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TOURISM & TRANSPORT FORUM

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1.0 EXECUTIVE SUMMARY

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Image courtesy of Veolia Transdev

Why this issue matters

Public transport makes a crucial contribution to liveable cities. Public transport provides access to employment, education, recreation and community services, as well as contributing to social equity and relieving traffic congestion.

2011 is seeing unprecedented attention given to public transport policy by our political leaders, media and the public. This reflects growing traffic and public transport congestion due to population growth and delays in overdue transport infrastructure investments. Public transport issues are also gaining greater recognition as a greener urban transport solution, as Australia faces the imperative of a shift to a lower greenhouse gas-emission economy.

An international comparison of public transport mode share (based on journeys to work) shows that Australian cities have a lower share than European cities and some of the larger cities in the USA, including New York and Chicago. However, public transport has greater importance in central areas of our cities. For example, 77 per cent of people who work in Sydney's CBD use public transport to and from work.[1]

The lower public transport mode share in Australia relates to the lower average population density of Australian cities.

If our cities are to grow sustainably in the future, significant investment will be required in all forms of public transport infrastructure as well as improved integration of development and transport planning.

Public transport is increasingly being used in our major cities to travel to work or education. Since 1977, total public transport patronage in Australia's major cities has grown by 83 per cent compared to population growth of 46 per cent. In the five years to 2008, annual average growth in public transport patronage was more than twice the annual average over the 1977 to 2003 period. Rail is the largest mode of public transport with a 60 per cent share of passenger kilometres, followed by buses. Ferries and light rail have a smaller share, but are important to areas they serve.[2]

Rising demand for public transport has affected service reliability and accessibility, especially in locations where investment in transport infrastructure has not kept pace with demographic changes. This is turn affects the passenger experience - a key factor in how people choose between modes of transport.

A key challenge confronting public transport operators is how to accommodate rising demand while improving customer satisfaction with the service provided.

[1] LEK Consulting (2010), ibid page 14. In contrast, Melbourne has a 52 per cent, Brisbane a 56 per cent and Adelaide a 30 per cent share of commuter trips to the CBD. Overall all journeys, Sydney has the highest public transport mode share among Australian cities at 21 per cent.
[2] LEK Consulting (2010), 'Meeting the funding challenges of public transport', a report for Tourism & Transport Forum, page 14.

What this report delivers

Striking a highly positive note, this report traces a quiet revolution within public transport service operations that in the last few years has delivered major benefits to the Australian community. But this report goes further, highlighting research that indicates the path to further improve the customer experience of public transport.

Historically, decision making in the public transport sector by political leaders, key public sector decision makers and service providers has been based on operational outcomes, with the focus on technical aspects of service delivery. In the past, customers were often considered an obstacle to achieving the technical aspects of service delivery, viewed as akin to 'self-loading freight'.

Now, operators have shifted their approach, with many introducing 'Customer Charters' to change their focus to underlying passenger needs. This shift has led to a realisation within public transport operators that a customer-centric focus to providing public transport can assist in meeting operational and performance outcomes more efficiently, as well as lifting customer satisfaction.

Recommendation 1 – All public transport operators should continue to shift to a customer-centric focus.

In many cases, public transport operators have moved faster in improving customer service than political leaders and key public sector decision makers (Treasury and regulatory departments such as Departments of Transport) have understood. This report is aimed at highlighting to these groups the community benefits of their support for customer service innovations by public transport operators.

Recommendation 2 – Political leaders and key public sector decision makers should support funding of trials of more customer-centric investment by public transport operators and system-wide implementation of innovations that offer strong trial results.

In the context of growing populations, rising demand and a more customer-centric approach, this report seeks to examine what public transport users want and the elements of the service they value. It seeks to assist political leaders and policy decision makers, as well as public transport operators by:

- Providing a better understanding of issues important to the travelling public. This includes their perceptions about public transport as well as what they expect from a public transport service;
- Identifying the barriers to increased public transport use; and
- Identifying targeted innovations that respond to customer perceptions and the barriers to using public transport.

How this report was developed

To achieve these aims, the report draws together theoretical underpinnings, customer perspectives, and operator experiences of delivering customer-centric public transport in Australia's major cities. The analysis draws on both review of the literature and a customer survey undertaken by TNS Global Market Research. The survey involved interviews with 2,000 people in Sydney, Melbourne, Brisbane and Adelaide.

A series of interviews with public transport operators was also undertaken, which is used to provide nine case studies of operator experience in introducing innovations in service delivery.

The research reveals that the key factors which contribute to customers' perception of public transport are frequency, reliability, overcrowding and ease of interchange. Consequently, addressing these issues and adopting a customer-centric focus will help to lift customer satisfaction and reduce barriers to increasing public transport use.

The report suggests ways to change customer perceptions of reliability and frequency, including the provision of real-time information on services and replacing timetabled services with services at regular intervals. Providing quiet and premium carriages are also reviewed as innovations aimed at improving the passenger experience, along with smartcard ticketing and Wi-Fi services.

Customer perceptions and expectations of public transport

It is clear that customers have evolving expectations about public transport use. Today, public transport is viewed as more than simply a means of getting from A to B - it is about a complete experience for the customer. Just as consumer expectations of other products and services are rising, customers are seeking new standards and service improvements in public transport, making a customer focus vital for operators to meet customers' needs, better manage demand and deal with changing travel patterns.

The research undertaken by TNS for this report uncovered customer perceptions about using public transport in Australia. TNS' findings revealed that:

- Customers appreciate the environmental benefits and reduced congestion that result from public transport use; and
- Customers remain concerned about issues such as:
  - The frequency and reliability of public transport services;
  - The inconvenience associated with interchange; and
  - The effects of overcrowding.

The research also identified that customers hold a number of important misconceptions about public transport use. This is particularly evident when customers' views of public transport overall are compared to their perception of an individual trip they have made. Customers also appear to consider public transport in other international and Australian cities more favourably than the system operating in their own city. This perception is often contrary to actual outcomes and achieved performance rates.

This report recommends that each public transport operator should provide ongoing monitoring of customer satisfaction that is independently produced. Network-wide top line results of this monitoring should be provided by a customer-facing transport authority. This report recognises that public transport services vary in their relative amenity given a range of legacy issues and operational constraints. For example, a service that has suffered significant overcrowding due to strong demand and restricted investment will struggle to report relatively high customer satisfaction. However, each service needs to benchmark its performance over time, to have early warning of problems and allow detailed analysis of the impact of innovations. By benchmarking the satisfaction of key traveller segments, more compelling evaluations can be made of trials of innovative approaches to service delivery.

Recommendation 3 – Public transport operators should institute independent benchmarking of customer satisfaction and routinely make public top line results. Benchmarking results should also be used as the core input to evaluating the success of trials of innovative approaches to service delivery.

A contributor to lower customer perceptions of public transport in their own city is the focus of the local media overwhelmingly on bad news stories about public transport rather than the many positive developments. Consequently, transport ministers are most often seen in the public domain taking on the role of crisis manager, and political champions of public transport have been comparatively rare. Tourism & Transport Forum (TTF) believes that given the growing importance to the community of public transport, it is incumbent upon political leaders to drive the required shift in customer perceptions. Transport ministers should lead the political debate in favour of public transport by championing improvements and innovations that enhance customer service. This will also assist in ensuring integrated public transport solutions in each jurisdiction.

Recommendation 4 –The minister responsible for public transport in each state and territory should be charged with implementing a positive program to develop public transport solutions and champion progress by public transport operators in delivering improved customer service.

Four key barriers to increased public transport use

Based on the research undertaken by TNS and review of the literature, four key barriers to increased use of public transport have been identified. These barriers are:

- **Reliability and frequency** – critical service attributes to customers, it is considered a fundamental feature of a modern, efficient, public transport system;
- **Access to services** – this includes access to begin a trip as well as reasonable access to a variety of destinations;
- **Interchange** – customers will typically seek to avoid interchange during a journey. This is largely because interchange can involve the risk of delay and uncertainty for customers; and
- **Overcrowding** – while linked to frequency and capacity, overcrowding on its own stood out as a distinct obstacle for customers. Customers are concerned about the effects that overcrowding has on their personal space and the impact that behaviour of other travellers has on the enjoyment of their journey.

We note, in addition, that the issue of cost arose throughout the research and literature review. Conflicting perspectives were revealed. On the one hand, customers clearly prefer lower public transport fares. On the other hand, customers have indicated that they may be willing to pay more for some trips if service was improved and compare public transport fares with the cost of competing modes. For example, much higher petrol prices or a potential broadly based road pricing regime would be expected to make public transport consumers view their fares as better value.

Overcoming barriers to public transport use

A key to overcoming the barriers to public transport use is to make customers, and their experiences, the central focus of the business. Achieving meaningful and sustainable transition to a customer-centric public transport service requires customer needs to be placed at the heart of all decision making. Without this first step, innovations and investment will not, on their own, successfully improve customer outcomes.

In this report we have applied a customer-centric focus to the barriers to public transport use, informed by two major themes emerging from the TNS research:

- Public transport customers are averse to uncertainty; and
- Customers are empowered by a sense of control over their environment.

