

4. Effecting Mode Shift to Transit

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4. EFFECTING MODE SHIFT TO TRANSIT

This chapter aims to identify the attributes and features required of a public transport system to make it attractive to potential users. It will report on the recent work of Paul Mees (2000) who has reviewed public transport operations in many cities and identified Zurich and Toronto as particularly useful models for transport planners.

Quality of service; infrastructure and passenger information are acknowledged as the key elements required to deliver successful public transport outcomes. Each is then examined in some detail in the context of the proposed Canberra service, along with relevant management issues.

4.1 PERFORMANCE CRITERIA

If mode shift is to be successful, the alternative transport system offered must aim to be highly competitive in the mobility marketplace. It must be easily accessible and affordable for all users including the elderly, people with disabilities, families with young children, etc. Public transport must provide a level of service (both frequency and reliability) that can strongly compete with the cost and flexibility offered by the private car. (Cervero, 1986, pp 303-4)

Paul Mees (2000) takes the argument beyond the attributes of the transport system itself and calls for a more holistic and multi-disciplined approach to enhancing the functioning of cities. He places heavy emphasis on the importance of integrating the planning processes and, with community support, encouraging the political process to expedite change:

“Good urban outcomes must be planned for. This will require first rate public transport, but as part of an overall set of policies which also includes urban planning, traffic restraint and measures to improve conditions for pedestrians and cyclists. Policies of this kind are much easier to ‘sell’ politically if the public can see that public transport provides a viable alternative to the car.”
(Mees, 2000, p 289)

To be successful, public transport must be simple to access, simple to navigate and unfailingly reliable. Mees nominates the transport systems operating in Zurich and Toronto as world leaders in the field. The services offered in these cities are comprehensive, integrated and, most importantly, very popular with users.

He suggests “...the critical issue is flexibility. And the key to flexibility for passengers is simplicity and predictability, not a bewildering array of constantly changing options. The latter produces confusion, not convenience. Paradoxically, to be flexible, public transport must also be rigidly predictable.” (p 289)

Citing the success of Zurich, Mees (p 134) notes the particular attention paid to timetabling of services and the linkages with the wider public transport operations within the city to ensure transit routes do not operate in isolation. A well developed feeder system permits easy transfer from one route to another, and where timetables are highly coordinated or frequent, can offer passengers an almost seamless service from point to point.

The Zurich and Toronto transit models provide services which minimise waiting for passengers. Timetables are supply rather than demand led. For a system to offer true flexibility the frequency of service and hours of operation must be set to maximise opportunities for travel, including connections, even if this means that some services are more lightly loaded than others.

This view is supported by Felix Laube, who notes that the traditional demand-based approach almost inevitably locks public transport into a declining role:

“The problem with demand-based scheduling is that there will be large gaps in public transport service at times when demand is low. Once these gaps exist, there is no reason other than the will of the scheduler to fill them, as there will never be any evidence of demand for services that don't exist. When there is regular service throughout, the fluctuation in demand is constantly monitored by the patronage on the individual services, thus allowing the travel market to function without the barrier of an 'expert's' wisdom...

“Differences in timetabling approaches have important implications for the development of a public transport system. The demand-based systems tend to be reactive, as the market has no chance to manifest any new areas of demand, while existing services that may no longer fulfil as many demand lines as when they were introduced are cut back. Demand based systems will therefore have a tendency towards service decline.” (Laube, 1998, quoted in Mees, 2000, pp 135-136)

These lessons should be taken into consideration in developing any new transit system in Canberra as the city's current network structure remains, despite the introduction of more through services in recent network changes, highly dependent on the hub and spoke model which require passengers to transfer at the town centre interchanges to complete their journeys.

A further aspect of establishing a successful public transport system is what Mees terms 'network effect' (pp 138-139) where the economies of scale derived from operating a high frequency integrated route network encourages and sustains patronage levels. Network effect enables public transport to overcome the law of diminishing returns associated with low elasticities of demand. He argues:

“The key to, and principal prerequisite for, the network effect is that passengers transfer between services. Rather than try to second guess people's travel needs with a plethora of routes, the public transport operator makes it possible for passengers to guide themselves to diverse destinations, just as motorists navigate the road system. Public transport emulates the flexibility of the car from the all-important perspective of the passenger.” (p 141)

Mees contends that passengers will trade off the inconvenience of having to transfer between services, and some indirect journeys, against a good level of service (that is high frequency and extended hours of operation) and low fares. The result is a 'go anywhere, anytime' service that for most trips matches the convenience of the car. (p 141)

Transfer-friendly timetables need to be backed up by transfer-friendly fares. This means that transfers must be free, with passengers paying for the distance travelled, rather than services used, generally though a system of fare zones. “...from a passenger point of view, transferring between services is an inconvenience: requiring an extra fare for the disservice is adding insult to injury.” (pp 136-137)

A fare system based on free transfers fits logically with an emphasis on periodical tickets to reduce boarding delays, as well as to encourage passenger loyalty to public transport.

