although in some countries it has progressed to trials. One *fear* of the consequences of road pricing is that there will be a massive switch to public transport. Meersman and Van de Voorde (1993) suggest that if 10% of Belgium car users were to switch to the train, the capacity of the rail system would have to increase by no less than 75%, implying very serious financial consequences. This is unlikely to occur. Small (1991), in evaluating what might happen in terms of the type of adjustment that our societies will make to diminish the potential adverse environmental impacts of transportation activities, concludes that “*People need not and will not choose solutions that reverse the trends toward increased mobility via personal vehicles*”. It is likely that peak spreading, exposure to single peak period for commuting and the relocation of activities are already acting to improve the efficiency of the existing transport infrastructure - especially the road network.

Currently the levels of service offered by rail systems to those using the car carry a much higher generalised cost of travel than the car trip. To entice switching if that is deemed desirable, levels of train service in terms of in-vehicle and interchange times will have to be increased substantially to ensure that the increased net disutility associated with the use of the automobile attributed to higher monetary costs but improved travel times is more than offset by the elimination of the disutility gap. For this to happen in the rail context, massive investment in urban rail systems will be required.

The revenues from a congestion pricing strategy however are likely to be so large (Goodwin et al. 1991) that for the first time there will be sufficient *annual* funds to offset negative impacts, promote social goals and obtain political support from interest groups (Small 1992). For example, for automobiles only (i.e. excluding trucks and buses), approximately \$4bn per annum for all of Australia’s capital cities would be available (based on a congestion charge of 10 cents per kilometre). This approximates the current annual receipts from fuel and sales taxes on automobiles. Current taxes are not strictly charges (indeed the debate on the incidence of a charge and a tax is still open). Consequently the case for earmarking back to the transport sector must allow for some amount of revenue from congestion pricing going into consolidated revenue where there is substitution with current sales and fuel taxes. A congestion pricing scheme is unlikely to be revenue neutral from a government point of view, in respect of lost revenue from reduced sales and fuel taxes. Some of the revenue can substitute for general taxes now used to pay for transport services, but a significant visible amount should be allocated as monetary reimbursement to travellers as a whole and to the provision of new transport services. The Federal and State governments will be no worse off; they almost certainly will be better off. Small (1992) proposes that two-thirds be earmarked to transportation users and facilities.

## **2.5 Greening of the automobile and energy sectors**

The greening of the automobile and fuel industry has been progressing quite markedly in the last 10 years, even though there is still a long way to go. The most notable improvements in fuel consumption (litres per 100km) have occurred in the USA from a dismal base of nearly 17 litres per 100 km in 1970 to 12 litres per 100 km in 1990; approaching the European average of 9 litres per 100 km (Schipper et al. 1993). Fuel consumption alone however is not an adequate indicator of the ‘greening’ process for automobiles - the patterns and intensity of automobile use must be considered. Given fuel prices, an improvement in fuel consumption is expected to increase the demand for vehicle kilometres, *ceteris paribus*. Although the net effect is likely to be a reduction in fuel use per capita, greening of the

automobile without support from efficient vehicle use charges ( or a vehicle quota system and/or a weekend car scheme as introduced into Singapore - Olszewski and Turner 1993) will only support further automobile ownership and use. This is not necessarily bad. This has implications for the role of public transport. Relatively higher fuel prices in Europe as a ratio of public transport fares is one important contributor to the higher share of urban commuting by public transport. However the gap is closing on modal shares for other reasons.

## 2.6. Looking for Niches: Now you are talking sense

Why do we continue to subsidise *all* urban public transport users so that we can transfer benefits to the sub-population who create the need for a community service obligation (CSO)? Or is a CSO a reflection of a broader obligation which has arisen through government failure to assist the market to operate under efficient *social* prices on all competing modes and to include these efficient prices in an investment appraisal which might guide the selection of price-efficient passenger transport investments? This is not an easy set of questions to answer. The position here is that until market efficiency of the first best type is permissible the second-best competitive efficiency pricing regime is used to justify low public transport fares. Consequently we have a mixing of inefficiency and redistributive injustice in our fare structures.

The international and local evidence tells us repeatedly that individuals most likely to use public transport are school children, households with low household incomes (but not necessarily low personal incomes for multi-worker households), a declining proportion of the elderly (those without drivers licences or who are physically unable to drive and who have limited access to support networks which provide private or community car-based transport), those who have no automobile available in the household, who live in a central city and work in or adjacent to the central business district, and who live in a densely settled area. In the context of the commuting trip, workers satisfying these criteria typically exhibit a public transport use in excess of 70% in many cities. Such workers however are a declining percentage of the workforce. For example, in the USA they are 4.7% of all commuters in 1980 and even less today. In Western Europe in large cities such as Paris we find that the share of commuters living in/near and working in the central city is 17% and declining, with massive growth of commuting from persons living and working in the suburbs - 48% of commuters in 1982 (Jansen 1993).

Pushkarev and Zupan (1977), a much cited book by proponents of rail systems state on pages 172-73 that "...from the transit viewpoint, it [would be] much more 'profitable' to gain riders either from restraints on automobile use or from increased density of urban development". Wachs (1993) argues that while traffic reduction by urban density increases has become increasingly popular among environmentalists and urban reformers, many scholars have demonstrated that low density development patterns do not necessarily result in heavier traffic congestion. There is little empirical evidence which persuades many that this approach is fundamentally sound. Authors such as Newman and Kenworthy "demonstrate" that higher density cities generate fewer trips and lower energy consumption per capita than lower density cities. They show this by comparing different cities at one point in time at various stages in their historical development, rather than tracking particular cities over decades. This runs into the problem of ecological correlation or spurious causality. An ecological fallacy is the product of falsely inferring that what is true of different ecologies or groups (ie. a comparison of cities at a point in time) is true of individuals (ie a city over time):

“[In Newman and Kenworthy] ...Los Angeles is compared with Hong Kong or New York in order to reach the conclusion that density can make the intended difference, but there is no guarantee that the adoption of Hong Kong or New York style densities [any more than Singapore’s car quota system] would result in the intended outcome. In fact, most of the high density cities which are cited as examples were major metropolises long before the coming of the automobile, and over time they are becoming less dense as lower density suburbs are added at their peripheries and as higher rates of automobile ownership occur in these cities in response to rising incomes” (Wachs 1993, 348).

Two of public transport’s most natural markets, relatively low income inner-city residents and high income commuters accessing medium-to-high density corridors leading to the central business district need niche treatment. Expanding public transport rail services far into suburban areas in contexts where we are losing the dense corridors linked to a major destination is precisely what has the least market potential. Improving bus services however may have a more appealing role. Investing in new rail systems as *an isolated strategy* is a very expensive way of attacking the general problem. The results where this has been undertaken in urban areas with a dominating automobility have been disappointing - low ridership, and debilitating subsidies (Hensher and Waters 1994).

The blue line in Los Angeles is indicative of an outcome. The Blue Line has a taxpayer cost of \$US21 per rider per day. Since few of its riders are former drivers (as opposed to bus users), the system costs taxpayers \$US37,489 per year for every car it currently removes from the freeways. A comparison of the life cycle costs of providing bus services compared to light rail in Los Angeles (using the construction and budgeted operating costs of the LRT Blue Line) leads to a conclusion that for the same level of funding, Los Angeles can either afford to build and operate the Blue Line for 30 years or operate 430 buses for 33 years, including the cost of building the operating divisions to support these new buses. For the same cost, however, the buses would produce over four-and-one-half times as many passenger kilometres and carry over nine times as many passengers (Rubin 1991). This result is reached even though the assumptions made tended to favour the Blue Line on several important issues. Buses, especially bus priority systems are 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.

## **2.7 Changing Work Schedules Will be a Challenge to Urban Public Transport: The Income and Convenience Effects**

Working hours are spreading, with a growing proportion of shorter working hours and a growing incidence of longer working hours (normal plus overtime) (Hensher et al. 1994). This is spreading across the genders. The reduction in travel time associated with shorter working hours contributes to reducing traffic congestion (at least in one of the peak periods); the extended working hours have the same effect, notably in the evening peak period. The increased time available for non-commuting by part-time workers will contribute to an increase in off-peak vehicle use and hence help to flatten the peak. That is, we are likely to see a flatter profile of vehicle kilometres by time of day throughout the day. This is a desirable outcome for road investment, contributing to making better use of the infrastructure, subject to optimal capacity being in place. The program of future investment in public transport (and roads) will need to take this into account. One of the major ways people respond to

congestion is to decentralise their jobs and residence. The paradoxical finding for the road system is that even while congestion on specific facilities has become worse, the average speed encountered by commuters has not.

At the same time that work practices are loosening up, more and more jobs are being suburbanised in part due to firms (ie. jobs) following people. The shorter work trips will also spread over an even longer 'peak'. The combination of increased flexibility in work schedules, job suburbanisation and peak spreading will work against the future of public transport, especially rail public transport which requires a relatively dense corridor of movement activity to be economically and environmentally sustainable. Radially biased high density public transport corridors are losing their growth opportunities, even though preserving in many instances their patronage. The automobile will continue to preserve its dominating role.

## **2.8 If an Objective of Improved Public Transport is to Contain Urban Density in the interest of Improving Mobility, it may be Misjudged**

A most noticeable observation around the world is that at the same time that urban densities are declining, the average commuting time has remained relatively constant. Shorter trip times are spreading across both genders for an increasingly higher proportion of commuters. The growing incidence of part time work, primarily by females has compensated the increasing traffic congestion to keep average work travel times relatively constant over the last 20 years. The 1971 Sydney Area Transport Study for example, reports an average commuting time of close to 25 minutes, similar to the mean of 25 minutes from the 1981 Sydney Region Travel Survey. An exposure survey undertaken on behalf of the Federal Office of Road Safety shows that the average trip length in 1986 of a male worker in Sydney was 28.7 minutes when full-time employed and 25.2 minutes when part-time employed; for female workers the respective averages are 25.5 and 23.9 minutes. The average travel time in 1986 was 27 minutes, supporting the stability of mean commuting trip times over time.

## **2.9 Look what I did - I introduced congesting pricing and implemented regulations designed to ensure that the environmental costs of travel actions were covered**

The story goes something like this: "... when I said that I had built a light rail system, a major toll road, a bus interchange and it cost \$x million there was a sense of achievement. A politician even had her name engraved in a monument to record the opening of the facility. Congratulations all round. However when I introduced congestion pricing and a range of regulations to ensure the protection of the environment, the cutose was not forthcoming." The net benefits to society were however much greater, but hardly visible to the same extent - after all the efficiency of the actions yielded revenue - it had less concentrated evidence of spending the taxpayers money. This in essence is a dilemma facing governments.

### **3. What is the main message?**

The future of urban public transport as an efficient and effective way of providing transport services must recognise that in the main it is a provider to niche markets. These markets may be sizeable. The set of current markets should not be held onto and used in the argument for expanding the network. The links between particular forms of public transport, land use and the protection of the environment appear to be quite weak and seem to be getting even weaker as transport systems mature, and transport decisions decline in importance as an influence on location decisions. The salient issue which must be better understood in the debate is that all forms of infrastructure and associated service levels can have outcomes which move societies in the right direction in respect of the criteria for assessing the contribution of transport systems to the performance of urban areas. Central to achieving beneficial change is the establishment of the right pricing and regulatory signals. Consequent to this, the preferences of individuals and enterprises should be allowed to evolve and be revealed through choices in the market. The importance of choice rather than blind commitment to particular technologies should be paramount.

To ensure that the planning process is sufficiently flexible to accommodate the uncertainties of the future, it is important that transport investment be itself flexible in nature and able to adjust to changing needs within a framework of efficient pricing and regulatory signals. When the changing spatial, temporal and socio-demographic patterns are fully digested they throw up very strong signals about the future of fixed-track systems compared to flexible forms of public transport. As we improve our understanding of the links between public transport, urban activity densities and environmental impact, we find the debate on the future of rail public transport as a significant panacea extremely fragile. The broader set of less expensive public transport options (bus priority systems in particular) become very appealing.

### **4. Conclusion**

The adage that "buses are boring, cars spell congestion and trains are sexy" is sufficient reminder that the shallowness of much of the debate on the future contribution of particular modes must not be driven by the technological deterministic dreams of the past or the future.

In this opening address we have canvassed a large number of behavioural and institutional issues which suggest a way in the future. Some of the arguments reflect a path into the future which is almost irreversible, especially the changing socio-demographic profile of the population, the changing spatial and temporal arrangement of urban activities, and the greening of the automobile and energy sectors. All of these developments give the community greater choices than they have ever had before for mobility and location. They also give greater challenges to urban public transport to establish a role. Urban public transport is becoming a supplier of niche services, despite the continued emphasis on providing across-the-board-services. There is no evidence to support the view that one form of transport is any more effective in promoting alternative urban forms and densities - indeed the central stimulus is embellished in a commitment to legislate land use reform as a package with particular forms of transport infrastructure.

The more uncertain aspects of the future which are a necessary element in the establishment of choice outcomes, which are both productively and allocatively efficient in the wider sense of capturing (ie.



internalising) the externality effects of decisions currently made under ‘failed pricing’ and ‘failed regulations’, are the introduction of transport user charges across *all* passenger modes, the specialisation of equity adjustments directed to those in genuine need of assistance, and the implementation of regulations to ensure that environmental protection is achieved. Another uncertainty is the continued risk of technological determinism directing urban development rather than technological innovations occurring in response to particular demands. The continued blind commitment to light rail systems in many countries is a good example of this concern.

Public transport operators have got to be more flexible in moving in and out of markets in response to changing opportunities and needs. The ‘stiffness’ of most public institutions and the absence of a real market test at present continue to assist in preserving deep-culture-centred practices from the past.

There is an institutional challenge for urban public transport to seek out opportunities to investigate alternative ways of engendering efficiency and effectiveness of service provision. A start has been made, but there is a long way to go. The careful development of arguments centred on all possibilities must continue alongside any innovative efforts to undertake real market tests. The final chapter must remain open for some time.

# COMPETITIVE MODELS AND IMPACTS: Workshop 1

**John Preston (Chair) and Gabriel Roth (Rapporteur)**

## 1. INTRODUCTION

Taking his cue from Chadwick (1859) that "where competition on the ground is impossible, an auction allows competition for the ground" the Workshop Chair proposed that the discussion focus on three types of competitive models; namely:

- °Competition in the market - competition for customers
- °Competition for the market - competition for franchises
- °Competition between markets - e.g. bus versus private car.