The report therefore focuses on the barriers of reliability, frequency and overcrowding. These issues have typically been addressed from an operational and technical perspective. Addressing them by placing customers at the heart of the decision-making process demonstrates a deeper understanding of, and responsiveness to, customer needs, while also improving customer confidence in using public transport. These solutions also tend to cost far less and are easier to implement than more traditional, operationally focused solutions.

Recommendation 5 – In making innovations in public transport service delivery, customer needs should be at the heart of investment decisions. This report advocates a high priority to investments that reduce uncertainty faced by customers and give them more sense of control over their environment.

Innovative solutions to the key barriers identified in the consumer research are as follows.

Reliability and frequency

Overcoming the barrier of unreliable and infrequent services requires addressing disruptions and delays, as well as considering the uncertainty that delays and disruptions cause from the customer's perspective. Two innovative solutions are:

- **Real-time information** – providing customers directly with information about specific services, whatever their location. The research revealed that the appeal for real-time information was consistent across all customers and all locations. Yarra Trams' tramTRACKER™ information service is an example working well in practice; and
- **Adapting service patterns** – an approach to reducing customer anxiety and travel uncertainty is to replace timetabled services with services arriving at regular intervals (i.e. every five to ten minutes). Sydney's Metro bus service is a successful example of providing services at regular intervals rather than based on a traditional timetable service. This approach also recognises the information processing challenges facing the customer.

Recommendation 6 – Providing real-time information and shifting from timetables to regular interval services are recommended as high priorities for new investment. This provides customers with greater certainty and eliminates the perception of unreliability often associated with timetables.

Overcrowding

Addressing overcrowding means more than simply increasing service frequency and capacity. It means focusing on the experience of customers during their journey. It is essential to give customers the sense of having their own personal space and a degree of control over their environment. Two innovations with respect to overcrowding are:

- **Quiet carriages** – provide designated quiet carriages that would also be free from, for instance, school children. While this solution would not increase overall capacity, it is a low-cost option to improve the customer experience. The Queensland Rail trial of quiet carriages in South East Queensland was found to be highly successful and it has now been rolled out more broadly across the entire network; and
- **Premium carriages** – premium carriages offer customers additional services for an additional cost. These services may include a guaranteed seat, free newspapers, Wi-Fi or beverages. This allows those customers who value such services the option to pay more for them. The premium carriage concept is likely to hold greater appeal to longer distance travellers.

Recommendation 7 – Quiet carriages and premium carriages should be trialled where appropriate to help reduce the loss of consumer amenity through overcrowding.

Other innovations

Other technological and service advancements will increasingly play a role in overcoming barriers and improving service outcomes for customers. Two in particular that are gaining momentum in Australia are smartcard ticketing (tackling elements of the interchange challenge) and Wi-Fi access. We note, however, that advances in these areas are fast-moving, and that operators need to plan to accommodate future developments in technology.

Smartcard ticketing can have major secondary benefits in enhancing trip and customer data availability. Wi-Fi access is one innovation that promises to transform the idea of commuting as "lost time" which can significantly change the valuation of the customer experience of public transport. Pilots of Wi-Fi access should be explored which, where successful, can be rolled out network-wide. The experiences of some operators in introducing such services successfully are detailed in the body of the report.

Recommendation 8 – Wi-Fi access is a highly popular innovation with customers and should be trialled and implemented where practicable.

In considering the practical implications of a customer-centric strategy for public transport operators, this report includes the following nine case studies that highlight important opportunities as well as some of the challenges:

1. Metro Transport Sydney: targeted marketing campaign;
2. Queensland Rail Customer Charter;
3. Veolia Transdev's Going for GreenTM initiative;
4. Small operator, customer-centric service (Manly Fast Ferry by Bass & Flinders);
5. Yarra Trams real-time information;
6. Sydney's Metrobus service;
7. Quiet carriages on Queensland Rail;
8. Smartcard ticketing – Cubic Transportation Systems; and
9. Wi-Fi at Circular Quay station by Railcorp.

This report identifies a highly positive cultural change within our public transport operators towards a customer orientation, which is leading to improved customer service. This change and its associated investments are worthy of more funding and public support from political leaders and key public sector policy-makers. Each innovation should be trialled in the particular operation using sophisticated benchmarking and evaluation before being introduced across the system.

By lifting customer satisfaction of public transport users our whole community stands to significantly benefit.

While improvements in customer service are not a substitute for necessary investments in infrastructure and rolling stock to support public transport delivery, they are highly complementary. Lifting passenger demand through improved customer services makes further investment in infrastructure and rolling stock far easier to justify in a financial sense, but also creates a more committed user-base supportive of increased operational capacity and reduced media criticism of public transport delivery.

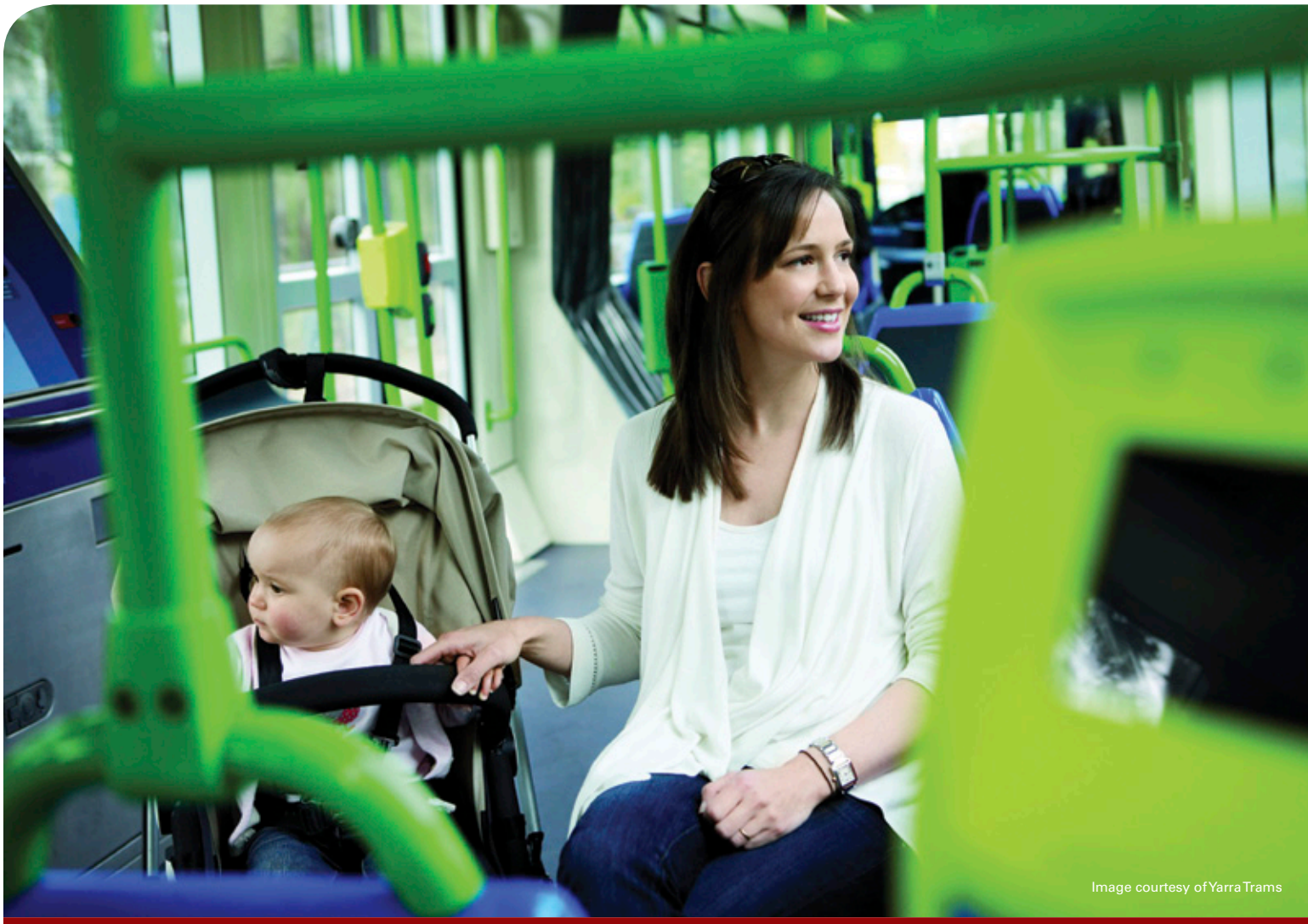


Image courtesy of Yarra Trams

2.0 INTRODUCTION AND BACKGROUND

In this chapter we identify the objective of the report and the method used to undertake the analysis. Importantly, we identify the benefits of considering the issues that are the focus of this report. We also provide some relevant background on the customers who are the focus of the study.

2.0 INTRODUCTION AND BACKGROUND

2.1 Context and method

This report examines what customers of public transport want and value in the service. It follows on from TTF's 2010 report, Meeting the Funding Challenges of Public Transport, which identified cost savings and revenue-generating initiatives available to operators that had the objective of making public transport more financially sustainable.

