

URBAN PUBLIC TRANSPORT FUTURES: BROADENING THE POLICY DEBATE

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ABSTRACT

This paper considers some of the challenges facing governments who would like to support public transport if the case for its contribution to urban sustainability is proven. Technology and pricing futures for urban public transport are emphasised, interpreted to include the selection of appropriate public transport modes, especially the debate about the role of bus and rail-based systems; and the role that choice and pricing play in positioning public transport in the various transport markets (with consideration of the justification of subsidies).

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.

The aim of this paper is to 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 (see below). 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*.

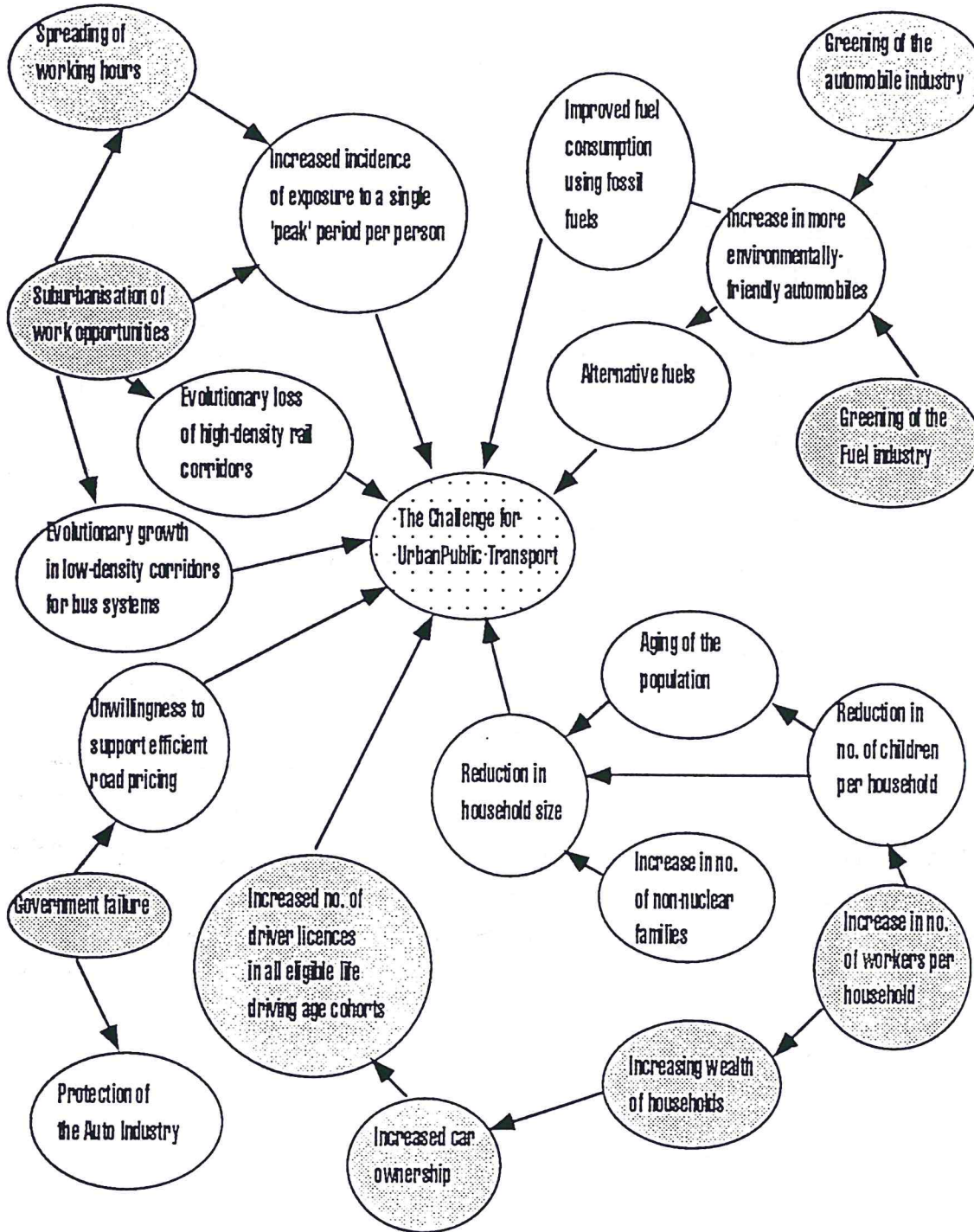


Figure 1. The Challenges for Urban Public Transport

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.

Our 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 bought 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: The message is clear: 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 applause 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. 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. 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 paper 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.

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