The Workshop considered the impacts of each of these competitive models for each sector of the transport industry and offered a normative assessment of the most appropriate, in economic efficiency terms, model or models for each sector. In section 2, we shall briefly summarise the eight papers presented and classify them with respect to the three models of competition identified above. In section 3, we outline some of the impacts of competition and make a preliminary, and tentative, assessment of the competitive models. In section 4, we list some of the issues that arose out of the workshop which require further research.

## 2. COMPETITIVE MODELS: THE WRITTEN EVIDENCE

Seven of the eight papers could be categorised in accordance with our competitive models' taxonomy. The exception was the paper by Peter White which, in reviewing the longer term impacts of bus and coach deregulation in Britain, touched on all aspects. This paper was presented as the fourth of a series, following similar reviews at the three previous conferences. Despite the reference to Britain in its title, the paper also touched on developments in Chile, New Zealand and Scandinavia. It concluded that, for local buses, deregulation seemed to have resulted in increases in capacity rather than in the reduction of prices, although for express coaches there was some evidence of price reductions.

### 2.1 Competition-in-the-Market

Two papers dealt with this aspect; a theoretical treatment by John Brander and B. Cook and a practical one by John Diandas and Gabriel Roth. Brander and Cook base their analysis on a study of the market (i.e. cross entry from existing firms) and industry (i.e. entry by new firms) contestability of the deregulated North American air transport industry. They identify three impediments to contestability; infrastructure access, product differentiation and sunk costs. They conclude that while the case of ultra-free entry may not apply, the threat of potential entry would be sufficiently strong as to modify incumbent behaviour. However, they conclude that potential and actual competition will lead to excess capacity because marginal opportunity costs are associated with the value of the industry's average product rather than the value of its marginal product. This conclusion appears to be consistent with the empirical findings of Peter White's paper and the theoretical predictions of

models of spatial competition developed by, amongst others, Evans (1987). Brander and Clark believe that welfare maximising behaviour will be characterised by exclusive rights rather than open access. Does it follow that deregulation, unless constrained by external factors, cannot result in efficient transport solutions? This topic might merit further discussion in future conferences.

## **2.2 Competition-for-the-Market**

Four of the papers focused on this aspect, based on recent experience, mainly from Australia and Britain. John Preston and Gerard Whelan reviewed the franchising arrangements for British Rail services. They highlighted problems concerned with the competitiveness of the bidding process, the efficiency of the winning bid, incumbency advantages, contract specification, contract award and contract monitoring and control. They developed a bidding model that suggested that the size and type of contract, the degree of exclusivity and the degree of regulatory control would greatly affect bids (expressed in subsidy required per annum) but that contract length would not. They tentatively concluded that franchising rail services was likely to be more difficult than the franchising of bus services.

Three papers described the reforms based on competition-for-the-market being undertaken in Adelaide (South Australia) and Perth (Western Australia). Adrian Gargett and Ian Wallis described the reforms being undertaken in Adelaide. The principle aims are to introduce competitive tendering and contracting and reduce subsidy levels by 25% over a 5 year period. The State Transport Authority has been re-organised so as to separate purchasing functions (invested in the Passenger Transport Board) from providing functions (invested in Trans Adelaide). An exhaustive review of contracting-out options was undertaken, including geographic specification (routes, corridors and areas), service specification (timetable, headway and frequency only) and funding specification (commercial (i.e. fixed rate per passenger or passenger km to ensure commercial viability), net subsidy, gross cost plus an incentive, gross cost and unit resource (i.e. fixed rate per bus hour or bus kilometre)). These options were assessed by decision makers against a range of desired outcomes. The preferred specification was area-based contracts based on minimum service level specifications and funding via a gross cost plus incentive formula. The first tenders are expected to be awarded in September 1995 and it would be informative if a report on the Adelaide (and Perth) reforms could be made to the next conference.

Perth has enacted a similar reform process to that of Adelaide in that there has been a separation of the planning and operations functions. Separate papers were presented by Tony Middleton (Department of Transport) and Mike Wadsworth (Metrobus). The main differences between Perth and Adelaide appear to be that in Perth 100% of the vehicle fleet remains in the ownership of the Department of Transport (with fleet management undertaken by Metrobus) in Adelaide slightly over 50% of the vehicle fleet remains in the ownership of the Department of Transport. In both cities, operating contracts have been chosen because of the lack of an established private sector and the fact that the fragmentation and privatisation of the existing public sector operators have at this stage been rejected. In Perth so far, one ferry service and two area bus contracts have been awarded.

## **2.3 Competition between Markets**

The paper on airport access in Japan, by Kazusei Kato and Yasuo Sakakibara, described how the high cost of land, the respect for individual property rights and the engrained habits of the concerned ministries conspired to impede access to Japan's airports. Airport parking charges were identified as a major factor in affecting the choice of travel mode, and their high level, combined with heavy and unpredictable congestion on the roads appears to favour rail access.

Another form of competition between markets, that of yardstick competition or competition by emulation, was mentioned in the papers by Tony Middleton and Mike Wadsworth, In Western Australia, benchmarking studies have been undertaken to indicate world best practice in public transport costs to which operators in Perth should aspire.

### **3. COMPETITIVE IMPACTS: THE WRITTEN EVIDENCE**

The papers presented had only a limited amount to say about the impacts of competition. A number believed that the introduction of competition would reduce costs and could, given constant subsidy levels, lead to improvements in service quality, principally through increased frequencies. In the UK deregulation debate in the mid 1980s, proponents of the reforms had indicated the potential of increased competition to reduce fares on the best-used routes through the elimination of cross subsidy and, therefore, to lead to increases in patronage. However, some members of the workshop were unconvinced that reduced fares and increased patronage were unequivocal benefits.

The paper by Adrian Gargett and Ian Wallis identified two economic efficiency impacts of regulatory reform, namely:

- °Productive efficiency i.e. minimising the costs of providing a level of service - doing the thing right.
- °Allocative efficiency i.e. providing the optimum combination of services and fares - doing the right thing.

They argued that competition-in-the-market is unlikely to increase allocative efficiency as pricing is likely to be based on average cost which will be greater than the marginal social cost of bus travel, if the benefits of increased frequency for users and the relief of congestion on the road system are taken into account. They also suggest that competition-in-the-market may not deliver integrated services (particularly between different public transport modes), ticketing and information.

In Table 1, we present a tentative, and by no means unanimous, assessment of the impact of competitive models on different transport sectors. The deregulation of the US airline industry and the UK coach industry, as discussed by Brander and Cook and by White respectively, were believed to be successful in that service levels and patronage have generally increased and fares and costs had reduced. There were believed to be both productive and allocative efficiency gains. It seemed that much of these gains resulted from actual rather than potential competition. There was a general belief amongst the workshop that the concept of perfectly contestable markets, as envisaged by Baumol, does not exist in practice.

#### **Table 1: An Assessment of the Impacts of Competitive Models**

MODEL	EXAMPLE	IMPACTS (+ Increase o No Change - Decrease ? Not Clear)				
		Fare	Service Levels	Cost	Patronage	Net Benefit
COMPETITION- IN-THE-MARKET	US - Airlines	-	+	-	+	+
	UK - Express Coaches	-	+	-	+	+
	UK - Local Buses	+	+	-	-	-
	Sri Lanka - Local Buses		-			-
COMPETITION- FOR-THE MARKET	London - Local Buses	+	+	-	o	+
COMPETITION- BETWEEN- MARKETS	Japan - Airport Access Perth - Bus			-	+	? +

The deregulation and privatisation of the UK local bus industry and the deregulation and 'peopleisation' of the Sri Lanka bus industry, as described by Peter White and by John Diandas and Gabriel Roth, have led to substantial small group (UK) and large group (Sri Lanka) competition. This competition-in-the-market seems to have had mixed success. In the UK, costs have reduced and service levels increased but fares have also increased and patronage has declined. In Sri Lanka, there appear to have been problems associated with service quality. The workshop tentatively concluded that competition-in-the-market appears to work well for long distance, inter urban markets. It appears to work less well for short distance urban (and rural) markets.

Empirical evidence presented to the workshop on the success of competition-for-the-market was restricted to the data on London presented by Peter White. Here service levels have increased and costs have reduced. Although fares had increased substantially, patronage had been relatively stable. This seems to suggest that there have been gains in both productive and allocative efficiency and the reforms have been a success. An important empirical issue is the extent to which competition-for-the-market can lead to cost reductions in comparison to competition-in-the-market. Another issue is the extent to which competition-for-the-market needs to be accompanied by industry re-structuring (e.g. the break-up and privatisation of large publicly owned monopolies). The workshop noted that the reforms in New Zealand should provide important empirical evidence on the role of competitive models but that assessments appeared to be hampered by a lack of data at the national level.

Evidence on the success of competition between markets was the most limited of all. Kato and Sakibara's paper illustrated that increasing the costs of car use can dramatically increase public transport's market share. Mike Wadsworth indicated that benchmarking had assisted in re-organising Metrobus so as to achieve reductions in operating costs.

#### 4. FUTURE RESEARCH AGENDA

The workshop, and the discussion stimulated by the workshop, identified a number of issues for the future research agenda. The workshop chair has summarised these issues below and offers them as ten commandments for future research conferences.

1. The workshop concluded that competition-in-the-market appears to work for inter urban passenger transport but does not work so well for urban transport. Further empirical evidence is required to confirm or deny this proposition. If this proposition is correct, explanations are needed as to why it is correct.
2. Evidence presented to the workshop suggested that competition-in-the-market has a tendency to lead to excess capacity and to fail to take into account (in economics' jargon, to internalise) user benefits. The greater concentration of transport demand in space and time for urban markets compared to inter-urban markets means that the dangers of monopolisation are greater for urban markets. Further work is required to illustrate these problems in such a way that they can be readily assessed by policy makers.
3. On balance, the workshop concluded that competition-for-the-market may be more appropriate for local transport markets. Work should continue in collating empirical evidence on the performance of competition-for-the-market models. However, there is a range of options for competition-for-the-market including concessions, tenders and franchises. Further work is required in order to classify the different competition-for-the-market models and standardise terminology. The key issue for models of this type is to improve, or at least maintain, service quality whilst driving down costs. If the first conference held in Thredbo (Australia) in 1989 (Thredbo #1) was about increasing public transport patronage, members of the workshop thought that the catch phrase of Thredbo #4 (Rotorua, New Zealand) should be "Value for Money". In order to improve quality, contracts need to be properly specified.
4. Further work is required to determine contract specification. The workshop identified a number of issues in this area, including:
  - °Contract length. For the local bus industry, 5 years was thought to be an appropriate length.
  - °Contract type. Here the main controversy appears to be the gross cost v net subsidy debate, although with the introduction of incentives to gross cost approaches the divisions between the two types of approach are becoming somewhat blurred. The debate focused on bidding in terms of cost to provide a certain quality level. An alternative approach of bidding in terms of quality to provide services of a given cost level, as being practised in the Netherlands, should be considered.
  - °Contract size. Here the main debate is between route based contracts and area-based contracts. It appears that the movement of opinion is in favour of the latter.
  - °Contract detail. Here the main debate is the degree to which contracts should be complete (all service and fare details specified by the tenderer). A further issue is the role for operating contracts, where the tendering authority supplies vehicles and other important infrastructure.

Other issues that the workshop touched on included the timing/phasing of tenders, whether tenders should be open or based on pre-selection, the assessment of non compliant bids, what information about bids should be published and matters related to contract enforcement, re-negotiation and hand-over. The scope for a two-envelope system (referred to as Brook's law),

with the first envelope including quality details and the second envelope containing price details is worthy of further consideration as is the extension of competition-for-the-market to the planning as well as the operations functions.

5. In terms of competition-between-markets, at least three areas for future research can be identified. Firstly, it could be that inefficient pricing is distorting the competition between transport and other activities. In part, this may be because transport as a whole may be priced too cheaply. It may also be that complementary activities like low density residential dwellings are too cheap. Further consideration is required of the competition between transport and other rival and complementary economic activities.
6. Secondly, it is likely that inefficient pricing is distorting competition within the transport market. Further consideration is required of the impact road pricing regimes would have on urban, rural and inter-urban public transport markets.
7. Thirdly, yardstick competition may help promote competition within modes. Empirical evidence is required on the effect of benchmarking on individual firm and on market performances.
8. The workshop focused on two sources of efficiency; technical and allocative. A third source of efficiency, dynamic efficiency, should be considered. It may be that here competition-in-the-market models have the edge, although competition-for-the-market models can be designed so as to promote innovation.
9. Furthermore, it should be clear that there is no static solution to regulatory problems. Many countries, including New Zealand, Sri Lanka and UK, have gone through a deregulation - regulation - deregulation regulatory cycle. In at least one country, Chile, the regulatory cycle has moved on to a fourth phase, that of re-regulation, with a prospect of something similar happening in the UK. Future conferences should monitor the progress of the regulatory cycle and consider the extent to which some competitive models may be best seen as transitional and a pre-cursor to alternative organisational structures.
10. In an impassioned plea, one member of the workshop complained that much of the debate resembled vultures around a carcass. This was fair comment in that much of the workshop's debate concentrated on developing competition-for-the-market models which may be viewed as preserving pieces of a dying public transport body. This however is a reductionist view of the workshop's brief. A more holistic view involves not just getting the balance between competition-in-the-public-transport-market and-for-the-public-transport-market right but getting the balance of competition-between-markets correct. In particular, this might involve the development of appropriate land-use policies, and of more efficient pricing mechanisms for the private car and of more efficient mechanisms to allocate investment between private and public transport. The greatest challenge for future conferences is to determine the appropriate models of competition-between-markets.

## USER REQUIREMENTS: Workshop 2

**David Kilsby (Chair) and Nariida Smith (Rapporteur)**

### 1. INTRODUCTION

The aim of this workshop was to expand the decision-making horizons of suppliers and regulators by adding a public transport users perspective. The workshop noted the difficulties of using the umbrella term "users" to encompass the diversity of patrons and their requirements. A sketch of a typical rail platform with older people, youths, schoolchildren, mothers with infants, white collar and blue collar workers, disabled and tourists illustrates the difficulty of generalisations about "the user".

Reflecting this diversity, the papers in the workshop addressed a wide range of issues under topic groupings: Social Policy and Community Service Obligations; Fares - setting and financial impacts; Data and the Market; Quality and the Regulatory Framework. The general conclusions arising from the workshop as a whole complete the review.

### 2. SOCIAL POLICY AND COMMUNITY SERVICE OBLIGATIONS

The delivery of public passenger transport cannot be considered entirely as an efficiency issue. A significant proportion of the population have no alternative means of mechanical mobility and hence objectives of social policy must also be considered. The workshop papers under this topic considered serving people with welfare needs (Radbone), older people (Kilsby and Flynn) and users in general who benefit from "social program" services (Williams).