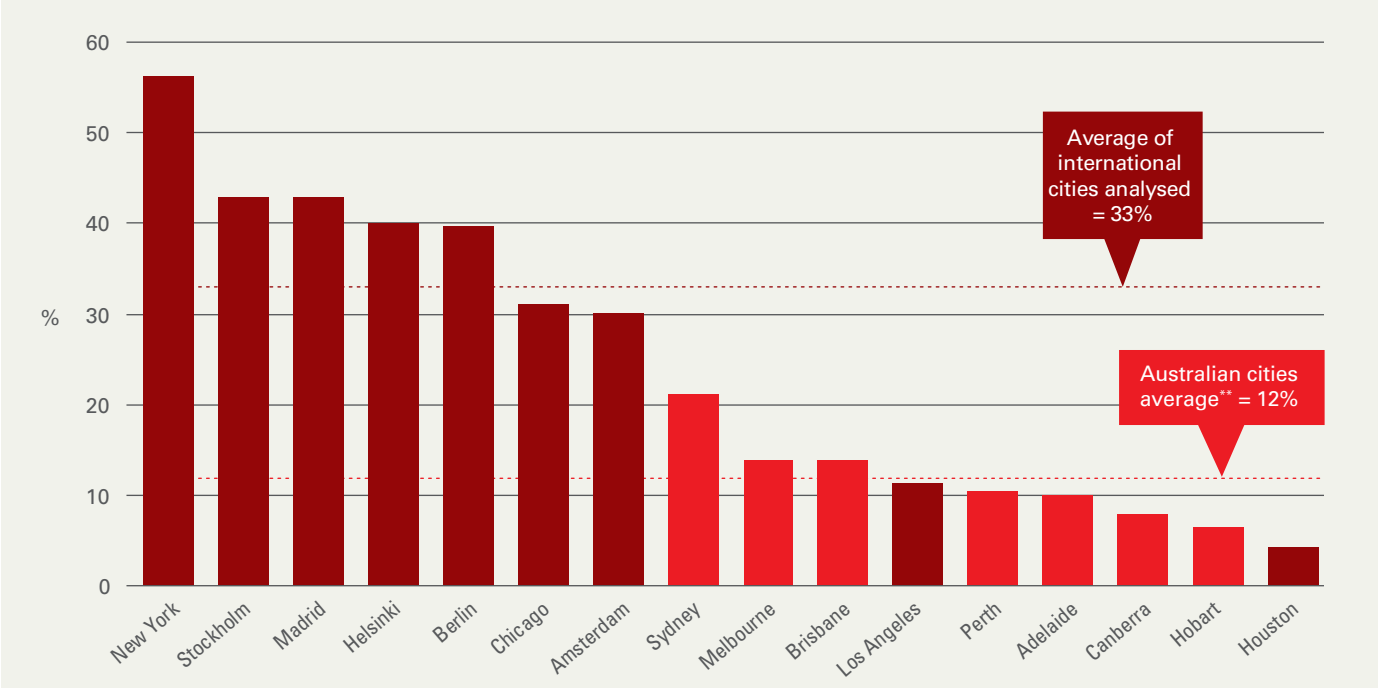
The emphasis of this report is the experience of public transport from the customer perspective. In this context, the report seeks to assist political leaders, key public sector policy makers and operators by:

- Providing a better understanding of the travelling public. This includes their perceptions about public transport as well as what they expect from a public transport service;
- Identifying the barriers to increased public transport use; and
- Identifying targeted innovations that respond to customer perceptions and barriers to using public transport.

The report draws together theoretical underpinnings, customer perspectives and operator experiences of delivering customer-centric public transport in metropolitan Sydney, Melbourne, Brisbane and Adelaide. The analysis was undertaken in three phases:

- Phase 1 – this phase involved a domestic and international literature review of stated preference research to identify the service attributes that public transport customers value the most and explore the trade-offs they are willing to make when choosing between attributes. This literature review was complemented by a survey of domestic and global best-practice initiatives that have been implemented to meet customer requirements.
- Phase 2 – in this phase, findings from phase 1 were applied to the design of a customer survey, which was undertaken by TNS in 2010. This included two key components:
  - Qualitative research through an online bulletin board; and
  - Quantitative research through interviews with 2,000 people in Sydney, Melbourne, Brisbane and Adelaide.
- Phase 3 – this phase involved a series of interviews with public transport operators. The interviews sought to understand the needs of their specific customers and the challenges operators had faced in addressing customer requirements and expectations. This phase also explored initiatives that operators have put in place to enhance customer satisfaction leading to the development of a number of case studies of particular innovations in customer service.

Figure 1 - Public transport patronage - share of trips to work*[3]



Note: *For Australian and US cities the figures represent percentage of workers and for European cities represent the percentage of trips to work. **Average of Australian cities, not weighted for population. (If weighted for population, average = 16%)

Source: US Census – 2008, EU Census – 2004, Australian Census – 2006

[3] L.E.K. (2010) For the Tourism & Transport Forum, Meeting the Funding Challenges of Public Transport, p.16.

Despite significant fare subsidies and strong growth in patronage in recent years, Australian public transport continues to have lower mode share and cost recovery rates than many other countries. In part, this relates to the greater geographic challenges in Australia with lower population densities in our major cities.

Yet it is expected in coming years that the public transport mode share in Australia will grow, with this growth set to accelerate in response to growing traffic congestion and environmental pressures on private vehicle use. It is also expected that coming years will see a greater prevalence of transit-oriented development in Australia that will further support increased public transport use.

Approximately 35 per cent of total operating costs are recovered in Australia. Internationally, cost recovery of operating costs averages around 60 per cent[4]. While cost recovery is not necessarily a good indicator of efficiency, improved cost recovery is essential to the long-term sustainability of Australia's public transport system.

Given the present low levels of cost recovery for public transport, it is essential that barriers to customers using public transport are identified and addressed.

Report structure

The remainder of this report is structured as follows:

- Chapter 3 identifies customer perceptions and expectations about public transport. It also seeks to identify the evolving expectations of customers about the services they receive;
- Chapter 4 draws upon a review of the literature and, combined with the research undertaken for this study, identifies the four key barriers to increased use of public transport; and
- Chapter 5 seeks to identify options for overcoming those barriers by placing customer needs at the heart of decision making. This chapter also features the nine case studies that provide a practical introduction to how customer-centric strategies are being implemented.

2.2 Benefits of customer-centric service

Greater public transport use has many benefits for customers, operators and society as a whole. Increased public transport use carries significant social benefits. In particular, it can reduce greenhouse gas emissions as use of fossil fuels falls, as well as curtail the growth in demand for more private car use, thereby reducing road congestion and deferring significant investments in road capacity.

Public transport customers will be more satisfied with their trips if customer-centric service is provided. As a consequence, they are more likely to use public transport for trips they need to take. With increased passenger flows, operators can increase the efficiency of their assets through economies of scale as well as improve cost recovery. In addition, further investments in the operating capacity of public transport are more likely to stack up, which can entail further economies of scale.

2.2.1 From an operator's perspective

Operators gain significant benefits in terms of revenue, efficiency and positive staff engagement from a customer-centric system and the corresponding increase in use of their public transport service.

Public transport is most efficient when rolling stock is operating at near capacity. This is achieved for most modes of public transport only during peak times. During non-peak times and weekends, public transport is at its least efficient due to low usage. Encouraging more public transport use by placing customers at the centre of transport systems can assist operators in the more efficient use of assets.

Increased usage can also carry with it the benefits of increased fare revenue. Many public transport systems find it difficult, if not impossible, to achieve full cost recovery. A customer-centric system can significantly improve fare revenue and thus cost recovery. This is particularly the case if increases in patronage occur in periods other than the peak period.

A greater focus on customer experiences encourages better staff engagement. A central focus on the customer provides employees of an organisation with a clear objective in undertaking their work. As a result, motivation among staff can improve, enhancing organisational outcomes.

It is important to note that differing natures and preferences among customers present challenges for operators. Operators are forced to make trade-offs when directing investment and resources towards the needs and wants of different groups. For example, operators have to weigh the marginal costs and marginal benefits of improving services for frequent customers versus those of attracting less frequent or non-users onto the system.

These trade-offs were discussed with operators within the context of the goal to increase patronage and strengthen revenue streams. There was a broad acknowledgment that the ability to increase patronage during peak periods was limited by emerging capacity constraints. Targeting non-users, on the other hand, was not seen as a viable investment, given their lack of propensity to switch modes. Many non-users have restricted access to public transport as they live in poorly serviced suburbs. Opportunities to increase patronage were chiefly seen to stem from increasing the off-peak usage of less frequent users and enticing more frequent users to utilise public transport services for a wider variety of trips. These target customer groups were broadly referred to as the 'near market'.