In this regard the Canberra system is on track. In the 1999 network restructure, a distance based zoned fare system was introduced to replace the former inconvenient and inequitable per boarding fare system. The new system also permits intra zone transfers, enabling passengers to complete their journey on a single ticket.

According to Mees "...all genuinely successful urban transport systems...share a common feature, namely central regional planning by a public agency. Only central planning enables the provision of flexible transport options through a fully integrated network. This requires the following conditions:

- an integrated route structure which maximises opportunities for interchange and reduces duplication and overlap;
- fast, frequent, reliable service...throughout the day and evening;
- convenient, attractive and safe [bus stop] facilities;
- very frequent or co-ordinated timetables to link other routes;
- multi-modal fares (free transfers);
- easy-to-obtain, well presented route and timetable information covering the whole multi-modal network." (p 286)

Again citing the Zurich model, Mees notes that other operators, including those from the private sector should not be excluded from operating services as "...competitive tendering can sometimes be a good way of keeping costs down." (p 288)

Australia too, has numerous examples of State Government owned and operated public transport subjected to market testing (for example the bus services in Adelaide, Melbourne and Perth are now largely operated by various private firms on behalf of the public provider). However, the key to ensuring that service outcomes are maintained when operations are divided amongst different players is that the planning and co-ordination role remains with a single, publicly accountable authority. This finding should be borne in mind when developing a management structure to oversight the proposed new system for Canberra's Central National Area.

Finally, Mees rejects the notion that to be successful, public transport must incorporate the latest in technology. While he acknowledges that it is important for transport planners to utilise technology appropriate to the task, he warns against a tendency of "technological fetishism" (p 289) which can result in excessive investment in infrastructure at the expense of service quality. Mees illustrates his point by observing the relative vintage but high serviceability of the trams used in Zurich where scarce capital resources are invested in system upgrades rather than glamorous new rolling stock.

Armed with the knowledge of what underpins the world's 'best practice' transit operators, with particular reference to the work of Newman & Kenworthy (1999) and Mees (2000), it is possible to identify three key attributes which are fundamental to achieving good public transport outcomes:

- the quality of the *service* provided must meet the user's expectations;
- the *infrastructure* in place to deliver the service must be appropriate; and
- the level of *information* provided must be sufficient to convey an awareness and comprehension of the services provided.