*Are People with Disability Better or Worse Off in a Competitive Tendered System as Opposed to a Monopoly ?*

The competitive system has the advantage of separation of policy from operation, "the referee doesn't play". A commercial organisation may have a culture more likely to respond to individual needs since that makes good business sense. Plus, where legislation is put in place to ensure competition, protective standards to address the rights of the disabled may be imposed.

However those advantages may be outweighed by the disadvantages. Performance based contracts may not be best for the disabled: the need for faster running times may make service for the disadvantaged awkward. Private firms may be reluctant to invest in specialised equipment or run special services. Moreover the assertion that the private contractor will be more sympathetic to the needs of the disabled than a public sector monopoly operator is not proven.

Radbone's paper concluded with a cautious "yes" to this question.

*Access to Public Transport by the Disabled is a Key Issue.*

Adelaide, Australia, has just faced an employment equal opportunity (EEO) group action over a recent order for new buses. As a result equitable access for the disabled must be provided in new



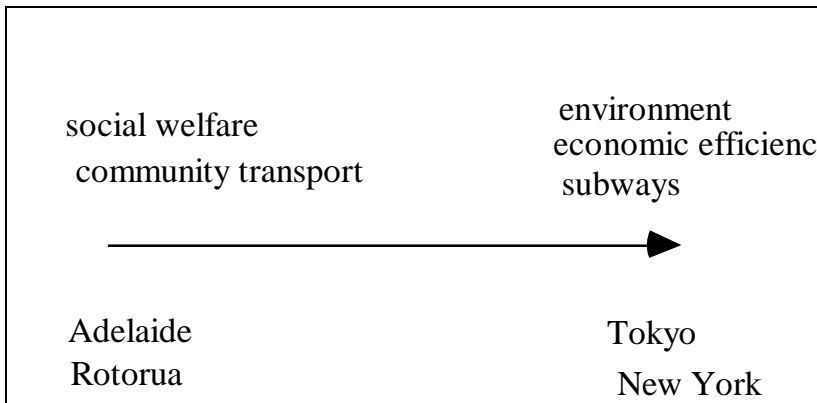
vehicles. Low floor "kneeling" buses with ramps for wheelchairs will be bought. Similar legislative challenges are being faced in other parts of Australia and New Zealand and wheelchair access has been a requirement in the USA for some time.

It was suggested that the tension between equity of access and equity of mobility outcomes has implications separate to the legal and associated financial implications. The impact of special provision on the existing able-bodied customer base should not be ignored. Moreover it needs to be noted that disabled provision needs infrastructure far surpassing that for the bus or rail service.

*Priority Purposes for Public Transport - Social Welfare or the Environment and Economic Efficiency*

The underlying assumption of Radbone's paper was that the Public Transport system should give priority to those who need the service above those who have other choices, in practice use of a car. Public transport should be considered primarily from a welfare rather than an environmental view in many small cities like Adelaide: or, generally, Peter Calthorpe's "Anywheresville". All New Zealand cities also fit into this category. Parking is no real problem, congestion is limited as is air pollution and people prefer cars. Moreover as public transport usually has only a small mode share of passenger kilometres in such cities (9%, or 13% in the peak, in Adelaide), doubling this would only save a few years of road building costs.

Figure 1 illustrates a continuum of priority purposes of public transport. Public transport planning should allow for those differences. For instance in Sweden a three tiered public bus service offers: community transport, the service bus (around the local area) plus trunk route service.



**Figure 1: Public Transport for Cities Continuum**

This view of public transport as principally a social welfare measure was vigorously disputed by some members of the workshop and no agreement was reached.

*Demographic Trends Will Bring Changing Priorities*

In the state of New South Wales, in Australia, extensive consultation with older people has revealed that transport continually features high on their list of concerns. It is the highest priority issue in country areas (Kilsby and Flynn).

Demographic trends show an increasing percentage of older people in the population. The highest growth rates will be in the "old old", where the frailest members of society tend to be found. At the same time policies have been directed at replacing institutional care with in-home services designed to help people to remain in their own home for as long as possible. Such people need door to door service and there is increasing concern of the effect of isolation for people when transport is not available. Similar trends are being experienced in many parts of the world. Provision for the older is a user issue of increasing importance.

Most older people are not frail. Reliance on public transport increases with age - as access to cars is eroded for various reasons - and these people thus need general services, not services tailored specifically for the frail. Older people out of the workforce may still be active but with travel patterns different from other significant market segments.

#### *Targeting Concessions*

The older people who live in the central urban areas in New South Wales are relatively well served by public transport and have very generous concession fares: for example a \$1 ticket allows unlimited travel by bus, train and ferry on the day of purchase. In rural areas provision of both services and concessions is far more limited. Rural residents are particularly concerned about inequity in concessionary availability.

In 1993/94, \$A233 million (of the nearly one billion dollars of social expenditure on transport in NSW) was devoted to concessions for older people, a disproportionate amount going to inner city dwellers and to services run by the public sector. Extending the level of concessions to all forms of public transport would be prohibitively expensive. Moreover in future those eligible for concessions will increase considerably while the working population (the tax base) will not.

Additional expenditure to improve fairness or effectiveness would have to be balanced by economies elsewhere indicating the need for a "package" approach. A more effective allocation of expenditure could result from better targeting of transport disadvantage, from greater equity in distribution and from removal of commercially driven concessions. Greater clarity in the social objectives leading to such expenditure is thus essential.

#### *CSO New Term but Old Concept*

"A Community Service Obligation (CSO) to be financed by government must be a good or service it is in the public interest to supply but which would not be otherwise supplied for sound commercial reasons"

CSO is a relatively new term but public benefit provision has been long recognised. A history of CSO type arrangements over the centuries and around the world from Roman times onward illustrated *old style* delivery with monopoly power of suppliers specifically to allow cross subsidy. This contrasts with *new style* requirements with corporatisation (Williams). Yet if public operators are to mimic the market they should sometimes be acting as monopolists since the private sector does cross subsidise.

#### *An Equimarginal Approach to Subsidy Allocation*

Since transit services are typically in a multi product market there is a problem in allocation of overheads. Fiscal and welfare demands have led to less transport money, and in practice, instead of users being cross subsidised by other users, cross subsidy comes from taxpayers. A move to have CSOs provided by "non-profit" operators may lead to volunteer burn out .

Optimisation of resource allocation so that the benefit received by each CSO beneficiary is equivalent is recommended. In the simplest case, assuming all users equally worthy of subsidy, the subsidy can be based on patronage: ratio of user numbers to costs in each service subsidised to be equal. This addresses allocation once provision is decided as a political issue. Who is to receive subsidy is always a political issue.

### **3. FARES - SETTING AND FINANCIAL IMPACTS**

The thrust of competition and ownership policy to date has been on improving efficiency, i.e. reducing costs. Increasing patronage or revenue or both are also options. Two workshop papers led into discussion of fares. Paulley looked at the influence of deregulation on concessionary fares ; and Jara-Diaz described a practical application of methodology to set differentiated fares consistent with specified objectives.

#### *Impact of Deregulation on Concessionary Fares*

The 1985 United Kingdom Transport Act deregulating bus services in Britain (except London) had a significant impact on concessionary fare provision. The effects were more noticeable to the operators than to the users (Paulley).

*Before the Act:* There was a friendly system dealing with reimbursement of lost revenue as often the local government also controlled the transit system and thus an "all comes out in wash" attitude was taken to money transfer.

*After:* Operations are private and required to be commercial. Any concessionary schemes offered by the local authority are open to all operators in the area. The cosy relationship with local authorities has disappeared. Moreover now the money that changes hands is real money. Free travel is now being abandoned in most areas and replaced with low flat fares. There has been a background decline in usage of concession fares despite an increase in older people in the population. Fewer trips could be due to increased car use but may also be due to the recession limiting unnecessary trips.

#### *Measurement of Trips Generated by Concession Fares*

Regulations specify that "No operator should be better or worse off from offering concession fares". Local authorities, required to provide reimbursement for concessionary revenue lost, are concerned about generated trips since they have the potential to make the operator better off if not allowed for in assessing operator payments.

A survey in the Tyne and Wear area found generated trips by old age pensioners, comparing free and full fare travel, higher than for any other study. Interviews were used to "reconstruct" trips. The journeys were re-costed under hypothetical fare regimes and then the user was asked whether the trip would or would not have been made. The aim was to get a formula for use by local authorities. The findings are not applicable generally, and the lesson for those elsewhere is that under this sort of arrangement a considerable research effort will be called for before the appropriate reimbursement can be established with any confidence.

### *Concession Support for Deregulated Services ?*

In Santiago bus transit is provided by numerous small private operators (10,000 buses, 5000 owners ). They are required to charge one third fare to school children. In practice therefore they choose to carry adults instead of children. This issue is a problem in similar circumstances elsewhere. Subsidy support is needed if private operators are to provide important CSOs that clearly would not be provided for commercial reasons.

### *Differentiated Fares*

The Santiago Subway system has applied a "Metro Optimal Pricing" model (the Spanish acronym is TOM) to set the fares for different user groups by line and time period. In order to do this it is necessary for the public authority to be clear about its objectives for fare policy. The TOM model allows fare settings to be determined for different objectives. Requiring the explicit statement of objectives is a valuable step.

The Metro consists of two cross lines. The area traversed by one of the lines is wealthier than the rest of the city. The contrast in car ownership, for example, is pronounced: 1 car per household in the richer areas compared to 0.25 in the poorer areas. The discrepancy is even greater on a per capita basis because on average wealthier households have fewer members.

Whilst 60% of trips in the city are by bus, 20% car and only 8% by subway, the subway is important as there would be congestion problems - especially in the wealthier area - without it. Moreover the subway was very expensive to build and thus the asset should be used to best advantage. The challenges are to optimise subway use while serving the diverse users at minimum subsidy. Chile is a country with a GDP one tenth that of the USA.

Pricing is determined by an ordered set of objectives: maximise profits, welfare and ridership. An elegant optimisation process sets the fare subject to the constraint that the fare is not allowed to be lower than marginal cost of service. TOM determines fares firstly to optimise profit with solution varying by period and place, secondly to optimise welfare subject to profit and finally to maximise ridership subject to welfare and profit.

The fares set this way cover operating cost and depreciation. There is price differentiation according to line and time period. It was noted the process is simple but data hungry.

## **4. DATA AND THE MARKET**

The increasing diversity of travel markets poses a challenge for operators and public authorities alike. The demands on planning skills and techniques are higher. A session of the workshop looked at uses of one of the most potent tools for planners, the Geographic Information System (GIS). A GIS links data bases to maps via computer software and hardware. The first paper in this topic area (Smith and Xu) discussed the general applicability of such systems to planning a market responsive transit system and the second paper (Matear et al) provided a case study of a planning application in Dunedin, New Zealand.

### *Patronage or Market Potential of Routes*

When new public transport routes or changes to existing routes are proposed the physical viability of the proposal is assessed in terms of track or road geometry and traffic conditions where appropriate. In a competitive climate more than the physical route structure is of interest. The patronage potential, or market potential, of that route may also need to be evaluated. Moreover increasingly wider social or environmental impacts of a transit service must be considered.

A Geographical Information Systems (GIS) application to estimate the patronage potential of bus routes is being developed in New South Wales, Australia, where legislation requires operators to run services linked to the patronage potential of their franchise area estimated from census data and area geometry.

#### *Advantages of Fixed Route Transport*

In our existing cities the best use of existing transport corridors - either road or rail - is very important since the acquisition of new corridors, when it involves acquiring land currently dedicated to other uses, is expensive and disruptive. Moreover "group" transport has many advantages for the efficient response to transport needs in cities. The application of GIS packages to the planning of fixed route/ fixed time public transit systems - buses, rail or light rail - could produce a market responsive system while maintaining the advantages of "group" transport and making good use of existing city infrastructure.

The GIS system can automatically link the route map to a wide range of database information. Therefore there is an opportunity to plan the service taking into consideration a wide range of information from environmental factors to market tastes. Where the service has many objectives a mathematically optimised solution may be intractable but a solution which satisfies criteria at set levels may be a very good solution.

#### *A Case Study from Dunedin*

The application of GIS to resite a bus route to be closer to identified potential bus users. illustrated the complete process from assembly of data sources to final route map.

Data came from on-board surveys, census data, and spatial data constructed for the study. The basic unit for the New Zealand census is the "mesh block" of about 150 houses. Area characteristics of gender, income, age profile, vehicles per household were examined at mesh block level. At the same time passenger profiles were obtained from on bus surveys, which showed that the strongest market demand for the service came from middle age females. A coded network was used to establish average distance to proposed routes and stops for this category of people. A shortest path algorithm within ARC/INFO (the GIS package used) determined the route and stop pattern to best serve the middle aged female market niche.

The temporal robustness of data should be exploited. Unless there is specific evidence to the contrary it is reasonable to use travel and census data spanning 5 years in GIS applications. This is especially true if additional or interim data can be used to validate the current applicability of the older data. GIS allows integration of census, survey data for instance daily travel behaviour and OD flow measurements.

#### *A Learning Curve but Worth the Effort*

GIS packages still require a learning curve, and data transfer into and between packages can be difficult. It would be helpful if GIS packages were used as the platform for presentation and analysis of survey data because integration with other available data sources would be facilitated.

Such market analysis can have considerable financial benefits for transit operations. It was noted that savings of around 15% in resources have been consistently achieved in UK in the past from careful market analysis. Operators in the workshop reported that they already used GIS packages: in one case linked to the automatic ticketing system, and in another as a front end to the operation of route planning software.

## **5. QUALITY AND THE REGULATORY FRAMEWORK**

The final topic area in the workshop was perhaps the most fundamental: how to incorporate the concept of quality into the development and control of passenger transport services. The classic definition of quality is "meeting requirements". Two papers presented views from different perspectives : from Usher, as a bus operator, and Goebel, as a regulator. The conclusions were surprisingly similar.

### *Serving a Diverse Market and the Business*

The diverse market for public transport imposes on the operator a responsibility to innovate and thus provide greater variation in transport supply. Different vehicles - small demand responsive vehicles, midi buses, conventional buses and articulated vehicles - will be appropriate for different purposes.

Transport companies must respond to customers needs for fast, reliable, relatively comfortable and affordable services ; to staff needs for reasonable living standards and secure employment ; and to the owners need for security of investment and an adequate return after allowance for replacement of assets. These are normal business/commercial imperatives for the owners. Public transport companies are not merely the suppliers of government services.