2.2.2 From a customer's perspective

Customer-centric systems provide significant benefits to current users of public transport. Improved customer service and systems tailored to customer preferences lead to increased customer satisfaction, which in turn increases the likelihood of current users relying on public transport for more of their transport needs. Research shows that, in the long term, one public transport trip tends to replace more than one car trip, as people adjust their habits and increase the regularity of their public transport use.[5]

Increased public transport patronage in turn promotes increased investment in public transport services and systems by both the government and private operators. This results in further improvement in services for the individual customer; for example in the form of increased frequency and capacity, or an upgrade in rollingstock.

[4] L.E.K. (2010) ibid, p.24.
[5] Rural and Regional Affairs and Transport References Senate Committee, 2009. Investment of Commonwealth and State Funds in Public Passenger Transport Infrastructure and Services., p26.

A customer-centric service also has the potential to encourage less frequent users and non-users to travel on public transport. The barriers to using public transport such as reliability, interchange, access and crowding mean that for some people public transport is not an attractive option. Addressing these barriers, by focusing on customers, will increase the attractiveness of public transport to non-users and less frequent users.

2.2.3 From society's perspective

The complete benefit of attracting a new user to a public transport system cannot be fully realised by the operator or the customer. This is because some of the benefits of increased public transport use accrue to third parties. Such benefits are commonly referred to as externalities. These externalities include the environmental benefits and reduced road traffic congestion that result from a reduction in car usage, as well as the benefit of avoiding the cost associated with deferring the expansion of road capacity. Additionally, there is a societal benefit to providing better access to employment and social opportunities for groups such as the elderly, youth, or the disabled. This 'external' or public value should not be underestimated.

Despite the significant societal benefits of public transport, it cannot compete with the convenience of passenger cars for all trips. Even the most efficient and highly patronised public transport systems in the world cannot cater for every trip or to the needs of every passenger. Environmental gains and the decongestion of roads, nevertheless, do represent significant social benefits of reducing our reliance on cars. The extent to which public transport is able to increase its market share in the future will depend in part upon changes in the relative prices of competing modes of transport, in particular whether or not a more broad-based, road-user pricing mechanism is introduced in metropolitan areas. The relative reliability, comfort and convenience of competing modes, both actual and perceived, also has a significant influence over customers' transport choices and the impact of car dependence at a societal level.

2.3 Who are the customers?

As previously indicated, TNS undertook a customer survey conducted through a bulletin board and interviews with 2,000 people in Sydney, Melbourne, Brisbane and Adelaide. For the purpose of interpreting the quantitative results, three broad customer categories were identified. These categories and their characteristics are defined and discussed in Table 1 below.

Frequent users can be encouraged to undertake additional trips and understand the barriers hindering trips for less frequent users and non-users.

2.3.1 Customer segmentation

Best-practice market research relies on segmenting customers into different groups according to 'common' characteristics. However, the TNS research found that this poses challenges in the case of public transport customers. Each customer uses public transport for different reasons, be it commuting to work or travelling to a nearby shopping centre. There is also variance among customers in the importance each one places on different elements of the journey – some customers would rather wait longer for a seat, while others prefer to walk a longer distance to avoid a mid-journey change of mode.

There are significant differences in perceptions between cities, as well as differing attitudes within cities, based on demographic and socio-economic characteristics.

This study uses broad assumptions around user groups; however, it recognises the reality that public transport customers are a highly diverse group. A key implication of the TNS research for public transport operators is that accurate customer segmentation is needed to drive decision making on how to most cost effectively improve customer service. Thankfully, an important secondary benefit of introducing smartcard systems is provision of much improved trip and customer data to operators, making customer segmentation far more straightforward.

Table 1 - Meeting the customers

Customer category	% of surveyed customers	Characteristics
Frequent users	33%	• Use public transport at least once a week. • On average, take 7.3 trips on public transport per week. • Undertake a majority of trips for the purpose of commuting to/from work. • Predominantly make trips during peak periods on weekdays. • Have key priorities that revolve around changing aspects associated with day to day travel: namely fares, reliability and frequency. • Do not rank amenity factors, such as cleanliness of vehicles, as major concerns when considering increased public transport use.
Less frequent users	42%	• Use public transport less than once a week, but more than once a year. • Indicated that cleaner vehicles, more frequent services and improved security at stations/stops were factors that could increase their use of public transport.
Non users	25%	• Use public transport less than once a year or never. • Reported that barriers to use included reliability and frequency, and also identified cheaper fares as a catalyst that could potentially increase their use of public transport.

Source – TNS

Image courtesy of RailCorp

3.0 CUSTOMER PERCEPTIONS AND EXPECTATIONS OF PUBLIC TRANSPORT

In this chapter we identify perceptions about what attracts customers to public transport as well as what may deter them. We also identify some misconceptions customers may hold about public transport. Finally, the chapter investigates customers' evolving expectations of public transport.

3.0 CUSTOMER PERCEPTIONS AND EXPECTATIONS OF PUBLIC TRANSPORT

3.1 Perceptions of public transport

The research undertaken by TNS uncovered some interesting insights into customers' perceptions and expectations of public transport. What is clear is that customers have high expectations of public transport. This is reflected by the fact that customer satisfaction remains relatively low while the intention to use public transport is high. Furthermore, customers' perceptions are not merely based on the experiences they have while on the train, bus or tram. Customers' perceptions are also shaped by the experience of the entire journey and by media reporting which tends to accentuate failures in delivery of public transport services. Additionally, the research indicated there is a gap between people's perception of public transport and the reality of the services that are provided.

3.1.1 What attracts customers to public transport use?

There are many elements of a public transport journey that invoke positive reactions from customers and attract them to use the service.

Growing concern about the impact of car use on the environment is providing public transport with a 'competitive edge' over private vehicle use. This is based on the view from customers that public transport is an environmentally superior option to private cars. TNS research found that in all cities, between 67 per cent and 70 per cent of customers felt that the environmental friendliness of public transport put it at an advantage over other modes of transport. Research undertaken by Metlink supports this finding. The Metlink research found that the environmental benefits of public transport were leading people to increase their use of services.[6]

Traffic congestion was also identified as a key factor attracting customers to public transport use. Even public transport modes that encounter congestion, such as buses, are viewed favourably by customers as they allow them to avoid battling the traffic themselves. This point is well illustrated by a comment from one participant, who said:

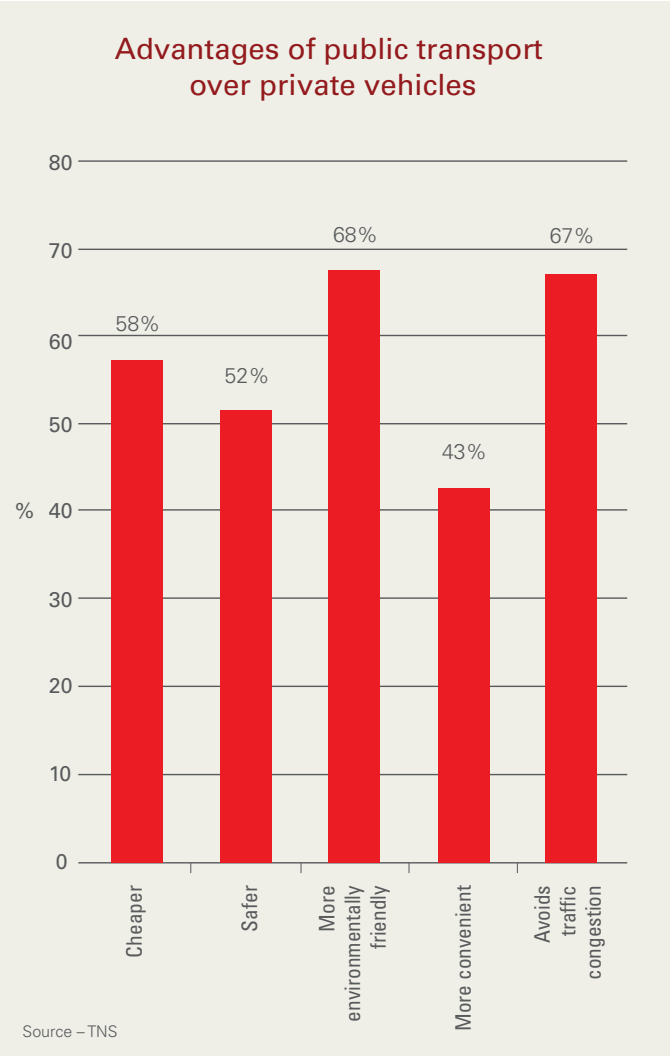
"there is nothing more annoying or stressful than starting or ending a work day being stuck in traffic… Public transport bypasses the whole traffic issue and lets me make better use of my time. I can do other things when on public transport."

Other participants echoed this sense that public transport offered freedom and ease that could not be provided by driving in a private vehicle.

Many respondents were attracted to public transport use as they considered it offered a clear cost advantage over alternatives. In recent years, there has been growing awareness of the full lifetime cost of car ownership (including depreciation), whereas previous years saw a form of 'money illusion' with a focus on fuel costs and lack of awareness of much larger non-fuel costs of car ownership. For customers, the significant cost advantage of public transport, particularly for commutes to the CBD, is avoiding the cost and difficulty of finding a car park. For longer journeys, avoiding petrol costs also featured as an attractive aspect of public transport.