4.2 SERVICE

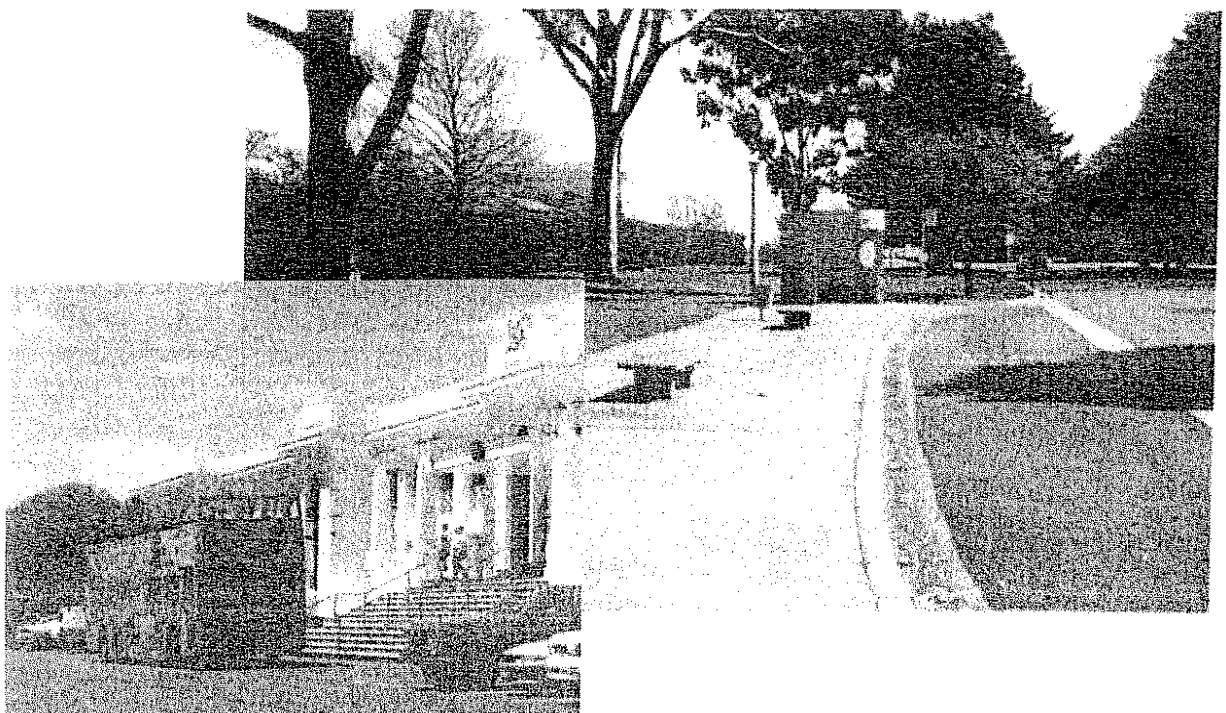
The level of service must meet or exceed the customer's needs. Service includes a range a factors including the route taken; the journey times; the frequency; the interpersonal skills of the driver; the cost; etc.

For success the service offered must have the following attributes:

- the routes operated must provide good linkages between trip origins and destinations;
- routes must permit easy interchange, especially at intermodal transfer points, and integrate well with the existing network.
- routes must be easily identifiable and the network highly legible, especially for visitors unfamiliar with the area;
- frequency of services must be clearly understood by passengers. If the service is of such regularity and consistency (such as every 10 minutes or less on every day) a published timetable may not be required. Lower frequencies, particularly where there are differences in operation between weekdays and weekends or at night must be clearly advised through a readily available timetable.
- drivers must have appropriate training to operate the bus and understand the service that they are providing and, most importantly, have the interpersonal skills to be able to deal with any queries or concerns from the public in a friendly and efficient manner.
- where fares are charged, the pricing structure, including any transfer options, etc must be simple, clearly advertised and well understood by all ticket sellers, including drivers, so customers are able to be offered the most appropriate fare quickly and efficiently. If multi ride; family, group; concession or periodical ticketing options are also available these should be widely promoted to potential customers.
- flexibility to meet the demands of special events or circumstances - for example when continuous shuttle operations are required to move large numbers of people or where special events or circumstances require temporary re-routing.

A good example of differing levels of service is demonstrated at Figure 4.1. The main photo shows the existing ACTION bus stop which is located well away from the main entry to Old Parliament House. In contrast, the inset photo shows the 'Canberra Tour' service picking up and dropping off passengers right at the front door.

Figure 4.1



Source: Author (2000)

4.3 INFRASTRUCTURE

Arguably the most important aspect of attracting customers to any product or service is the first impression it makes on potential users. This is particularly so in the case of public transport, which in most instances is the vehicle used or the supporting infrastructure such as bus stops. It is therefore essential to ensure that consumers are impressed by what they observe, even if they don't initially use the service. Buses and bus stops must be well presented and look *inviting*.

Figure 4.2 ACTION midibus – note ramp for easy access



Source: Author (2000)

Vehicles

The vehicles used in the service must offer the following characteristics:

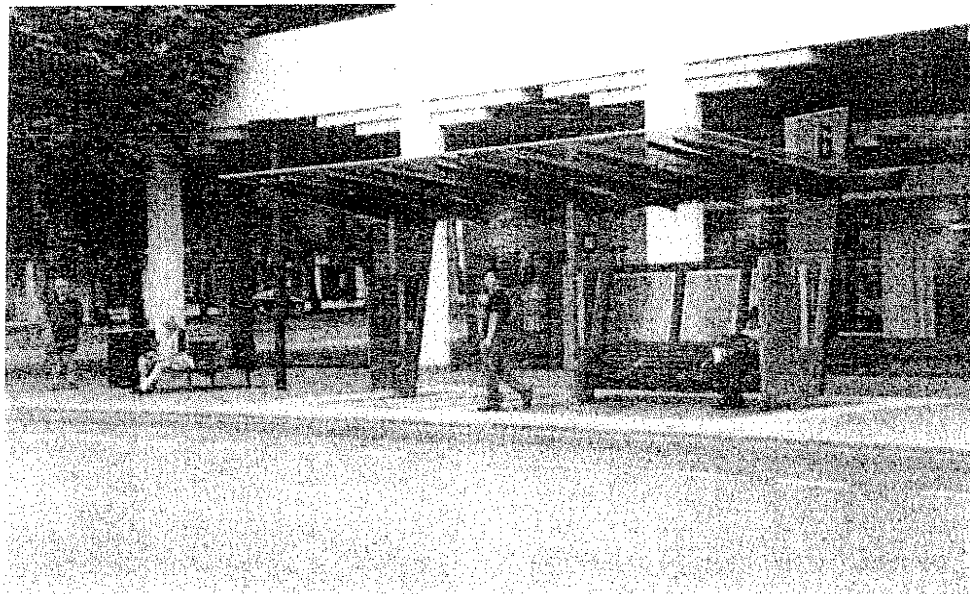
- Attractive, clearly identifiable, safe, comfortable (air conditioned) and clean;
- Easy access to all passengers - with low floors and ramps for people with disabilities, prams and young children, etc. (Figure 4.2) Two door operation is preferable to speed entry and exit;
- Interiors designed to provide for multi-purpose use. Although the buses would primarily be used to provide relatively short linking trips, they should offer the flexibility to be used in route network service and short charter operations. They must, however, facilitate easy and fast pick up and set downs. Standing space should be designed to accommodate passengers requiring short trips and peak loads while sufficient seating is required for those taking longer journeys.
- Noise and exhaust emissions must be minimal and meet all requisite standards. The standard of vehicles used should, wherever possible, represent best practice in meeting environmental outcomes;
- Efficient, reliable operation with the performance capability needed for the operational task.
- Where fares are charged, efficient and speedy ticketing and validation technology should be used to facilitate swift passenger boarding of buses.

Bus stops

Like the buses themselves, the bus stopping places are integral in attracting patrons to the service. Bus stops must offer the following characteristics:

- Distinctive, stylish, functional, and be immediately identifiable as part of a transit network. (Figure 4.3) Locate stops in safe, easily accessed locations as close as possible to the public entrance of buildings they serve. Where practical, incorporate other nearby stops into the network to avoid passenger confusion arising from multiple stops.
- Modular design for easy expansion, relocation or replacement. Use of consistent landscape elements and paving treatments. Ensure stops are kept clean, graffiti free; well illuminated; and regularly maintained.
- Display service information in a functional and attractive manner. Where considered appropriate, other supporting material particularly pertinent to the precinct and the likely user should be provided. Maps, directional and multi-lingual signage and interpretative material as well as generic utilities such as telephones and toilets, may also be provided. (Figure 4.4) In this way, the bus stop can serve a multi-purpose function and, in doing so attract potential patronage, enhance surveillance and security.
- Enhance legibility through the practice of naming and/or numbering of individual stops.

Figure 4.3 Bus stop – Civic Interchange – note stylish design which incorporates seating & timetable information



Source: Author (2000)

Figure 4.4 City Map – Canberra City – spatial orientation is essential to assist visitors