### *Control of Price, Quantity and Quality ?*

When private transport operators take up franchises and/or contract operations there is general agreement that regulation for safety is necessary. Moreover all private companies, should be subject to legislation requiring company probity. Other controls are open to question.

When the government seeks to control the price of the service, the quantity of service to be provided and the quality of that service, the operator does not have much "room to move". Where only price and quantity are controlled the operator is forced to sacrifice quality, for instance using the least expensive vehicle possible to ensure some return. The innovation and flexibility needed to respond to customers is lost. Yet adaptation to increasing diversity in society's transport needs is required, both for the viability of individual public transport businesses and for the viability of public transport in general.

The workshop noted, in response, that Government controls on quantity and quality of service are minimum standards and the operators are free to offer higher standards just as they have the option to charge lower fares. However some of the operators contended that commercial reality limits these

options in practice. The freedom to charge premium fares for higher quality of service would increase user choice provided that the "vanilla flavoured" options were still available.

When setting a fair fare the elasticity of demand for the service by the passengers needs to be considered. A recent survey in Wellington found 51% of travel captive to the service and 49% discretionary.

#### *Multi modal Ticketing*

Multi modal ticketing is attractive to government planners but private operators must see the incentive of increases in revenue to cover increased costs. However if multi modal tickets are of value to the customers new technologies can ease the strain on operators. For instance the distribution of revenue between providers can be facilitated by smart card ticketing.

#### *Security of Tenure and Stability of Service*

The financial issues involved in maintaining the business should be respected by governments. Franchise contracts must consider the capital investment involved in taking up the franchise. Short periods and uncertain tenure discourage investment and innovation and result in a standard service for a market which now needs and demands diversity.

Patronage is helped by stability rather than competition. Indeed where there is insecurity of tenure in a contract operation there is little incentive "to grow the patronage". An operator complained that short term contracts in New Zealand make it hard to think about anything else other than the tendering process especially when there are separate contracts for night and weekend services.

#### *Efficient and Effective Delivery*

It is important that public transport services be more relevant, serve more of the diverse travel needs of the community and in general increase their share of the transport task. At the same time there is a desire to reduce regulation, reduce cost but still respond to issues of access, equity and the environment. Public transport performance has always been dependent on legislative framework and its effect on the mindset of operators. Previously in Queensland, Australia, bus transit was provided by private urban buses with monopoly rights to set areas, with timetables and fares regulated by legislation. A review was undertaken to identify actions needed to arrest decline, allow for growth and reform services. (Goebel)

Policy initiatives sought a commercially viable system with accountability, competition, contestability with government regulations minimised, reasonable levels of access and mobility supplied and restrictions to entry only where that would result in better service. Monopoly licensing was considered but its major disadvantage was felt to be limiting incentives for innovation. In contrast it was feared that complete deregulation would not provide transport equity and the government would have to pay for provision of services to address that problem.

#### *Service Based Commercial Franchise Contracts*

Commercial contracts are currently being let in Queensland on the basis of service performance above set minimum service levels for franchised areas. All costs must be covered by internal cross subsidy. Contracts are for five years with a mid point review and already there is evidence of service innovation. Skill in business management is being promoted by requiring transport management

training for operators and requiring that tenders must be accompanied by a marketing and business plan.

Some concerns: Are the minimum service levels appropriate? Can service levels between franchise areas act as a surrogate for competition? Is the system flexible enough for real innovation? Fares are regulated but can be exceeded for better service. The aim is to leave the fare setting to the market but retain the right to intervene.

#### *Reform must include Private Motor Vehicle Use*

The reforms should be set in partnership with industry with the government seeing itself as empowering rather than regulating. But reforms to the public transport sector will not be complete or fully effective until complementary steps are taken to "right price" motor vehicle use. There is considerable public resistance to any "sticks" associated with "carrot and stick" policies to achieve a more desirable balance between public and private transport. It may be more helpful to think in terms of the removal of bad carrots which unduly favour the automobile.

## **6. CONCLUSIONS & RECOMMENDATIONS**

### **Points of Agreement from the Workshop**

#### *Full Benefits of Public Transport Need to be Measured*

Transport policies on competition and ownership in transport have been dominated hitherto by a focus on reducing costs. There has been less emphasis to date on increasing ridership and revenue or in assessing the broader benefits of public transport.

It is important that cost benefit assessment of individual public transport services, or of the system as a whole, be a full economic analysis rather than a narrow measurement of cost versus revenue. Those benefits may accrue both to the user and to society in general. The overall benefit of the provision of public transport may encompass issues such as cross-sectoral social benefits and the benefits of substitution of public transport for private motor vehicles leading to both local and global environmental improvement. Some of these "externalities" may be relevant in assessing alternative contract structures for, as the workshop noted, the legislative framework can affect issues from provision for the disabled and concession fares to the mindset of the operator -then affecting all users.

#### *Response to Diverse and Changing Markets*

The market for all forms of transport is becoming more complex and fragmented as the population ages, household profiles change, work patterns become more flexible and the number of activities people engage in outside the home increases. Public transport operators need the freedom to respond to such challenges. Authorities need to move from regulation of supply to empowerment to respond.

#### *Passenger Transport is not an Island*

Consideration of public transport must always be set in the context of society's access and mobility needs and the land use patterns associated with these. The qualities of a city's public transport system is an important contributor to urban livability. Therefore the "users" of the public transport system can include all city dwellers. Moreover competition between public transport operators may be much



less important than the competition between public and private transport. It is very important that motor vehicle use be "right priced".

### *Prioritisation of Objectives*

Public transport is called upon to serve a mix of objectives. It may be required to cut cost but at the same time provide more service, provide affordable transport for those unable or unwilling to drive a car and at the same time tempt car drivers to the services to limit growth in motor vehicle use, increase the productive use of road infrastructure and achieve better environmental outcomes. Additionally if run by a private operator the business must make a profit. Attempting to fulfil all such requirements must lead to confusion. Operators and the communities they serve need to clarify their objectives and just as importantly prioritise them as sometimes the objectives may be inconsistent.

## **Issues and Messages**

### *Cars, Development and Progress*

Moving to a car based society should not necessarily be equated with progressive development. In Santiago, Chile, 60% of trips are by public transport, compared to 10% of trips in New Zealand cities but the figure has fallen from 75% and car ownership is growing. The sorts of issues debated in Australasian cities, where public transport ambitions are implicitly for respectable increases on a low base, do not alert civic leaders in cities like Santiago to the consequences of the motorisation they are promoting.

It is vital that large cities substitute public transport use for car use as often as possible in line with promoting "livable way to develop a city". The environmental damage caused by motor vehicles themselves and provision of sufficient highway infrastructure on the built environment must be reversed.

There was no consensus on Radbone's contention that in smaller cities, "Anywheresville", it would be better to concentrate the use of resources on provision of better services for the transport disadvantaged. The disadvantages of motor vehicle traffic are less obvious, congestion and supply are not a problem and perhaps the attempt to win people away from their cars is futile. In other words in such cities public transport should be seen as a welfare benefit rather than an environmental benefit. It was agreed that the issue should be explored further as should the entire concept of provision appropriate to circumstance.

### *Identification and Measurement of Benefits and Markets*

The development of public transport is an increasingly complex task, which calls for evolution in the technical skills of those involved in the design of services and the assessment of policy. In service design, the appropriate grouping of individuals according to needs, tastes and choices is a priority input. The opportunity for public transport to offer attractive choices to individuals can then be maximised despite its difficult cost structures. In policy assessment, the need is to move away from the obsessive focus on cost reduction to a broader framework (but still quantitatively based). Wide scale social benefits, such as the health benefits to older people who can maintain social participation through travel, need to be quantified.

In both cases, the need is for improved identification and measurement techniques, along the lines suggested by some of the workshop contributions, and for enhanced human resources to apply them for service design (operators) and policy development (government).

#### *The Role of the Community*

Consultation with, and participation by, affected communities is, today, an integral part of the urban development process. In the competition and ownership debate, it has been somewhat neglected. Professionals should give higher priority to raising the quality of discussion in the public arena on these issues.

Public involvement could also extend to service design with advantage. Market research into what travellers actually want to do and why there is little interest in using public transport is needed. The workshop has demonstrated that GIS provides both a platform for harnessing information already gathered, such as that from the census, for market exploration and is an excellent tool for use in community consultations.

#### **Recommendations**

The workshop recommends that user issues occupy a more central place in the next conference. Although the economic consideration of models for competition and ownership in passenger land transport is important, the efficient and effective provision of passenger transport depends upon it suiting the users requirements. It is also of limited value to consider the merits of competition within public transport without considering the major competitor, the private motor car.

Issues of social and environmental benefit need to be considered but there are also market and business opportunities to be explored. Greater understanding of the diversity of use and users is needed if the passenger transport needs of the growing world population are to be served. Thus competition and ownership could be seen as a sub-topic of "user requirements " rather than vice versa. Everybody is a "user"!

## RAIL SECTOR ISSUES: Workshop 3

**John Dodgson (Chair) and Christopher Nash (Rapporteur)**

### **1 Introduction**

This Workshop considered rail sector issues. There were papers on access and access charging issues by Austin and Robinson, Dodgson, and Garnham Bones and Withers. Nilsson described the system of separation of infrastructure from operations in Sweden and considered an auctioning mechanism to allocate track capacity to independent bidders. Linke's paper described the restructuring of German state railways. Evans considered how safety issues were dealt with under Britain's newly-restructured and shortly-to-be-privatised system. Savage considered the issue of returns to scale and density in railways, using data from US rapid transit systems. Truelove reviewed the history of the planning of the yet-to-be-built high speed rail link between London and the Channel Tunnel. In addition, Euan McQueen and Steve Voullaire explained the background to New Zealand Railways' privatisation and its implementation.

The report will consider in turn objectives and control, the complexity of rail systems, alternative approaches to railway reform, vertical separation and track access issues, cost structures and competitive tendering and safety, before seeking to draw conclusions.

### **2. Objectives and control**

There was unanimous agreement that railways need to act commercially and have clear objectives from government. In other words commercialisation is more important than privatisation per se. This means that managers and owners need to be prepared to bear normal commercial risks - and not expect Government always to bail them out.

It follows that governments need to specify in advance what they want in terms of social services, and provide a clearly defined mechanism to pay for such services. This is formally accepted in many countries around the World, although there are still problems in practical implementation. These problems include escalation of subsidies, and the difficulty of withdrawing services against political opposition when the benefits that services provide (even when measured using social cost-benefit analysis) exceed the avoidable costs of providing them. The latter issue was mentioned in the keynote presentation by Derek Scrafton.

Consequently the existing situation has not been regarded as satisfactory in many countries. There has been a search for new solutions. These solutions include restructuring, corporatisation, and outright privatisation. One major aim has been to introduce more competition into the supply of rail services - competitive tendering is one example of this.

Regulatory issues are also still very relevant. There is a view that the old idea of regulating a monopoly supplier is no longer appropriate since railways face so much competition from other modes. From an early date railways in most countries were subject to state regulation with regard to

their charges, and common carrier obligations because of their monopoly powers, in the era before the motor vehicle. In many countries, including the United States and Great Britain, much of this regulatory apparatus has been dismantled with the growth of inter-modal competition. Similarly, in New Zealand it is not thought necessary to regulate the privatised railway's freight rates because of inter-modal pressures.

Although this old-style railway regulation has disappeared in many (but certainly not all) countries, new issues of regulation have arisen (as well as traditional ones like safety). These include issues of regulation of access charges in vertically-separated structures, and of passenger fares in congested urban areas. In particular, there is an important role for the Railway Regulator in the new UK system. The UK Regulator who heads the new Office of Rail Regulation is responsible for ensuring that access to the network and track charges are fair, that competition is promoted, and that consumer interests - including those related to network benefits - are protected.

### **3. Rail complexity**

Much of this Conference was concerned with buses. However the Workshop believed that rail services are much more complex than buses, so that the challenges are greater. A major reason for the complexity of rail services is the existence of a separate railway infrastructure. The problems that arise from this include

- the problem of allocating capacity (train paths, station platforms etc) to train operators
- the problem of allocating costs to these users - ie the problem of charging for infrastructure. Though the Conference was concerned with passenger traffic, infrastructure charging brings in the issue of freight because of the existence of joint infrastructure costs in handling both freight and passenger traffics on the same network.
- the problem of determining the overall level of costs, and of deciding whether users should pay the full costs of rail infrastructure.

Another difference between rail and bus (see Austin and Robinson, p.457) is that entry barriers for rail services may be higher than in buses, so that less visible competition is likely to result.

### **4. Alternative approaches to rail reform**

As Nash showed in his keynote presentation, there are alternative models for rail corporatisation and privatisation. These include:

- . integrated freight companies (North America, New Zealand, Argentina);
- . integrated regional passenger companies (Japan);
- . the European model which involves some combination of separation of infrastructure from operations, franchising out of some or all passenger operations, and some degree of open access.

The Workshop looked in detail at the British, Swedish, German, Australian (New South Wales), and New Zealand experiences. Different models of privatisation or restructuring might be appropriate in different situations, and it is interesting to know why different countries have followed different paths.

### **The UK approach**

British Rail is being privatised at present. The infrastructure in the form of earthworks, track, signalling and stations has been transferred to a new company called Railtrack. The Government intend to float this company on the stock market in 1995. Railtrack is required to cover all its costs, primarily through charging train operators for the use of the network.

The rest of British Rail has been divided up into separate companies, and will be sold or franchised to the private sector. The Office of Passenger Rail Franchising (OPRAF) is responsible for channelling public funds for the operation of passenger trains to twenty-five passenger train companies which are being tendered in groups over the next few years. Potential operators are being invited to bid for subsidy. The Trainload Freight sector has been divided into three companies, which are being offered for sale. Parcels and other freight services are also being sold. British Rail's passenger rolling stock has been divided between three rolling stock leasing companies which will provide stock for the passenger train operators. Track and signalling maintenance units within British Rail are also being put up for sale, and will provide services under contract to Railtrack. All other parts of BR such as maintenance depots and consultancy firms have been, or will be, transferred to the private sector.

One difficult issue, considered in Dodgson's paper, is the determination of track charges which both cover Railtrack's total costs and give correct signals for utilisation of the existing network and for investment (or re-investment) in the system. The charges devised so far have been divided into 'negotiated' charges for commercial traffics, and 'administered' charges for subsidised passenger services. Although economic principles have been followed in ensuring that, for example, charges at least cover avoidable costs, the initial charges appear to vary too little with usage to ensure efficient use of existing capacity.