Positive perceptions of public transport, particularly on the basis of social issues, can be built upon to encourage greater use of the service. This approach is currently being used by Metlink in their 'Nature Prefers Public Transport' campaign. This campaign seeks to highlight to customers the positive environmental contribution that can be made by travelling on public transport.

Figure 2 - Factors that attract customers to public transport



[6] Metlink, 2011. Nature Prefers Public Transport Campaign.

3.1.2 What deters customers from public transport use?

Despite growing positive perceptions about public transport, customers still possess some negative perceptions which influence their use of public transport.

The frequency and reliability of services is a key concern of customers, particularly for those who use public transport in peak times to commute to work. Customers have an aversion to the uncertainty that occurs when services are unreliable. Customers would also prefer to avoid the delays associated with waiting for services to arrive. For instance, one participant said that if they missed a service they were forced "to sit around decaying".

Customers also expressed an aversion to interchange during a journey. Many felt that any additional travel time saved by interchanging would be lost in waiting for their second service to arrive. One respondent summed up the view of many when they said:

"If it is only going to take a little bit of time off my trip then I would stay on one mode of transport. Especially because you could get off the first one and have to wait 15 minutes for the next mode of transport to show up."

A persistent customer deterrent to public transport is overcrowding. Overcrowding concerns are not only about access to a seat. Customers also associated overcrowding with having to 'touch and smell strangers' and not being able to move without touching people. Overcrowding concerns were consistently described in these very personal ways, with views often centred on the invasion of personal space.

Cost was another factor that many customers identified as a deterrent to increased public transport use. Some of the views on this issue, however, were based on incorrect assumptions about the cost of public transport versus the price paid. For instance, as discussed further in section 4.5, many customers believed that governments do not subsidise ticket prices and that fares in Australia are more expensive than overseas. One concern of customers that can be well founded is the cost of changing between modes in the absence of an integrated ticketing system.

3.1.3 Misconceptions of public transport

A strong message emerging from the study was the potential misalignment between customers' perceptions of public transport services and the reality of operating these services. This perception gap was identified in three key areas:

- The perception of public transport as a whole versus the perceptions of specific trips or modes of transport;
- The perception of the quality of public transport services in other Australian and international cities; and
- The level of knowledge surrounding innovations in operational technology. An example of this issue is provided in chapter 5 which reviews research on the customer support for the possible introduction to Australia of driverless trains, as used commonly overseas.

Customers' overall perceptions of public transport

The TNS survey focused on the concept of 'public transport' as a whole and did not seek specific views on particular modes or trips made. The results indicate that respondents had lower overall satisfaction and were less likely to speak favourably about public transport in their own cities compared to international benchmarks. Importantly, however, the results were also less favourable than similar research undertaken for specific rail and bus operators in Australia.

The findings suggest that while customers can relate more favourably to the service quality of their usual route or mode of transport, when considering public transport as a whole, customers have negative perceptions. The results imply that negative perceptions of public transport as a whole may not necessarily translate, or be appropriate, to customers' everyday use and interaction with specific modes of transport.

The variance between perceptions of public transport as a whole compared to individual modes can present challenges for public transport agencies. This is because, while an integrated perception of public transport is necessary for efficient planning and operation, customers may have difficulties comprehending issues at this level. As a consequence, a number of interesting questions are raised:

- Do people have the capacity to accurately identify with the concept of public transport as a whole?
- Is there potential to 're-brand' the concept of a public transport system? and
- Should customer communication be directed towards journey or mode channels rather than on a system-wide basis?

We note also that perceptions about public transport as a whole may be clouded by a view that public transport is only for low socio-economic groups and travelling in a car is a mark of success. Such views are evident in the quote often ascribed to Margaret Thatcher that "a man who, beyond the age of 26, finds himself on a bus can count himself as a failure". While there is some debate about whether or not the quote can be attributed to the former British Prime Minister, the fact remains that such views are still likely to exist among some sections of society.

Negative overall perceptions of public transport are also likely to be evident in the fact that many people who use public transport for commuting to the CBD do not then use it for other trips. Parking costs and congestion tend to make driving to the CBD for work an unviable option for most people and, therefore, in this instance they are seen to have no other choice. When they are not faced with this challenge however, customers tend to prefer using a car.

Public transport in other cities is better than in mine

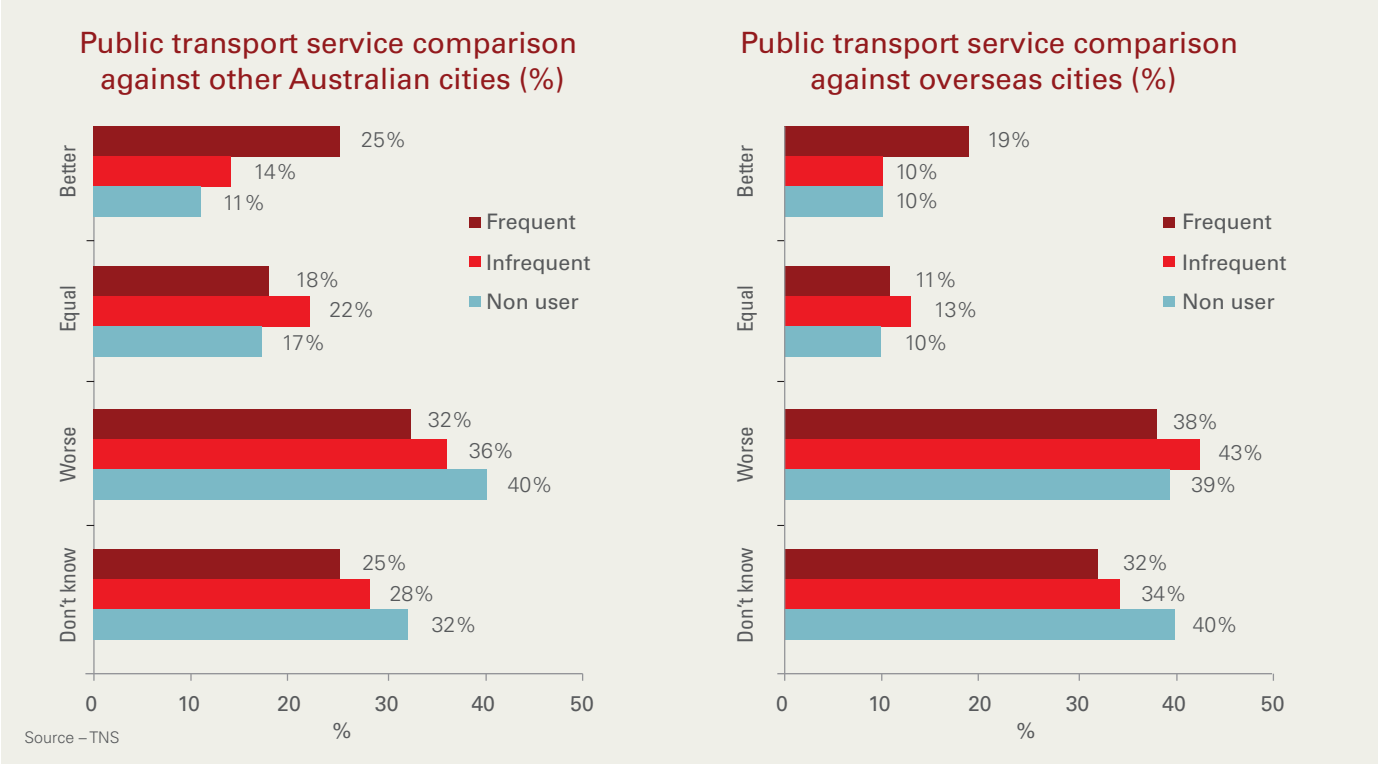
When asked to compare their city's public transport system to public transport systems elsewhere in Australia and internationally, customers across all cities and user groups held the belief that 'the grass is always greener'. Figure 3 provides a comparison of customer perceptions of their own city's public transport system to that in other Australian and international cities.

It indicates that:

- All customer groups view public transport in their city as being worse than other Australian cities and overseas cities; and
- Less frequent users and non-users are likely to have a more negative perception of their city's public transport services compared to the services in other Australian cities.

The negative perceptions held by non-users and less frequent users are not surprising. These are likely to be driven by the perception gap issue and as justification for their choice not to use public transport.

Figure 3 - Comparison of public transport service compared to other cities



Public discussions around transport within a city also have the ability to shape customer perceptions. Local and state politics, as well as media outlets, are often focused on negative performance within their own city. Demonstrated positive performances and the failures of other cities rarely attain the same level of coverage. Perversely, there may also be an incentive for cities, and in some cases operators, to support claims that the public transport system is struggling or facing major challenges, in order to obtain funding for system upgrades.

Overcoming misconceptions

The challenges provided by these misconceptions are not insurmountable. With public transport increasingly being seen as the responsible choice, providers can break down the few remaining stigmas that surround it.

Education, backed up by tangible action, is the key to changing these perceptions. This does not imply that every customer will, or should, want to know the intricacies of running a public transport system. However, providing accurate and necessary information will assist in forming better customer perceptions. This being said, simply providing information will not be enough. The information provided must also be backed up by actions.