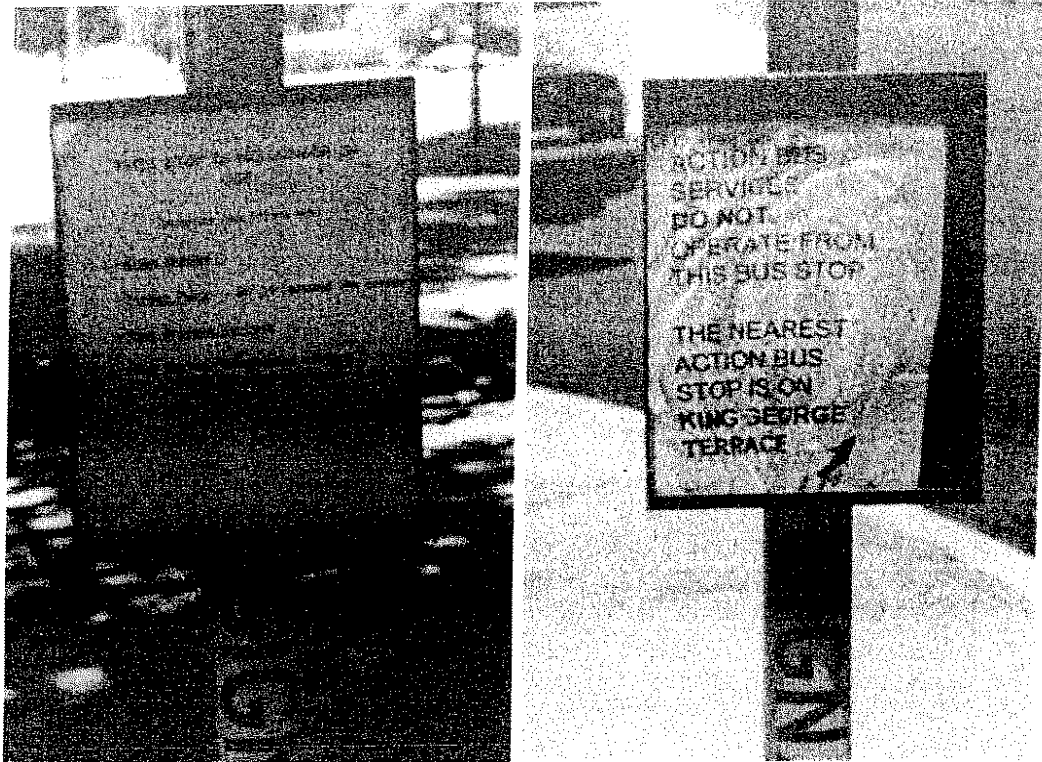
Source: Author (2000)

4.4 PASSENGER INFORMATION

The third important element in any successful public transport operation concerns the ready availability of information which will allow customers to make decisions about the product or service being offered. As noted above bus drivers and bus stops are particularly important sources of operational information for customers, but it is also essential to provide unforeseen service information (eg regarding delays or breakdowns) and the promotional information about the services to potential customers. Passenger information must have the following characteristics:

- On-vehicle route and service information (eg route maps and timetables) - to both assist with the efficient delivery of passengers to their destinations and to provide them with reassurance when travelling in an unfamiliar environment. It is also possible to include driver spoken or pre recorded audio commentary and 'next stop' information.
- Bus stop displays showing route and timetable information. Advanced global positioning technologies, which are becoming more widely available, may also be applied to provide visual displays and audio announcements to convey real time bus arrival information; service alterations; delays; etc. Figure 4.5 illustrates the importance of the bus stop display in providing passenger information.
- Inquiries should be encouraged through all media. Telephone and internet links should be standard and operational whenever services are running. Automated (menu-based) telephone services and web sites may also be offered to enhance efficiency and reduce costs.
- Vigorous promotion and marketing campaigns to launch services and to maximise market share. Marketing is particularly important when potential users are unfamiliar with the service (eg car drivers who are not exposed to the information displayed on buses or in bus stops; and visitors who are unfamiliar with the city and its services). As the total user market comprises a series of niche markets, it is essential to tailor marketing campaigns to the needs of each segment. Marketing could also be supplemented by linking into community education programs aimed to enhance awareness of the need to reduce car dependence to meet Greenhouse targets.

Figure 4.5 Unused bus stops near the National Gallery in the Parliamentary Zone – the information offered is likely to cause confusion & disorientation, particularly for visitors



Source: Author (2001)

4.5 MANAGEMENT

Travel is a commodity like any other in a market-based economy. Transit, therefore, must compete hard against the other options, including personal mobility offered by cars and bikes, to gain market share.

Sound management is vital to plan and operate services in an efficient and cost effective manner. To maximise market share (or modal choice), public transport systems, with or without community service obligations, should model their operations and structure like any other business seeking to maximise the return (or benefit) from the resources invested.

A transit system may or may not have shareholders as such but will have stakeholders. Stakeholders may represent a diverse array of interests ranging from the passengers (customers) and employees; business interests, government; to the general community (seeking cost-effective and environmentally sound outcomes). A good transit operator will forge close links with its stakeholders and through those interactions and consultations aim to meet their expectations through establishing goals and rigorously evaluating its performance against such objectives.