### **The Swedish approach**

In Sweden a new rail infrastructure authority known as Banverket was established in 1988. A major aim was to achieve a fair balance with road, and users of both types of facilities pay marginal cost based charges. These comprise an annual charge per vehicle and a charge per vehicle kilometre varying with the type of vehicle. They fall a long way short of covering total cost. Banverket also uses comparable social cost-benefit analysis based investment appraisal criteria to the roads sector, and this has resulted in a big increase in rail infrastructure investment. For the time being, the state owned company (ST) remains the monopoly train operator on the main lines, although secondary routes are put out to competitive tender. A greater degree of open access is under discussion, but there is no intention at present to privatise Bahnverket or SJ.

### **The German approach**

In January 1994 the two state-owned German railways, DB (former West German) and DR (former East German), were merged into the German Rail Corporation, Deutsche Bahn AG. Traffic loss has been particularly rapid on the former Eastern system since reunification. The Federal Government has taken over responsibility for much previous debt and for excessive staff costs on both former systems. In addition it is to bear additional costs arising from the former DR's use of outdated technology and its environmental liabilities.

Track and signalling have been separated from operations. DB AG has been divided into three parts, Track Network PLC, passenger traffic, and freight traffic. There is to be open access to the infrastructure for third parties, and to this end a published system of access prices has been devised. These prices distinguish between ten categories of line, and then seven types of passenger train and five types of freight train. There are variations for track wear-and-tear related to the weight of trains, and for the operator's requirements in terms of punctuality. There are also discounts related to volume and advance purchase which have led to criticisms that the established operator will be at an advantage in relation to entrants. The charges are designed to cover out-of-pocket costs, although not depreciation or interest, and are wholly variable with throughput. As a result, problems have also arisen over difficulties short-distance passenger train operators have in meeting the levels of track charges required for high frequency services, and further revision is expected.

### **Access in New South Wales**

Rail services in the state of New South Wales are provided by the State Rail Authority (SRA). Services are operated by three main divisions, CityRail for passenger services in the Sydney (plus Newcastle and Wollongong) conurbations, Countrylink for country and interstate passenger services, and Freight Rail for freight services. Rail services are affected directly by a new competition policy in Australia, following publication of the Hilmer Report. In 1995 each Australian State Government agreed with the Federal Government to implement a national competition policy under the Council of Australian Governments (COAG) National Competition Policy Agreement.

An aspect of this which has particular relevance for rail services is access to essential infrastructure facilities in Australia: these are those which are important to competition in other markets (ie are intermediate inputs), which would be difficult to replicate, and which are of national significance. New South Wales is developing its own rail access regime to comply with this. Users of the infrastructure should not be at a disadvantage in relation to the infrastructure provider, in other words there should be competitive neutrality. This is seen to require a clear accounting separation for rail infrastructure, but not structural separation on the British and Swedish lines. An infrastructure unit within the SRA will be responsible for negotiating access to the infrastructure. One major resulting requirement is for the SRA to improve its cost and revenue data allocation, and its negotiation and contract documentation. The National Rail Corporation, which has taken over loss-making inter-state freight traffics, requires access to SRA tracks and hence an access pricing regime, while SRA's own Rail Freight requires access to track and yards in the Sydney area. Other, private, companies are considering entry to the interstate freight market.

A fixed-formula approach to access charges has been rejected in favour of a cost-based system with negotiation of access prices with users or potential users. This raises similar issues of cost allocation and asset valuation as in Britain.

During 1994 State Rail established RailNet to manage the introduction of competition to the rail network. Barry Garnham, Director of RailNet, outlined the issues of asset ownership, interdependence, operator structure, access pricing, accounting separation, asset valuation and community service obligation policy that had arisen. One of the conclusions of the Hilmer Report was that incumbents should not also act as regulators of their own businesses. Consequently RailNet is independent of the existing SRA business groups. RailNet has reviewed rail access approaches in other countries. It has not gone for vertical separation - nor does it expect that access charges can

recover total infrastructure costs. Access charging started in July 1995 with global access charges for CityRail, Countrylink, Freight Rail and National Rail. In the longer term it is the intention to develop usage charges and penalty and incentive systems.

A major issue is the charges for transporting Hunter Valley export coal. This has been a very profitable traffic for the SRA, and the profits have in the past been regarded as a kind of mineral exploitation royalty. Now with open access the mining companies wish to handle the traffics themselves, or contract with third parties. However the potential loss of cross-subsidy is a serious political consideration.

### **The New Zealand approach**

In contrast to the other systems considered, New Zealand has gone for fully-fledged privatization of a vertically-integrated rail system, without open access. New Zealand Railways are predominantly freight, but there are some long-distance and commuter passenger services. The latter are provided under contract in Auckland and Wellington, but the long-distance passenger services are not supported by government. After initially being restructured as an "arms-length" company, New Zealand Rail was offered for sale in 1992. There were eight groups of potential owners, and in September 1993 the Company was sold to a consortium which included the US Railroad, Wisconsin Central. Staff numbers have fallen from about 26,000 in the mid-1970s, to around 4,500 now, though there has not been a significant contraction in the route network. The Company made a profit in 1994 of NZ\$38 million.

## **5. Vertical separation and efficient access charging**

As the above discussion of various systems has indicated, a major consideration in deciding on the form of structure is the issue of vertical separation. One major reason for vertical separation is to achieve fair competition - this was a major rationale for the system that has developed in the UK. However the Workshop heard of problems in achieving fair competition even with vertical separation in Germany because of complaints that the main operator would benefit from quantity discounts. In NSW there is concern of potential entrants to the Hunter Valley coal market that Freight Rail as the vertically-integrated supplier will still retain control over operations.

However in achieving vertical separation it is necessary to solve two core problems:

1. allocating capacity
2. co-ordinating infrastructure and rolling stock investment decisions.

The problem is to devise a practical access pricing system which promotes efficiency in these two areas. None of the examples we looked at had solved this problem - especially with complex networks. The paper by Nilsson considered an inter-active bidding system that was designed to achieve optimality by giving bidders for track capacity the incentive to reveal their preferences truthfully in a system that converged to a mutually-consistent use of fixed track capacity. This system was tested using an experimental approach where bidders had monetary incentives to optimise their bids. The resulting Vickrey-type auctions did seem to get close to optimal capacity allocations, but the

approach now needs to be extended to more complex networks than the simple single-track block section dealt with in the paper. (In Vickrey auctions the winner pays a sum equal to the second-highest bid.)

A further issue is whether rail access charges should cover total rail infrastructure costs. As we have seen, they are supposed to do so in the vertically-separated UK system and in the vertically-integrated New Zealand one, but not in the German, Swedish and New South Wales systems. The issue is closely related to that of securing a level playing field between different modes. This leads to the problem of comparing the treatment of infrastructure costs in the rail sector with those in the roads sector. It is however very difficult to achieve a fair comparison in practice.

With regard to investment, there are problems in co-ordinating infrastructure investment decisions when train operators do not own the infrastructure. This problem has already arisen in the franchising of the British West Coast main line, where major infrastructure renewal is required. Paul Truelove's paper highlighted the difficulties in private sector involvement in new rail infrastructure building (even without vertical separation) in Britain by chronicling the decision process in choosing a route for the proposed high speed line from the Channel Tunnel to London. Political indecision over the route and choice of terminal, together with escalating costs and legislative restrictions on public financial support, have so far prevented construction of a high-speed link on the British side of the Channel. Truelove characterises the process as "disjointed incremental decision-making" (Truelove, p.584).

## **6. Cost structure issues in relation to rail privatisation**

The form of rail privatisation will in part be related to industry cost structures. Ian Savage's paper considered this in the light of evidence on cost structures of US rapid transit systems. Data on 22 heavy and light rail systems for the period from 1985 to 1991 were used to estimate a short-run translog cost function for the industry. The resulting function showed economies of density, but approximately constant returns to scale with regard to network size. This evidence is consistent with much of the earlier evidence on mainline railway costs. Savage suggests that this means that the larger systems could be privatised, for example by means of limited period franchises, by splitting up their networks into smaller units. This suggestion was taken up in regard to Australian commuter systems in Scafton's plenary paper.

## **7. Sub-contracting, competitive tendering, and franchising**

Another area of major agreement in the Workshop was the important role of sub-contracting. There are many tasks which railway companies have traditionally undertaken "in-house" which can be undertaken by outside agencies, competing with each other for the work. Such tasks include roles such as catering, but also more important ones such as rolling stock maintenance, and infrastructure maintenance. Competition in such markets avoids the complications of on-track competition.

Competitive tendering or franchising of passenger services also has an important role to play. There is a question of the respective meaning of these two terms. We take the distinction between them to mean that franchising is a process that gives operators a freer hand in the determination of what services to provide and at what quality levels, whereas competitive tendering involves more specific definition of service requirements by the tendering agency.



Given the complexity of on-train competition, this looks a promising way forward for railways. It should be a major topic of the next conference, drawing on experience in Britain and elsewhere. One major issue is the balancing of greater commercial freedom for operators against the benefit of network co-ordination - information, connections, through ticketing, and ticket inter-availability.

## **8. Safety**

Safety implications of railway restructuring and privatisation also need to be considered. Safety issues in a disaggregated railway are complex, especially given the separate safety responsibilities of different train operators and other agencies. However, we think that they are capable of resolution - on the basis in particular of Andrew Evans' paper on how interlinking safety cases and risk assessment are being handled in the British system.

Under the new system all railway operators are required to prepare safety cases which set out their safety arrangements, and their arrangements for managing interfaces with other operators. Railtrack's safety case has to be approved by the Health and Safety Executive, while train operators' cases are approved by Railtrack. As part of the safety case organisations have to assess the risks their operations face. This may be done through previous experience of accidents, and from hypothetical assessments of what could go wrong with existing systems. Because of the long history of rail operations (and of systematic investigations of previous accidents) Railtrack's hazard identification has primarily been based on previous experience. Evans' paper considers different ways of evaluating risks, including cost-benefit analysis, industrial risk evaluation (for risks to particular individuals this distinguishes between intolerable, acceptable, and "as low as reasonably practicable" risks), and elimination of accidents which have been identified as being avoidable. Railtrack's main evaluation criterion is the Health and Safety Executive's framework for the tolerability of risks faced by particular individuals. Numerical targets are set for individual risks faced by passengers, members of the public, road vehicle occupants at level crossings, and track staff. Beyond this, proposals are subjected to a standard cost-benefit analysis. Evans' paper concluded that this framework for risk assessment is broadly right.

## **9. Conclusions**

There was broad agreement on a number of issues concerning the rail sector. It was agreed that railways needed to act as commercial organisations, with clear objectives and payment for social obligations; that there was considerable scope for achieving competition in the supply of inputs such as rolling stock and track maintenance by competitive tendering; and that even such major reforms as that underway in Great Britain need not threaten safety provided that appropriate mechanisms for its regulation were in place. Franchising rail passenger services was seen as a promising approach, but with many unresolved issues requiring further research. Separation of infrastructure from operations was seen as desirable only if the problem of designing an efficient regime of access charges could be resolved, and none of the systems currently in place were seen as adequate in this context.

# REGULATORY REFORM AND TRANSPORT POLICY DEVELOPMENT: Workshop 4

**Ewen Michael (Rapporteur)**

## **1. Introduction**

This workshop considered regulatory reform and initiatives in transport policy development in three categories: the effects of regulatory reform, with papers by van de Velde, Wilson and Halvorsen, by Wilson and Shaw, and by Wilson and Richardson; current directions of transport policy, with papers by Mayes, Allen and Greenough, by Michael, and by Toleman; and empirical results from contemporary policy practices, with papers by Mills and by Bonnel and Chausse. The workshop was chaired by Gordon Mills.

This report reviews the workshop discussion under four headings: concepts of competition, competitive practices, the role of government and problems in the new regulatory approaches. On this basis, some conclusions are made and some directions for future research are recognised.

## **2. Concepts of competition**

The focus of the workshops concern with transport policy development was the emergence of *competition policy* as the global force for change. The point is too easily forgotten, but it is often assumed that competition has the same contextual meaning in all policy environments. In short, transport analysts and others familiar with the economic debate often slip into the neo-classical paradigm without recognising that the actual basis of decision-making depends on the specific political and cultural background of the state. Thus, what passes as a move to competition in one country may well be perceived as a regulatory nightmare in another.

There would appear to be significant differences in the practice and application of competition policy between states. In particular, it would seem that the vision in some countries (notably Australia, Britain and New Zealand) sees the benefit of competition in terms of Smith's invisible hand and the pursuit of optimum output at the lowest production cost. Alternatively, many others, and notably those from continental Europe, see competition in public transport as a supplementary issue where equity and social needs tend to prescribe the economic agenda.

*Allocative efficiency* appeared to be treated in different conceptual terms according to national experience. The policy approaches in Australia, Britain and New Zealand seemed to aim at minimizing unit production costs, to reduce cross-subsidies and, consequently to lower costs for all producers. The alternate argument preferred to view public transport services more comprehensively, seeing them as the means to provide the infrastructure that enhances total production. The distinction is not simple, and might well be arguable only among those states with the capacity to pay for the luxury of such infrastructure. As discussion evolved about competition policy, the emphasis shifted to the differences inherent in a government's pursuit of *efficiency* or *effectiveness*. Most believed that the mind-set for Australian, British and New Zealand policy-makers was firmly locked on *technical*

*efficiency* (i.e. minimising the costs of performing each transport task) whereas the Europeans and North Americans were more concerned with effective service delivery: although it may be that the debate about the implications of a competitive transport sector for the whole economy has yet to begin in these policy environments.

This line of argument was based not on a quibble over the definition of competition, or its associated economics, but rather about the recognition of a community's expectations of what competition would deliver in the way of benefits in each unique case. There is mileage for further work on topics of this nature, particularly as the evidence offered by the international experience suggested that the expected benefits from a competitive market would be defined differently according to each community's cultural, social and political basis. This implies a clear warning of failure for those who try to prescribe the competitive solution in every circumstance.

These differences about the expectations of competition policy were particularly apparent when comparing Bonnel and Chausse (France), van de Velde (Netherlands) and Mayes et.al. (Canada) with the stance apparent in Michael (Australia) or Toleman (New Zealand). Van de Velde, in particular, exposed the nature of these differences in his study of the Dutch experiments into contracting out local bus services, where he noted that government was not seeking to change cost and price structures under their perception of competition policy but rather to enhance service levels within the existing policy framework. The tendering system in this case generated some improvements in service levels and an increase in the supply of timetable-kilometres, noticeably in off-peak periods where the marginal cost of production was at its lowest.

### **3. Competitive practice (including tendering, contracting, etc.)**

There was considerable interest in exploring the effects of regulatory reform and policy change on industry practice, particularly on the road-coach industry and on the potential role of contracting (or tendering) to bring competitive forces into the transport market.