One innovative approach to overcoming the information gap between customers and operators is Veolia Transdev's 'Meet our Managers' program, involving regular interactions between executives, state operators and the travelling public.

The "bad news is news" approach of the media to public transport should also be challenged by more robust data on customer satisfaction. All too often media outlets feature negative headlines about failures in public transport services, without any consideration of longer-term trends of improving reliability and service. Regular reports on these trends must be published and promoted as more than simply a means of refuting negative media reports.

Network performance and customer satisfaction reporting is not by any means a new or innovative concept, however is increasingly important to overcome customer misconceptions in a transparent and accountable manner. The quarterly TransLink Tracker, mapping the performance of the South East Queensland network, is the benchmark for public transport performance monitoring in Australia. In addition to reporting on service delivery, the Tracker provides information on fare and subsidy levels and a wide range of customer satisfaction indicators.

Important to changing the media reporting of public transport, there need to be new champions for public transport to promote positive changes in service delivery and trends in customer satisfaction. Given the growing importance to the community of public transport, it is incumbent upon political leaders to drive the required shift in customer perceptions. Transport ministers should lead the political debate in favour of public transport by championing improvements and innovations that enhance customer service. This will also assist in the provision of integrated public transport solutions in each jurisdiction.

3.2 Expectations of public transport

Customers' evolving expectations of public transport are likely to present challenges for operators well into the future. While many expectations are focused on the adoption of new technology and providing customers with a 'whole of journey' experience, the fundamentals of service provision will continue to be the top priority.

3.2.1 Public transport as an entire experience

Customers today view public transport as more than simply getting from A to B. The actual function of public transport is just one component of the experience that affects customer perceptions of the service it offers.

Other industries have successfully embraced the 'whole of experience' concept in the provision of their goods or services. For example, retailers no longer view the sale of their product as their only interaction with customers. Instead, service-focused industries identify three phases where customer interaction shapes perceptions and sales outcomes. These are:

- Phase 1 – involves understanding and interacting with customers prior to their purchase of a good or service. Such interaction, if successful, can provide a competitive advantage and help to shape customers' potential perceptions of the product or service they are seeking to purchase;
- Phase 2 – involves maintaining customer focus during the transaction stage, i.e. the actual sale of the good or service. This phase is crucial as this is where customers' strongest perceptions can be shaped; and
- Phase 3 – involves post-sale interactions, for example responsiveness to ongoing queries, feedback or the need for maintenance or repair.

These phases can also be considered in the public transport context. In terms of the journey, they imply focusing on the following three stages:

- **Phase 1: Pre-journey** – this typically involves customers planning how to make their desired journey. This includes weighing up all the advantages of different travel options and deciding upon the mode most appropriate. Transportation information lines and online trip planners are examples of initiatives aimed at shaping customers' pre-trip perceptions. These tools provide the necessary information on service details, timing and interchanges, and can even provide maps to assist during the journey. For less frequent users, or frequent users planning to make unfamiliar trips, these services arm the customer with necessary information to make the journey and, in doing so, reduce the anxiety associated with unfamiliar travel.
- **Phase 2: The journey** – this is the core service provided by the operator. Customer perceptions of the service are shaped by interactions with staff, amenity of the service and ability to deliver the customer to the required destination in a timely manner. A good public transport trip does not linger in the perception of a customer as this is his or her expectation. However, when the experience is perceived to be below expectations, the encounter can often remain with the customer and impact their future perceptions of public transport.

  A key finding of recent studies is that the anxiety of making an unfamiliar trip remains throughout the journey.[8] While providing adequate information can arm customers with the information they require to plan and embark on a trip, the lack of regular real-time information on services (especially buses) during the trip can increase anxiety. Customers may not know where on their journey they currently are, how far they are away from their required stop or even if they have missed their required stop. This type of anxiety is a further barrier to travel and can shape customer perceptions of the user-friendliness and accessibility of the system.
- **Phase 3: Post-journey** – this interaction with customers ensures efficiency and accuracy in following up on customer queries and complaints, responding to customer feedback and adequately communicating future changes to services.

3.2.2 Latest technology

Customers are becoming increasingly focused on the role that technology can play in enhancing their public transport experience. This can be seen with respect to smartcard ticketing and real-time information. Customers expect that technological enhancements embraced by overseas transport systems and in other industries are adopted by their public transport system.

Smartcard ticketing would once have been considered innovative by customers. This is now considered a requirement for a modern public transport service. Customer expectations regarding the provision of real-time information are not only driven by overseas transport experiences, but also experiences from other industries. The qualitative research undertaken for this report indicated frustration over the time and complexity involved in implementing these systems in Australia.

Adapting new technology to transport systems presents a challenge to operators, who must balance the customer and operational benefits with the likelihood of systems and processes that can becoming outdated when making investment decisions.

3.2.3 What customers are willing to pay for

A body of theoretical literature exists about the value customers place on various service and infrastructural attributes associated with public transport. Identifying the willingness of customers to pay for various services and infrastructure attributes allows us to rank the values customers place on these. Figure 4 below demonstrates customers' willingness to pay for various attributes of public transport services.

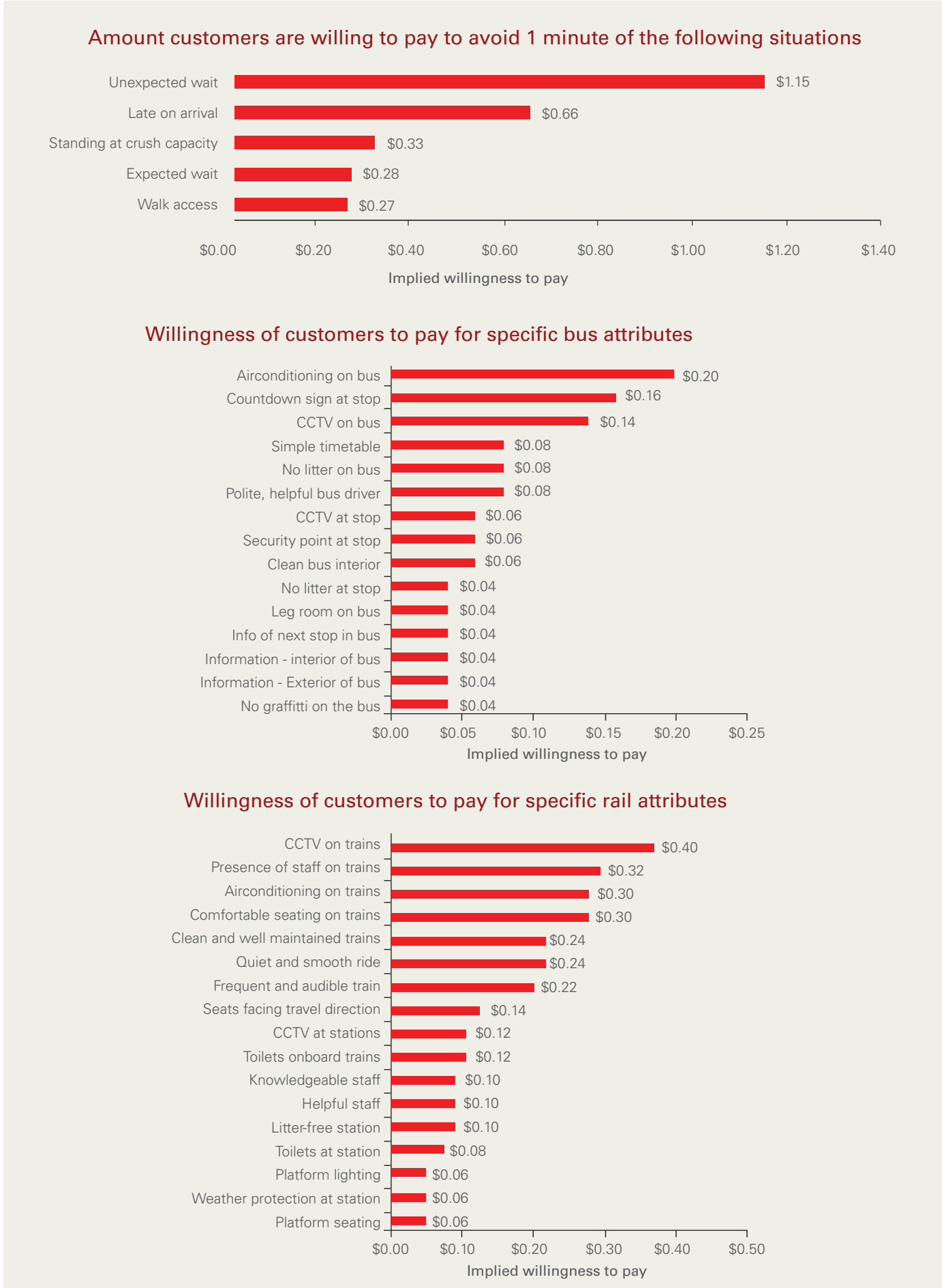
These values are based on a broad range of Australian studies, undertaken across a number of states over various timeframes. It would be expected that the specific values of each demand characteristic would differ depending upon the mode and region due to the differing demographic and socio-economic characteristics of customers. However, the general ranking of these demand determinants in terms of importance to the customer are likely to remain relatively consistent.