Nigel Wilson explored the functioning of contracts and their operations in the road-coach markets of the USA and UK. The relationship between contracting and economic policy was established, and the mechanisms to ensure an appropriate transfer of information between the contracting parties were exposed. The paper by Wilson and Halvorsen is one of those rare gems which provides the researcher with a user-friendly introduction to contract economics along with enough application to quickly build the readers understanding of how the specific form of a contract can be set to achieve the varied goals of the policy-maker.

Wilson and Shaw compared the different approaches to labour contracts in the USA and UK, where ostensibly the operators in each case were trying to reduce costs. The comparison suggested that the small independent operators, typical of the USA environment, had achieved significant cost reductions through flexible labour contracts and the greater use of part-time workers, that matched the sort of cost reductions achieved through ... sweeping changes to the public transport organisational structure in the UK.

Contracting or tendering arrangements were clearly perceived by the workshop as a *principal-agent* relationship. In most cases, government was normally held to be responsible for determining the

*quality and quantity* of public transport services to be provided and, hence, responsible for establishing the conditions for a contract to operate.

It was argued that this contractual arrangement between government and operator was flawed by the absence of the third party to transport services; that is, the interests of the consumer were never directly represented in the tender process! Evidence suggested that governments and operators were beginning to understand the incentives that needed to be incorporated into the process; but, as yet, no mechanisms were being pursued to motivate the consumer to join these arrangements.

A problem was perceived with the rationale of the tendering process, for it assumes that the optimal outcome has been identified prior to the contract commencing: when, in fact, the outcome should be flexible to meet the consumers actual needs (not the tender writers vision of a future outcome). Bus operators, and perhaps the managers of other small-scale services, were adamant that they could read their customer's requirements, but other members of the Workshop remained sceptical. A point well made on this issue, was that the transport profession might need to brush up on its understanding of *quality* and how to achieve it in the delivery of public transport services. Indeed, discussion of this topic was firmly recommended for the next conference.

Wilson and Richardson expanded further on some of the dangers inherent in the current drive to privatisation in the bus industry. They observed that the contracting process in Victoria (Australia) often saw the government and the bus proprietors in a conflict between service levels and cost reductions, particularly when information was not equally shared. They used a game-theoretic approach to demonstrate that co-operative strategies between government and bus operators could enhance the outcomes from contracting in preference to the current tendering system.

The special association of *New Zealand* as the host nation of the Conference, led to considerable interest in the success of their approaches to tendering after such radical reform over the last five years. The benefit of the New Zealand scheme is that tenders are let by Regional Councils who are able to determine specific local needs and priorities. As funds are at least partly based on local taxes, there is some obvious restraint on the community's willingness to pay. One concern, emerging from the new system, is the loss of the benefits that were once associated with integrated planning and centralised scheduling. This occurs because each new private tender is independently structured and, hence, serves to fracture the market. While the contract process itself can be designed to remedy the problem, it was felt that the degree of specification necessary on the part of the local authority was starting to become intrusive and unwieldy. Mindful of the complexities that had evolved in the British experience, the advice from British and New Zealand practitioners was to keep tenders as simple as possible, allowing them to evolve over time to match local needs.

#### **4. The Role of Government**

The Workshop sought to address the role of government as the *provider* of public transport. It surprised us from the outset that we could offer no clear prescriptive or normative role for government. It was surprising because the group's membership spanned three continents and seven nations, yet no individual felt positioned to argue that government should carry out *specific* public transport tasks to meet certain economic or social goals. There was general agreement that government was the proper authority to ensure that public transport was actually available to the

population: but, ... how it should be provided ... by whom ... at what cost ... and why some services and not others ... always remained unspecified. This discussion underlines the inconsistencies in the division between the appropriate roles for the private sector and for the public sector in different countries, that is the source of so much confusion in western policy-making.

Some effort was made to argue that the perceived inconsistencies in the roles of government was the natural outcome of the vast gulf that separates the tax base from the use of public transport services - in short, the taxpayer often fails to recognise that they are the financial supporters of local transport systems. Experience from New Zealand and France, two countries where local taxes are levied directly for the provision of local transport services, still did not seem to have enhanced the community's understanding of what services they wanted and at what cost!

Consideration was given to the proposition that there was some public interest failure or conflict between government's joint roles of *market regulator* and *funding agency*. For some regulation was often seen to be the effective public mechanism to achieve fair competition, equity and access; while others preferred to argue that regulation was more the means to avoid waste through the elimination of unnecessary competition.

Few perceived regulation (by either interpretation) as being at odds with government's financial role, where the issue seemed to be who should receive the appropriate subsidy .... the operator (public or private) or the consumer? From the policy-makers point of view, Toleman noted that: ...public transport has an ability to blot up vast amounts of money, often with little obvious benefit to the taxpayer... . The capacity of publicly funded enterprises to control their costs was seriously questioned. So, too, was the purpose of funding public transport in many inner urban areas where the beneficiaries were claimed to be the upper echelons of the economic society. A little hope in the effort to reduce subsidies was offered by evidence in the papers by Michael and by Toleman of substantial unit cost changes as a result of moves to deregulate and open markets in the state of Victoria (Australia) and in New Zealand.

When challenged, the Workshop found it difficult to specify which social groups might warrant subsidy or support from the public. There was total agreement that the socially disadvantaged warranted protection in the transport market, but actually identifying who such people might be in any given society produced little consensus. One example, unique though it may be, was clearly observed in the paper by Mayes et al., which concerned the transport and mobility needs of isolated indigenous communities in Canada; and, while Mayes sought to clarify VIA Rail Canada's other community service obligations, there were few other examples nominated as viable candidates for subsidy. In these circumstances, recognizing the transport benefit that is being subsidized becomes confused when there are substantive differences in the costs between modes.

An alternate approach, put forward particularly for inner-city congestion debates, suggested that the positive externalities of public transport outweighed the minor distortions of funding benefits for specific groups, even where those groups had no welfare need for subsidy. In this view, the externalities alone justified the continuation or expansion of public subsidies for transport. The issue remains open!

Pursuing the same theme, Toleman presented a paper that reviewed New Zealand policy, part of which argued that public subsidies should be targeted at the individual-in-need rather than at

operators or providing authorities. Toleman indicated that the New Zealand government was reconsidering its role in public transport and had recognised that the demand for public transport was changing. Services would need to focus on the needs of individuals in the future, and government might well find it more appropriate to subsidize individual choices rather than fund operators in the conventional manner.

## **5. Problems in practice**

Bonnel and Chausse of the Laboratoire d Economie des Transports, Lyon, raise some fundamental questions about the direction of competition policy. They reviewed the organisation of competition between private vehicles and public transport, arguing that the slight underpricing of private transport had a Snowball effect ... leading to the domination of one particular mode of transport. Bonnel and Chausse examined a number of European cities to demonstrate how different policy approaches had produced different growth rates in transport supply between public and private modes.

Bonnel and Chausse's observations were derived from an extensive modelling of the costs and externalities of both private and public passenger transport modes. The model is among the most sophisticated to have been developed for policy analysis, but, as much of the outcome is dependent on the values placed on externalities, acceptance of the results will depend much on the readers own predilections.

In a subsequent paper by Mills, the benefits of privatization policy continued to be questioned. While starting from the conventional premise that user charges for private vehicles on public roads were economically justified, he analysed the current policy of fully privatizing the construction, operation and maintenance of tollways in New South Wales, asking whether privatizing the revenue-risk could actually deliver benefits to the public. He observed a paradox whereby if revenues do not meet costs, then the community would be saddled with unnecessary infrastructure, but if government makes a financial contribution then the market test itself has been eliminated. Mills suggested that perhaps decisions about creating such infrastructure truly belonged in the domain of government, although contracting out each stage of construction and operation in a competitive framework might still deliver many of the cost benefits that the current privatization policy is hoping to deliver anyway.

## **6. Conclusions**

Despite the divergence of opinions and interests, there was general agreement that the moves towards competition policy had now become the global engine driving the changes (desired or not) to transport policy. In this context, the recurring theme throughout the workshop was trying to identify who was benefiting from the changes? In this sense, the outcome falls in line with Toleman's observations that the basis of policy is changing to focus on people and on needs, rather than on services and organisations.

The group identified critical issues for research:

- (i) should government s fund people or services ?

- (ii) how accessible should public transport be for people?
- (iii) what is fair competition in the public transport market?
- (iv) how effective is the tendering process?
- (v) how do you measure quality in the delivery of public transport services?

# INTERNATIONAL EXPERIENCES IN COMPETITIVE OPERATIONS OF LAND PASSENGER TRANSPORT: Workshop 5

**Barry Turley (Chair) and Wayne Talley (Rapporteur)**

## **1. Introduction**

In recent years, many countries have introduced economic deregulation (at least partially) and/or privatisation (via the sale of assets and/or via contracting-out) into the land passenger transport sector. Their primary purpose in doing so is to promote competition among transport providers (companies or operators) in order to reduce the cost of land passenger transport services. In this paper, the experiences of several countries in the competitive operations of land passenger transport are discussed. It is noted that countries face a challenge in maintaining the advantages of competition without its disadvantages (e.g. uncoordinated and nonintegrated transport systems). Rather than only promoting competition, the goal of a sustainable land passenger transport system should be promoted. A transport system is sustainable if it meets society's commercial and social transport needs at a cost efficient level.

The plan of the paper is as follows: Transport competitive experiences of several countries are discussed in Section II. Section III discusses transport sustainability and factors that are key contributors to its obtainment. Recommendations for promoting sustainable land passenger transport systems are presented in Section IV.

## **2. Transport Competitive Experiences**

Prior to 1980, the bus passenger industry in the United Kingdom (UK) was subject to economic regulation. Beginning in 1980, a number of bus deregulation and privatization acts were passed to promote competition within the industry. The 1980 Transport Act effectively deregulated long-distance (or intercity) bus services -- liberalizing the restrictive control of fares, making it easier for new services to be introduced and freeing services of quantity control. The 1985 Transport Act deregulated local bus services (except in London and Northern Ireland) -- removing quantity controls, amending quality controls, and reducing barriers to entry. It also privatized (via the sale of assets) the state-owned National Bus Company.

During the 1980-86 period, a more relaxed licensing regime initiated some competition, but new entrants were few; the introduction of minibuses on high-frequency urban bus routes was the first significant innovation in the industry in many years. The 1987-90 period witnessed substantial competition in some urban areas between established bus companies and new entrants -- driving down fares, the quality of service, staff wages and working conditions, and eclipsing trade union power.



Competition regulatory bodies intervened both in investigation of mergers and alleged unfair competitive practices.

The 1990-95 period witnessed the gradual growth (via the purchase of incumbent bus companies) of very large (2000 or more buses) publicly-quoted bus companies and the failure of a number of small companies. The increasing competition to buy bus companies led to significant increases in the prices paid for them and effectively eliminated the ability of smaller companies to expand by acquisition. The larger companies accelerated their fleet replacement programs, realizing economies of scale from fleet standardization. By the end of 1994, the UK bus passenger industry consisted of six national companies controlling over 60 percent of the market; the largest company, Stagecoach, controlled over 21 percent of the market. In 1995, Stagecoach's UK operations included over 20 separate bus passenger companies or divisions from the South Coast of England to the Highlands of Scotland and two companies in London, employing nearly 14,000 staff in **Britain**. Stagecoach is also UK's largest overseas bus operator, having bus operations in Africa, New Zealand and Hong Kong and recently acquiring operations in Portugal.

Under economic deregulation, bus service in the UK has expanded but patronage has declined by an equivalent percentage. Public funding and operating costs fell by 55 percent and by an average of 30 percent between 1986 and 1994, respectively. Local authorities have contracted-out and subsidized socially desirable but uneconomic services (i.e. through competitive tendering). In some areas, the instability in bus service has prompted some passengers to lobby for re-regulation. The perception by some politicians that bus competition is unpopular with customers and open to abuse by national bus companies may result in these politicians supporting legislation for re-regulation of the bus industry in the near future.

In New Zealand, transport law reforms of 1989 deregulated land passenger transport with implementation taking place in 1991. The Transport Services Licensing Act of 1989 replaced the previous quantitative licensing system with a qualitative system having few restrictions on entry. The Transit New Zealand Act of 1989 established regional councils as the planning and funding agencies for passenger transport, requiring all payments by these councils to be subject to competitive pricing procedures. The aims of these laws are to: 1) provide integrated land transport planning, 2) provide a clear picture of transport system costs; 3) reduce bureaucracy; 4) encourage innovation in land transport; 5) devolve appropriate responsibility to local government; 6) provide for fair competition among commercial transport operators; 7) improve consumer service and safety; and 8) provide greater efficiency in public expenditure.

Deregulation has affected bus passenger service in Auckland (New Zealand's largest urban area with 28 percent of the country's population) in a number of ways. The average unit cost of bus service has declined, reflecting the advent of competition and/or labour market reform (from the threat of competition and potential jobs lost from contracted-out services). In some areas, service frequency has increased and new service has been provided. Where competition has emerged, it has often been at the expense of service quality; e.g., in some cases, successful tenderers have entered the market with poorer quality vehicles, inevitably generating complaints from customers. The requirement to offer competitive tenders at sufficiently small size to encourage competition from new entrants has in some cases led to an inefficient and fragmented division of services which should logically have been offered as a single tender. The fragmentation of services has reduced the public's comprehension of the transport system and ability to transfer between some routes.

The fragmentation of transport services suggests that there may be a fundamental incompatibility between developing an integrated passenger transport system and a regime which encourages competition for the transport market. In a competitive environment, transport service providers seek to differentiate themselves in the market, but it is exactly this differentiation that an integrated system seeks to minimize. The challenge is to develop a transport system that maintains the advantages of contestability, but without the disadvantages that excessive competition brings.

In South Africa, the Road Motor Transport Act of 1930 established economic regulation of the passenger transport industry; regulation was extended with the passage of the Road Transportation Act of 1977. Regulation restricted competition within and between modes and promoted protectionism. Modes have tended to develop in isolation from one another, each operating within a monopoly-created environment.

Since 1987, transport policy in South Africa has been guided by the 1987 White Paper on National Transport Policy, concluding that transport is a basic economic infrastructure that must facilitate economic and social development through the provision of basic mobility and accessibility at minimum cost. The cornerstones of the policy are to reduce regulation, encourage effective competition, ease entry into the market and promote private enterprise. Passenger transport decision-making is to be devolved to the "lowest level of government possible" and that the "lowest level of government" be responsible for the payment of subsidies. It is recommended that competitive tendering be used to increase competition and possibly reduce the level of subsidies to the protected public transport sector. However, there are a number of factors that limit the introduction of competitive tendering -- the current regulatory legislation protecting public transport from competition, the concerns of unions regarding job security, and the complicated nature of competitive-tendering documentation.