Interestingly, customers tend to have a lower willingness to pay for a 'package' of improvements displaying a combination of attributes, such as a new station, compared to individual improvements.

This 'willingness to pay' research has two implications for operators. Firstly, it allows operators to understand the relative importance of various service and infrastructural attributes associated with their provision of public transport. This can assist in targeting investment priorities. Secondly – and possibly more importantly – it allows operators to gain an understanding of what investment priorities are likely to result in the greatest return, both financially and in terms of customer satisfaction.

[8] TransLink, 2009.

Figure 4 - Willingness to pay



Note: A package of improvements is likely to be valued lower than the sum of the individual improvements up to a maximum value.

Source – Australian Transport Council, 2006. Quantification based on a perceived value of commuter travel time of $11.90 per hour.

Image courtesy of Veolia Transdev

4.0 BARRIERS TO INCREASED PUBLIC TRANSPORT USE

In this chapter we discuss the four barriers to increased customer use of public transport revealed through the research. We also discuss the relationship between the cost of a trip and the use of public transport.

4.0 BARRIERS TO INCREASED PUBLIC TRANSPORT USE

The investigation of possible barriers to public transport use draws upon a review of the literature and the new research undertaken by TNS on customer perceptions of public transport. Four key barriers were identified which deter public transport usage:

- Access;
- Reliability and frequency;
- Interchange; and
- Crowding.

It is important to note at the outset that simply addressing these barriers does not necessarily guarantee that public transport use will increase. They do provide an indication, however, of the areas that operators should focus on as a priority. Approaches for addressing these barriers are discussed in the following chapter.

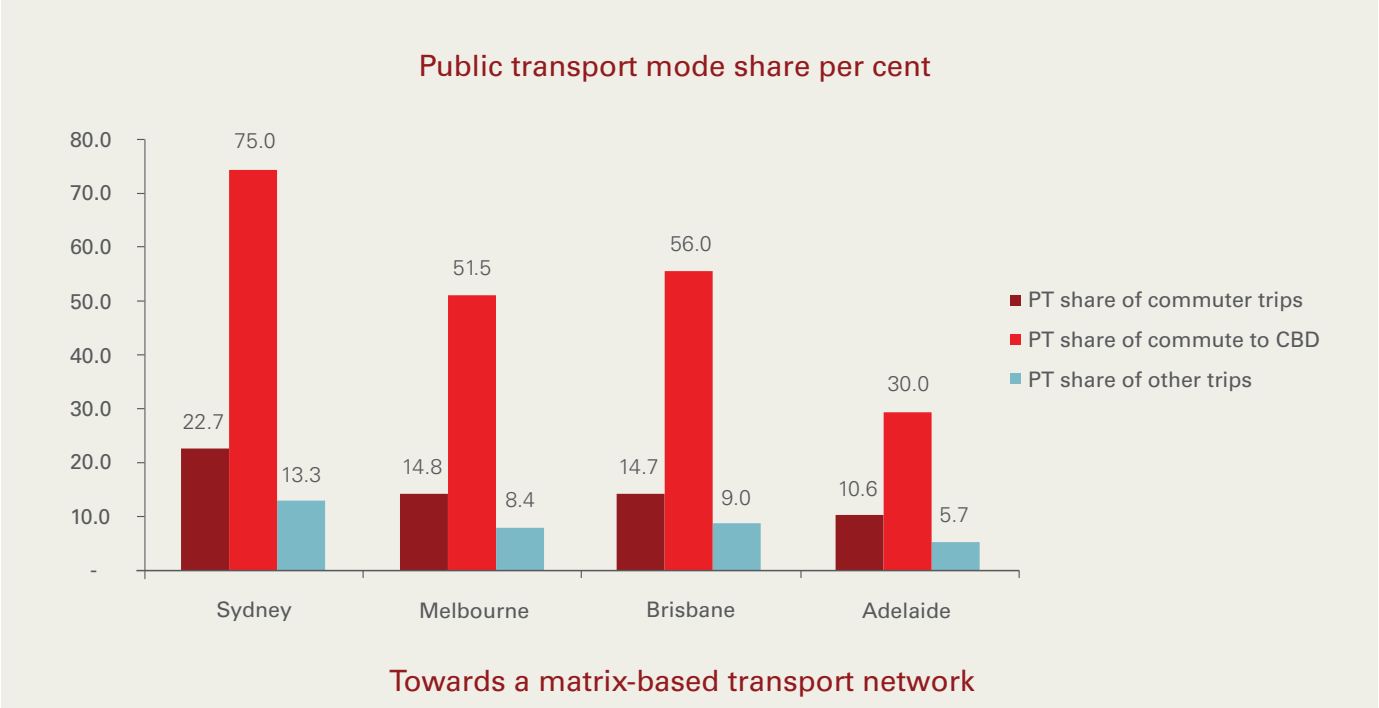
This chapter also addresses the issue of the cost of public transport. We have not characterised public transport cost as an explicit barrier because the literature and research does not provide a consistent position on this. For instance, while the TNS research indicated cheaper fares would encourage increased public transport for all user groups, the literature suggests that price elasticity of demand varies more significantly between user groups and by time of day. For example, during peak commuting periods high occupancy rates mean that price decreases can lead to limited increases in demand.

4.1 Access

One of the most significant barriers to increased use of public transport is access to services. This applies both to the ability to access services to begin a trip and, importantly, to having timely access to a destination.

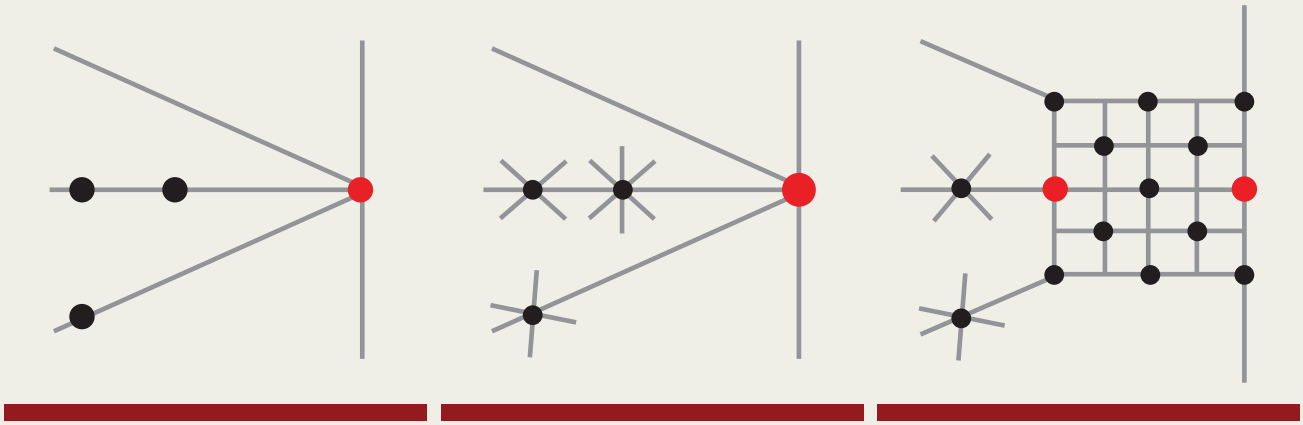
Historically, Australia's public transport systems have been designed to move people from suburban areas into the CBD and other major employment areas. This means that most major cities have a radial system, requiring public transport journeys to non-CBD locations to pass through the CBD. Customers can travel from most suburban locations to the CBD with relative ease. This outcome is reflected in the high proportion of commuter trips to the CBD that are made on public transport (Figure 5).

Figure 5 - Access to public transport



Source: Australian Census 2006.

Figure 6 - Radial versus matrix-based transport networks



PAST
- A radial system focused on Global Sydney

'CITY OF CITIES' TO 2036
- Radial system focussing on Global Sydney and the Regional Cities (Parramatta, Penrith and Liverpool)

NETWORK SCENARIO BEYOND 2036
- A network city
- Linked centres
- Strong cross-regional links

Source: Metropolitan Plan for Sydney 2036, NSW Government, December 2010, pg 27.

Increasingly, employment growth is occurring outside the CBD. In addition, destinations for recreational trips tend not to be centrally located. This means that trips can involve multiple services and modes. Public transport systems do not necessarily cater well for this evolution. This has created a significant divergence between the proportion of commuter trips to the CBD taken on public transport and the proportion of non-commuter trips taken on public transport. As shown in Figure 2, the gap ranges between Sydney at 62 per cent and Adelaide at 24 per cent.

Providing public transport solutions that efficiently meet the demands of new travel patterns and needs will require the development of a 'matrix' network, rather than a purely radial network. A matrix travel pattern is based on the concept of a series of rapid, high-capacity and strategic corridors, fed by tangential or crossing routes. The progression from a radial to a matrix-based network for Sydney is shown in Figure 6.