In addition to its regulation policy, transport development in South Africa has also been affected by its racial segregation policy, i.e. a policy of spatial separation between different racial groups. The Group Areas Act forced the resettlement of many black people far from their jobs, increasing journey-to-work travel on subsidized buses, some running over 100 kilometers each morning and evening. This segregation policy has distorted land utilization and transport services -- a high-cost public transport system was developed to transport (primarily black) workers from townships to employment centres, requiring a subsidy of \$US 700 million in the 1994-95 fiscal year.

The public transport system (e.g., bus and train services), however, has failed to keep pace with the demands of (predominantly black) commuters; as a consequence, in the last twenty years a parallel, unsubsidized mode -- the kombi (minibus) taxi -- has developed. The mode uses van-type vehicles with up to 15 passenger seats which operate urban and inter-urban services at fares set by taxi associations. The kombi taxi's superior service (although at a higher fare) has resulted in its capture of all of the growth in the urban public transport market in recent years, diverting significant passenger traffic from buses and trains. Since 1982 the bus and rail industries have lost approximately 31 and 22 percent, respectively, of their passenger trips to the kombi-taxi mode -- currently capturing approximately 50 percent of the total black commuter market and consisting of approximately 140,000 taxis, mostly having black owners.

The only aspect of the kombi-taxi mode subject to strict regulation is vehicle size, but there is no enforcement of maximum passenger loads to match the seating capacity. The kombi-taxi permit

system has gradually become ineffective. Approximately 50 percent of kombi taxis are operating legally, i.e., having operating permits. The South African government has tolerated kombi taxis, because it has felt powerless to stop them. However, kombi taxis have filled a pronounced need for both users and providers, providing: 1) users with transport service to parts of townships not served by public transport, 2) an alternative to avoid the violence on trains and 3) a way into the economy for black people that has been proven to be impossible to stop.

Current transport planning in South Africa seeks to maximize the use of traditional (i.e., bus and train) transport modes and minimize the level of subsidies by minimizing the costs of these traditional modes. However, the growing availability of the kombi taxi, the new assertion of the rights of black people, and the likelihood of more flexible land use policies in the future suggest that traditional transport modes will find it increasingly difficult to satisfy the demand for journey-to-work trips. There is a need to integrate and coordinate traditional transport and kombi taxi modes. Also, should kombi taxis be subsidized given that bus subsidies exist or should bus subsidies be eliminated so that the two modes can compete on more of a level playing field?

In the United States (US), the typical local passenger bus (or transit) company is owned by the local government, receiving subsidies from all three levels of government (federal, state and local). In addition to bus service, the company may also provide other fixed-route services such as light rail and heavy rail (or subway) as well as non-fixed route services such as demand responsive services. In the 1980s, the Reagan Administration held the view that public (or local government-owned) transit companies were cost inefficient and that the private sector could provide transit services at lower cost. In 1984, the U.S. Urban Mass Transportation Administration issued its privatization policy, establishing the privatization (via contracting-out) of services of public transit companies as a condition for receipt of federal transit operating subsidies. By 1987, 66 percent of public transit companies were involved in some type of contracting-out.

The contracting-out of services in the US differs in several ways from that found in the UK and New Zealand. First, it is the public transit company rather than an independent agency that decides which service or function is to be contracted-out. Second, the public transit company is therefore not a bidder in the contracting-out (or competitively tendering) process to be the provider of a contracted-out service. Third, it is typical for only part of a public transit company's services or for certain specific functions, e.g. major overhauls of transit vehicles and certain administrative services, to be contracted-out. These differences suggest that the relative cost savings from contracting-out in the US are expected to be less than that found in the UK and New Zealand.

Cost savings in substituting privately-provided, contracted out services for transit services formerly provided by public transit companies have been attributed primarily to the lower labour costs of private providers (from using lower-cost nonunion labour). In addition, evidence suggest that contracting-out has reduced the cost of the remaining services provided by public transit companies, where unionized labour fearful of job losses have agreed to cost-saving, work-rule concessions in return for *management* agreeing to limit further contracting-out in the future. On the other hand, there is also evidence to suggest that contracting-out has increased the cost of the remaining services. Specifically, evidence suggests that contracting-out has contributed to an increase in the hourly earnings of both union and nonunion public transit bus drivers, apparently due to higher-wage concessions by management to labour and the employment of more experienced drivers.

In the medium-sized cities (200,000 to 500,000 inhabitants) of Indonesia, public transport service is provided primarily by privately-owned minibus (an average capacity of 12 passengers) operators rather than by government-owned, big-bus (or transit) operators that are usually found only in large-sized cities. In the early 1960s, public transport service in medium-sized Indonesian cities consisted of non-motorized modes, e.g., the three-wheeled pedicab and horse-drawn carts. In the 1970s, motorized (or minibus) service appeared; also, the disappearance of traditional unmotorized modes began, attributable to competition from the minibus and restrictive government policies. In some medium-sized cities, there is an over supply of minibuses; the competition has resulted in the deterioration in minibus safety caused by reckless drivers in an attempt to attract passengers (along a route) from competitors.

In the state of Tamil Nadu in India, privately- and publicly owned bus operators co-exist. Although the government restricts a single private operator from running more than five vehicles, this vehicle ceiling has not restricted the competition between private and public bus operators. However, evidence suggests that passengers are relatively more satisfied with public than private bus services, particularly in regard to reliability and safety; the exception is passenger comfort for which passengers are relatively more satisfied with private bus service. It appears that the public bus sector has a comparative quality-of-service advantage in providing long-route services, given its large vehicle fleet and its maintenance and infrastructure facilities, while the private bus sector has a comparative quality-of-service advantage in providing short-route services, given its apparent ability to provide a more personalised service than the public bus sector.

### **3. Transport Sustainability**

A common theme across countries that is the challenge in maintaining the advantages of land passenger transport competition (e.g., lower transport costs) without the disadvantages (e.g., uncoordinated and nonintegrated transport systems) that competition brings. Rather than the goal of only promoting competition among modes, the transport goal should be one of promoting a sustainable land passenger transport system. A transport system is sustainable if it meets society's commercial and social transport needs at a cost efficient level. If cost efficiency in the provision of transport service is to be achieved via deregulation and the promotion of competition, instability among providers of transport service is expected and therefore is consistent with sustainability. However, in meeting the needs of society, sustainability requires that transport service from the perspective of the user (or passenger) be stable.

There are several factors that are expected to be key contributors to the achievement of sustainable land passenger transport systems. A sustainable transport system is expected to have:

1. Strong providers (or transport companies) that invest in monetary and human transport capital;
2. An antitrust policy that counters monopoly practices;
3. Providers and government with compatible objectives and decision-making practices; and
4. Cooperative planning and delivery of integrated transport services .

### **4. Recommendations**

In promoting sustainable land passenger transport systems, it is recommended that:

1. A government policy be established to promote the stability of transport service from the perspective of the user;
2. A government policy be established to promote cost efficiency in the provision of transport service as well as investment in monetary and human transport capital;
3. Antitrust legislation be enacted to address market concentration and anti-competitive practices in the provision of transport service;
4. Coordination between transport providers and government decision-makers be promoted;
5. Cooperative planning and delivery of integrated transport services be promoted; and
6. The informal (or nontraditional) transport sector (e.g., the kombi taxi in South Africa) be allowed to fill the void in the provision of transport service not provided by traditional modes (e.g., the bus and train).

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## Papers Presented

### Conference Chair

#### **Prof David Hensher**

Institute of Transport Studies, University of Sydney, Australia  
*Urban Public Transport Futures: Broadening the Policy Debate*

### Keynote Speakers

**Wendell Cox, Jean Love** Wendell Cox Consultancy, USA &  
**Nick Newton**, Office of Passenger Rail Franchising, United Kingdom  
*A Summary of International Urban Transport Competition with case studies: Copenhagen, London and San Diego*

#### **Alan Cannell**

Transcraft consultants, Curitiba, Brazil  
*The Curitiba Bus (R)evolution: Integrated Transport Systems as mass Transport*

#### **Prof Chris Nash**

Institute for Transport Studies, University of Leeds, United Kingdom  
*Rail Privatisation - The Experience So Far*

#### **Dr Derek Scafton**

Urban Transport Inquiry, Australia  
*The Potential for Competition in Australia's Suburban Rail System*

#### **Ian Wallis**

Travers Morgan (NZ) Ltd, New Zealand  
*Urban Bus Reform Down Under : Six Years of Words, Actions and Achievements?*

### Workshop Sessions

#### **Dr Danie Ackerman**

Department of Transport, Pretoria, South Africa  
*Constitutional and Institutional Changes in the Provision of Public Transport in South Africa*

#### **Dr Patrick Bonnel & Alain Chausse**

Labouratoire d' Economie des Transports, Lyon, France  
*Urban Travel : Intra or Inter-modal Competition?*

#### **Prof John Brander & Dr B Cook**

University of New Brunswick, Canada  
*The Contestability of Urban Passenger Transport Markets : Market Size and Market Density*

#### **Brian Cox**

Stagecoach, United Kingdom  
*Stagecoach - International Experiences*



**Dr John Dodgson**

University of Liverpool, United Kingdom

*Separating Railway Infrastructure & Operations : the British Experience*

**Prof Andrew Evans**

University College and Imperial College, London, United Kingdom

*Rail Safety Cases and Railway Risk Assessment in Britain*

**Adrian Gargett**, Passenger Transport Board, South Australia &

**Ian Wallis**, Travers Morgan (NZ) Ltd, New Zealand

*Quasi-commercial Bus Service Contracts in South Australia*

**Barry Garnham**

Railnet, NSW, Australia (in conjunction with Terry Bones &

Nigel Withers)

*Open Access to Rail Infrastructure : the NSW experience*

**Greg Goebel**

Queensland Transport, Australia

*Performance-based Contracts as a Substitute for Competition Models*

**Dr John Gunaseelan**

Voorhees College, Tamil Nadu, India

*Service Efficiency: A Competitive Effectiveness Study in Bus*

*Transport in India*

**Prof Sergio Jara-Diaz**

University of Chile

*Differentiated Fares in the Santiago Subway System : Foundations and Experience*

**David Kilsby**, Sinclair Knight Merz &

**Leo Flynn**, NSW Office on Ageing, Australia

*Transport Provisions and Concessions for Older People in NSW*

**Dr Heike Link**

German Institute for Economics Research, Germany

*Railway Reform in Germany : Chances, risks and first experiences*

**Dr Sheelagh Matear, Stephen Bacon, James Henry**

University of Otago, New Zealand &

**Michelle Clare, Stuart Knarston**

Otago Regional Council, Dunedin, New Zealand

*Using Geographic Information Systems to identify Bus passengers*

**Robert Mayes, Mary Allen and Joe Greenough**

Transport Canada, Canada

*Current Policy Developments in Canadian Surface Passenger Transportation*

**Barry Mein**

Auckland Regional Council, New Zealand

*Is Competition working? The experience in Auckland, New Zealand*

**Dr Ewen Michael**

La Trobe University, Australia

*Privatisation Policy: the changes to Victoria's Railway*

**Antony Middleton**

Dept of Transport, Perth, Australia

*Transubstantiating Transperth - The Perth Approach to Public Transport Reform*

**Prof Gordon Mills**

University of Sydney, Australia

*The End of the Privately Financial Toll Road?*

**Dr an-Eric Nilsson**

Centre for Research in Transportation in Society, Sweden

*Allocation of Track Capacity*

**Dr Neil Paulley & Dr Richard Balcombe**

Transport Research Laboratory, United Kingdom

*Concessionary Fares Issues in the United Kingdom*

**Dr John Preston and Gerard Whelan**

Institute for Transport Studies, University of Leeds, United Kingdom

*The Franchising of Passenger Rail Services in Britain*

**Dr Ian Radbone**

Transport Systems Centre, University of South Australia, Adelaide, Australia

*Meeting the Needs of People with Disabilities in a Competitive*

*Environment*

**Ian Robinson and John Austen**

Department of Transport, NSW, Australia

*Competitive Access to Rail Structure*

**Gabriel Roth & John Diandas**

USA and Indonesia respectively

*Alternative Approaches to improving route bus services in Sri Lanka*

**Professor Yasuo Sakakibara**, Teikyo Heisei University, Japan &

**Kazusei Kato**, Kansai Gaidai College, Japan

*Airport Access in Japan*

**Prof Ian Savage**

Northwestern University, Illinois, USA

*Scale Economies in Rail Transit Systems*

**Dr Nariida Smith & Jianlin Xu**

Institute of Transport Studies, University of Sydney, Australia

*Using Geographical Information Systems to Plan Fixed Route*

*Operations*

**Professor Wayne Talley**

Old Dominion University, Virginia, USA

*Public Transit Labour Earnings in Privatised & Non-Privatised*

*Environments*

**Mark Thomas**

Milton Keynes Metro Ltd, United Kingdom

*Veni, Vidi, Vendi*

**Tri Tjahjono**

University of Indonesia, Indonesia

*Public Transport Evolution and Operation in Indonesian Medium Sized*

*Cities*

**Roger Toleman**

Ministry of Transport, New Zealand

*Land Passenger Transport in New Zealand : issues for the next decade*

**Dr Paul Truelove**

Aston University, Birmingham, United Kingdom

*Political factors influencing the routeing, station location and funding of the proposed high speed rail link between London and the Channel Tunnel*

**John Usher**

Croydon Bus Service Pty Ltd, Melbourne, Australia

*Service Initiatives & Security : a journey into the mind of a bus operator*

**Didier van de Velde**

Erasmus University, Rotterdam, The Netherlands

*The Experience of the Netherlands: Towards Competition*

**Mike Wadsworth**

MetroBus, Perth, Australia

*Effecting Organisational Change; the Metrobus Experience*

**Prof Peter White**

University of London, UK (represented only)

*A General Review of Deregulation in the Passenger Transport Industry*

**Dr Alan Williams**, Queensland University of Technology &

**Professor Helmut Kolsen**, University of Queensland, Brisbane, Australia

*Monitoring Community Service Obligations : Optimising Benefits from the Subsidy Dollar*

**Dr David Wilson & Prof Anthony Richardson**

Transport Research Centre, RMIT University, Melbourne, Australia

*A Game-Theoretic Approach to Cooperative Bus Industry Strategies*

**Prof Nigel H M Wilson & Rick Halvorsen**

Massachusetts Institute of Technology, USA

*The Role of Contract Structuring in Contracted Public Transport Performance: Theory and Practice*

**Prof Nigel H M Wilson & Nicola Shaw**

Massachusetts Institute of Technology, USA

*Labour Contracts in UK & USA Bus Companies with particular emphasis on the use of part-time operators*

## **Title and Abstract:**

### **English:**

#### **Competition and Ownership in Land Passenger Transport: The 4th International Conference, Rotorua, New Zealand, 10-12 July 1995, Parts 1, 2.**

Competition and ownership strategies for the provision of land passenger transport, primarily bus and rail, continues to be topical and important in the reform of the transport sector throughout the world. The 4th International conference on competition and ownership in land passenger transport, held in Rotorua, New Zealand in 1995 brought together 120 individuals from many nations to debate the pros and cons of alternative paradigms of service and facility provision. Workshops were convened under five themes: 1: Competitive models and impacts, 2: User requirements, 3. Rail sector issues, 4: Regulatory reform and transport policy development, and 5: International experiences in competitive operations. This two-part article summarises the debate and recommendations emanating from the five workshops, providing a synthesis of key issues currently facing governments, regulators and operators.

### **German:**

#### **Wettbewerb und Organisationsformen im Personenverkehr: 4. Internationale Konferenz, Rotorua, Neuseeland, 10-12. Juli 1995, Teil 1 und Teil 2**

Wettbewerb und Organisationsform des Personenverkehrs, insbesondere des Bus- und Schienenverkehrs, sind weiterhin weltweit wichtige Themen in der Reform der Verkehrswirtschaft. Die 4. Internationale Konferenz zu diesen Themen in Rotorua (Neuseeland) brachte 120 Experten aus aller Welt zusammen, um die Vor- und Nachteile alternativer Ansätze bei der Bereitstellung von Verkehrsleistungen und Verkehrsinfrastruktur in fünf Arbeitsgruppen zu diskutieren:

- 1) Auswirkungen verschiedener Wettbewerbsstrukturen
- 2) Benutzeransprüche
- 3) Schienenverkehr
- 4) Deregulierung und Entwicklung der Verkehrspolitik
- 5) Internationale Erfahrungen mit Wettbewerb in der

Verkehrswirtschaft Dieser zweiteilige Beitrag fasst die Diskussionen und Empfehlungen der Arbeitsgruppen zusammen und beschreibt damit die wichtigsten Probleme, die heute von Regierungen, Betreibern und Regulatoren gelöst werden müssen.

### **French:**

#### **Compétition et propriété des transports terrestre de passagers: 4eme conference internationale, Roturoa, Nouvelle - Zélande, 10-12 juillet 1995, partie 1 et 2 .**

Les stratégies de concurrence et de propriété pour la fourniture de transport terrestre de passagers, essentiellement bus et chemins de fer, sont toujours d'actualité et d'importance pour la réforme du secteur du transport à travers le monde. La quatrième conférence internationale sur la concurrence et le type de propriété pour le transport terrestre de passagers qui s'est tenue en 1995 à Rotorua, Nouvelle-Zélande, a rassemblé 120 individus de différentes nations pour débattre du pour et du contre des paradigmes alternatifs de la fourniture de services et d'infrastructure. Les ateliers couvraient cinq thèmes: 1: Les modèles de concurrence et leur impact, 2: Les besoins des usagers, 3: Les problèmes liés au domaine des chemins de fer, . 4: Les réformes de la réglementation et le développement de la politique de transport et 5: Les expériences internationales lors d'opérations concurrentielles. Cet article en deux parties résume le débat et les recommandations émanant des différents ateliers, en fournissant une synthèse des principaux problèmes auxquels les gouvernements, régulateurs et opérateurs font face.

## **Spanish:**

### **Competencia y Propiedad en Transporte Terrestre de Pasajeros: La 4a Conferencia Internacional, Rotorua, Nueva Zelandia, 10-12 Julio 1995, Partes1 y 2.**

Las estrategias sobre competencia y forma de propiedad para la provisión (in case that came funny, the word is "provision" with an accent in the last o) de transporte terrestre de pasajeros, principalmente por bus y tren, continúan siendo temas importantes y de interés (again, interes with an accent in the last e) en la reforma del sector transporte que se está (esta w.a. in the a) experimentando en todo el mundo. La 4a Conferencia Internacional sobre Competencia y Propiedad en Transporte de Pasajeros, llevada a cabo en Rotorua, Nueva Zelandia en 1995, congregó (congrego w.a. in last o) a 120 personas de muchos países con el fin de debatir las ventajas y desventajas de paradigmas alternativos para la provisión (as above) de facilidades y servicios. Se desarrollaron talleres de análisis (analisis w.a. in the second a) en profundidad sobre los siguientes temas: 1: Modelos competitivos e impactos; 2: Requerimientos de los usuarios; 3: Temas relacionados con el sector ferroviario; 4: Desarrollo de reformas a la regulación (regulacion w.a. in the o) y política (politica w.a. in the first i) de transporte, y 5: Experiencia internacional en operaciones competitivas.

Este artículo (articulo w.a. in the i) en dos partes resume el debate y las recomendaciones efectuadas en los cinco talleres, proporcionando una síntesis (sintesis w.a. in the first i) de los temas clave que deberán (deberan w.a. in the a) enfrentar los gobiernos, entes reguladores y operadores.

## **Abstracts for Particular Workshops:**

### **Competitive models and impacts**

Workshop 1 considered Competitive Models and Impacts. Three types of competitive models were identified: competition in the market, for the market and between markets. The workshop tentatively

concluded that although competition in the market worked well for inter urban transport markets, it worked less well for urban markets. The challenge for the future may be to design appropriate models of competition for the market and between markets for urban transport.

### **User requirements**

The second workshop looked at competition and ownership issues from a transport user perspective. It addressed issues of disadvantaged users and community service obligations ; setting and financing fares ; methods and tools suitable for coping with increasingly fragmented and complex markets ; and the search for quality, as interpreted by regulators and by operators. It concluded that user requirements should be more central to the policy development process.

### **Rail sector issues**

In the rail industry worldwide, there has been a search for new solutions, including restructuring, corporatisation, and outright privatisation, but the complexity of the rail industry, offers special problems. In the Workshop we looked in detail at the British, Swedish, German, Australian (New South Wales), and New Zealand experiences, as well as considering more general issues such as cost structures, vertical separation and competitive tendering. Whilst it was agreed that some developments, such as greater contracting out, were clearly beneficial, other developments such as the separation of infrastructure from operations remained of uncertain value until the issues of efficient pricing and slot allocation were resolved.

### **Regulatory reform and transport policy development**

This Workshop considered a number of issues under the heading "Regulatory Reform and Transport Policy Development", where discussion focussed largely on competition policy as the driving force for change in the international environment. The workshop report highlights key elements of the debate affecting the changes to competitive practice and the role of government.

### **International experience in competitive operations of land passenger transport**

This workshop surveys the experiences of several countries in competitive operations of land passenger transport. A common theme is that countries face a challenge in maintaining the advantages of transport competition (e.g. lower transport costs) without the disadvantages (e.g. uncoordinated and nonintegrated transport systems). Key contributors and recommendations to promote sustainable land passenger transport systems are discussed.

## **Bios of all Authors**

### **David Hensher**

David Hensher is Professor of Management, and Director of the Institute of Transport Studies: A Commonwealth Key Centre of Teaching and Research in Transport Management at the University of Sydney and Monash University. He is President of the International Association of Travel Behaviour Research and a Fellow of the Academy of Social Sciences of Australia. David has published extensively in international transport journals and key journals in economics as well as five books. His particular interests are transport economics, transport strategy, integrated transport policy, sustainable transport, productivity measurement, stated choice experiments, dynamic discrete-continuous choice

modelling, privatisation and deregulation. David has advised numerous government and private sector organisations on matters related to transportation, and is currently an Area Editor of *Transport Reviews*.

### **Fiona Knight**

Currently Land Transport Policy Manager for Transit New Zealand. Fiona's career has been in the area of public policy, with three significant periods, spent working with the Treasury, on employment policies and with the transport industry. Starting with the Ministry of Transport, in 1985-6 Fiona was involved with the 2 major reform exercises: the Ports Industry Review phase of the Onshore Costs Review, and the Maritime Review phase of the Review of New Zealand Shipping. Transferring to the land transport industry, she continued the review process into the taxi and licensed transport industries, and played a key part in the deregulation of the New Zealand taxi industry and the reforms of the urban transport system. Since 1990 she has been involved with the development of standards for all aspects of road construction and maintenance, research and training, and economic matters such as competitive pricing procedures for the land transport industry, and services for people with disabilities.

### **John Preston**

John Preston graduated with an honours degree in Geography from Nottingham University in 1981 and was awarded a PhD in Transport Economics at Leeds University in 1987, for his thesis entitled "Evaluation of New Local Rail Stations in West Yorkshire". Since then he has been involved in a number of studies concerned with demand forecasting, economic evaluation, ownership and organisation of transport industries and the provision of travel information, being a grantholder on over 25 projects. He has written widely in the field of Transport Economics with over 30 publications. He has held a number of research positions, was the British Rail Lecturer in Rail Transport between 1990 and 1995 and is currently Senior Lecturer in Transport Economics.

### **Gabriel Roth**

Gabriel Roth was introduced to transport economics in 1956 when he joined the Road Research Laboratory as Rees Jeffreys Fellow to study the economic benefits from road improvements. He then became interested in the pricing of roads, his first paper on the subject being published in 1961. In 1963 he served on the Ministry of Transport's Panel on Road Pricing (the Smeed Committee), and in 1966 wrote the *Penguin Special Paying for Roads: The Economics of Traffic Congestion*. In 1967 he moved to Washington DC to serve in the World Bank which employed him on transport assignments in five continents and from which he retired in 1986 after writing the Bank's book *The Private Provision of Public Services in Developing Countries*. In 1995 he completed his book *Roads in a Market Economy* which discusses the commercial provision of roads on the model of telecommunications.

### **Nariida Smith**

Nariida Smith is currently Associate Professor in Management in the Graduate School of Business at the University of Sydney, Australia. At the time of the conference she was the inaugural Bus and Coach Association of NSW Senior Lecturer in Transport Management in the Institute of Transport Studies at that University. Her research in transport demand ranges from econometric modelling, data analysis and software development, to marketing research and in depth interviewing techniques. She

has a special research interest in urban public transport and teaches Urban Public Transport Management. Interest in integrated transport policies encompassing broad issues of land use and access has prompted recent research in non-motorised transport.

### **David Kilsby**

David Kilsby is an executive consultant with the Australian engineering and planning practice Sinclair Knight Merz. After graduating in mathematics and then postgraduate research in town planning, he worked with UK planners Colin Buchanan and Partners for two decades before joining Sinclair Knight Merz in 1993. His early interest in modelling urban systems broadened to include integration of land use and transport planning, the practical development of public transport, the processes and methods of planning, and social and environmental aspects of urban transport. His paper to the conference described recent work in New South Wales on older people's transport requirements.

### **John Dodgson**

John Dodgson is Reader in Economics at the University of Liverpool. He has an undergraduate degree in Economics from the London School of Economics, and a Masters degree from the University of Leeds. He has held visiting appointments at the Australian Bureau of Transport and Communications Economics, the University of British Columbia and the University of Wollongong. He has researched in Transport Economics for over twenty five years. Particular interests are the economics of rail services, competition policy, and transport and global warming. He has published in many journals, including the *Economics Journal*, the *Economic Record*, *European Review*, *Explorations in Economics History*, and the *Journal of Transport Economics and Policy*.

### **Chris A. Nash**

Professor Nash has a BA in Economics with First Class Honours from Reading University and PhD in Transport Economics from Leeds. He joined the staff of Leeds University in 1974 as BR Lecturer in Rail Transport, and was promoted to Senior Lecturer in 1988. He is currently Professor of Transport Economics at the Institute of Transport Studies. He is author or co-author of four books and some eighty other published papers in the field of project appraisal and transport economics, including (with Professor DW Pearce) a well known textbook "Social Appraisal of Projects". His consultancy experience includes two periods in Australia (in 1974 with the Commonwealth Bureau of Roads, and in 1982 with the Australian Railways Research and Development Organisations). He is joint editor of the *Journal of Transport Economics and Policy*.

### **Ewen Michael**

Ewen Michael is currently a lecturer in the School of Economics at La Trobe University, Australia. After graduating in Politics, he took a commission for four years in the Royal Australian Army Educational Corps. In 1980, he joined the Australian Railway Research & Development Organisation as a Principal Research Officer, responsible for most of its studies into passenger services and Community Service Obligations. When that organisation closed in 1986, he returned to La Trobe University to complete a Doctorate in transport policy. His research continues to focus on the application of Community Service Obligations policy and on the effects of privatisation and competition on Australia's transport infrastructure.



### **Barry Turley**

In 1991 Mr Turley became the Chief Executive of the Yellow Bus Company, New Zealand's largest urban public passenger transport business. His task was to lead change of the region's Council owned Transportation Division, through corporatisation into a service oriented successful commercial limited liability company operating in a deregulated competitive environment. Prior to 1991 he spent fourteen years as a senior executive in one of New Zealand's largest corporations managing change and achieving significant performance improvements from many of that corporation's diverse business activities.

### **Wayne Talley**

Wayne K Talley is the Frederick W Beazley Professor of Economics at Old Dominion University in Norfolk, Virginia, U.S.A. He has published extensively in the areas of urban, maritime and safety transportation. He is the author of *Introduction to Transportation and Transport Carrier Costing* and the coauthor of *Ocean Container Transportation: An Operational Perspective and Causes and Deterrents of Transportation Accidents: An Analysis by Mode*.

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<sup>1</sup> Papers and workshop reports from previous conferences in the series are available from: Conference 1 (Thredbo, Australia 1991) in *Transport Planning and Technology*, Vol. 15, No.s 2/4 special double issue guest edited by David Hensher; Conference 2 (Tampere, Finland 1991) edited by A. Talvitie, D. Hensher and M. Beesley 'Privatization and Deregulation in Passenger Transport', available from Auranen Ltd., Saksankatu 1, 30100 Forssa, Finland - fax 358 16 25854; Conference 3 (Toronto, Canada 1993) edited by J. Love and available from Ontario Motor Coach Association, 234 Eglinton Ave., E. Suite 412, Toronto, Ontario, M4P 1K5, Canada (Fax: +1 416 488 6141).

<sup>2</sup> The papers of the Rotorua Conference will not be published, but are available from the conference organisers (Fiona Knight, Transit New Zealand, P O Box 5084, Lambton Quay, Wellington, New Zealand, Fax: +64 4 496 6666 for \$NZ75 plus postage).