From an operators' standpoint, a matrix network provides for the fact that it is unlikely to be financially viable to run a point-to-point public transport service between each residential area and dispersed employment regions with sufficient frequency to encourage mode shift away from cars. By designing the network to intersect at strategic points, increasing the frequency of services, and facilitating easy interchange, a more efficient service can be supplied. Furthermore, from a customer-centric perspective, responding to the increased complexity of customer trips should be at the heart of any public transport system.

It is relevant to note that the need for such changes to network design reflects major changes in land use over time. Existing public transport use is driven by the provision of long-established service patterns that are largely the result of historical decisions based on earlier land uses. With the dominance of motor vehicles facilitating lower density urban growth, leading to the dispersal of transport markets, the expected mode shift back to public transport will be assisted by changes in land use planning. It is important for urban and transport planning within cities to be properly integrated so that broad considerations about appropriate land use and public transport network design can be made effectively.

Transit oriented development (TOD) is a major approach to reducing road congestion by making land use planning more public transport compatible. TOD is development around transport hubs, including medium to high density residential housing and key services such as health, education, government, retail and associated employment opportunities, designed to encourage public transport use. TODs can achieve substantial mode shift from private vehicles to public transport, as well as improve liveability for residents.[9]

4.2 Reliability and frequency

It is consistently found that a key, and arguably the most important, barrier to public transport use is unreliability and infrequency of services. While timetable changes and increases in services have occurred in all major cites to address this issue, customers still see it as the key flaw in their transport systems.

'Willingness to pay' studies have found that reliability is the attribute for which customers are willing to pay the most. Customers will pay between $1.20 and $5.80 per trip to avoid 5 minutes of unexpected waiting time.[10] It is important to distinguish between unexpected and expected waiting times. Customers display a strong understanding that wait times are unavoidable; however, they are frustrated by unexpected wait times. In fact, commuters are willing to wait more than four times longer if the wait is expected than if it is unexpected.[11] Frequency of service was also valued highly with customers willing to pay between $0.70 and $1.30 to increase frequency of services from 25 minute intervals to 8 minute intervals.

TNS research reinforces these findings, identifying the most important service attributes to customers as frequency and reliability. Customers expect services to be offered every 5 to 15 minutes during peak time and every 15 to 20 minutes

[9] TTF (2010), 'The benefits of transit oriented development', page 1.
[10] Bases on 27 Australian and international studies.
[11] Calculated based on international studies of implied value of time for unexpected wait times and expected wait times.

during off-peak times. While customers' expectations of peak-time frequency are often met, there is a high degree of dissatisfaction with the frequency of off-peak services.

Many customers described frequency and reliability as the issue that they most would like to see changed about public transport:

"The one issue that I would tackle would be the frequency of services…. I would reduce (wait time) to 10 minutes".

Another participant simply said:

"The issue is lateness and poor frequency".

The importance customers place on reliability and frequency prompts the question, why is this valued so highly? Reliability and frequency are seen as fundamental features of a modern, efficient public transport system. Customers expect that Australia's public transport system should integrate technology and state of the art practices to achieve this end, as has been the case in countries such as Singapore and Hong Kong.

A common theme is that customers do not see their journey just as the period when they are on the bus, train, tram or ferry. The journey is the experience from walking or driving to their station, through to navigating their way to their destination. A strong aversion to uncertainty shapes customers' perception of their entire journey. The concerns regarding frequency and reliability are in many ways, at their core, concerns about uncertainty. Customers, as demonstrated by 'willingness to pay' studies, want to know if they will have to wait, so this can be factored into their plans.

4.3 Interchange

An increased focus on interchange will be necessary so that a radial system can cater for customers' increasingly decentralised and complex journey needs. Ease of interchange will not only need to be a focus within modes of public transport, but also across modes of transport. Successfully achieving this will be essential to increasing public transport usage in a cost effective manner.

Currently interchanges are a significant barrier to increased public transport use, particularly for non-commuting trips. Australian research suggests that on average passengers are willing to undertake between 5 and 10 minutes of additional travel time within a mode to avoid using an interchange.[12] This was confirmed by TNS' research, which found that just over 50 per cent of customers would stay on the one service, even if it took longer to get to their destination. This desire to avoid interchanges is driven by:

- The uncertainty of connecting services and the risk of delay due to missing a connection;
- The amenity of various interchange facilities; and
- The increased cost that transferring from one mode to another can have in various public transport networks.

Across the entire public transport journey, uncertainty is a common source of frustration and a key barrier to public transport use. Interchanges, therefore, can be an additional source of uncertainty for many passengers. One participant described one of their motivations for avoiding interchange and staying on the one mode as being due to the potentially long and unknown wait for the second mode. They said:

"you could get off one and have to wait 15 minutes for the next mode of transport to show up".

This reflects the common sentiment expressed by customers in TNS' research – the feeling that in transferring between modes any reduction in travel time is lost in additional waiting time.

The quality of facilities at interchange points also surfaced as a motivation for passengers to avoid transferring between modes. This issue has been identified and addressed with great success in Hong Kong and Singapore. In Hong Kong, interchanging between services is common and the stations are equipped with internet cafes, free Wi-Fi, bill payment facilities and free publications.

Interchange has been identified by Transport for London as a key issue for best-practice public transport provision. Transport for London has developed a Design and Evaluation Framework for interchange stations in which four best-practice design themes are identified, those being:[13]

- **Efficiency –** design should ensure that interchange facilities "provide a seamless experience for passengers as they move between public transport services".
- **Usability –** a key barrier to interchange was identified in the usability of interchange facilities. The framework highlights the importance of interchanges which are safe, secure and comfortable, and at which the fear of unpleasant experiences is minimised.
- **Understanding –** this design theme involves more than simply the provision of valuable information, but also how information is provided; it must involve clear and minimal signage and be easy to use.
- **Quality –** refers to the attractiveness of the design to users. An interchange may be a destination in and of itself due to the facilities it offers or its design may create a sense of community and place.

Without integrated ticketing, transferring from one mode to another can incur additional costs. Integrated and smartcard ticketing was one of the most common reforms that participants listed when asked what they would change about public transport. Not only was this favoured for reducing the cost of transferring between services, but also for making the entire journey easier. One participant referred to South East Queensland's integrated smartcard ticket, the *go* card, saying:

"I love my go card. It makes life easier and makes me feel organised".

TNS found that two thirds of survey respondents from Brisbane who catch public transport at least once a year, have and use a go card.

Addressing these barriers to interchange will be increasingly important for public transport providers to respond to customers' needs. With interchange locations often targeted for future residential growth, urban densification and transit-oriented development, customer aversion to interchanges also risks deterring new residents from taking up public transport. The travel behaviour and patterns of residents in these new developments are shaped early by their experiences. The effects of not providing good public transport, accessed through well-designed interchanges, risks reaffirming private vehicle travel behaviour which neither the local or city-wide road networks can continue to support.

[12] Australian Transport Council (2006) National Guidelines for Transport System Management in Australia, Volume 4: Urban Transport, Appendix A, p 75
[13] Transport for London, 2009. Interchange Best Practice Guidelines.

4.4 Overcrowding

Overcrowding consistently ranks highly as a deterrent to public transport use. TNS found that it was the third most important attribute for public transport users. 'Willingness to pay' studies have found that customers are willing to pay between $0.40 and $4.00 to avoid crowding on public transport. This finding is the key reason cost was not separately identified as a barrier to use of public transport.

Customers are willing to pay the most in order to secure a seat, up to $3.97 to go from standing at crush capacity to sitting at 70 per cent capacity.[14] The research indicates that while the inability to attain a seat during peak periods did influence their perception of the service (especially for longer trips) it was the encroachment on personal space that emerged as the key issue for customers. As previously indicated, respondents' described experiences in crowded conditions in a very physical and personal manner, using emotive language to describe the physical contact and smell of fellow customers. Descriptive words included 'nauseous', 'unhygienic', 'unsafe', 'nerve wracked' and 'trapped'. These feelings were further aggravated by 'loud' school children and the behaviour of other passengers, to the point where some went as far as to describe it as a threatening environment.

This response is interesting when compared to the extent of overcrowding on international public transport services. The average Australian feels crowded when capacity constraints force crowding of 2 persons per square metre. Many international metro systems experience average crowding of 6 persons per square metre during peak times. This suggests that Australians have a relatively low tolerance for crowding compared to our international counterparts. This is a key finding for development of services in peak periods.

Many respondents listed overcrowding as one of the things they would most like to change about public transport in their city, suggesting that their journeys could actually be very 'pleasant' if they had a seat and so could 'happily read or doze' on the bus or train.

These findings imply that the aversion to travelling in crowded conditions is heavily influenced by the conduct of fellow passengers, not only the amount of capacity an operator provides at any given time. This negative reaction is also a product of customers having limited control over the level of overcrowding they confront. Having a seat offers the promise of personal space and a degree of control. This finding also implies that a number of measures can potentially be adopted to help reduce the discomfort due to high occupancy rates and enhance the customer experience.

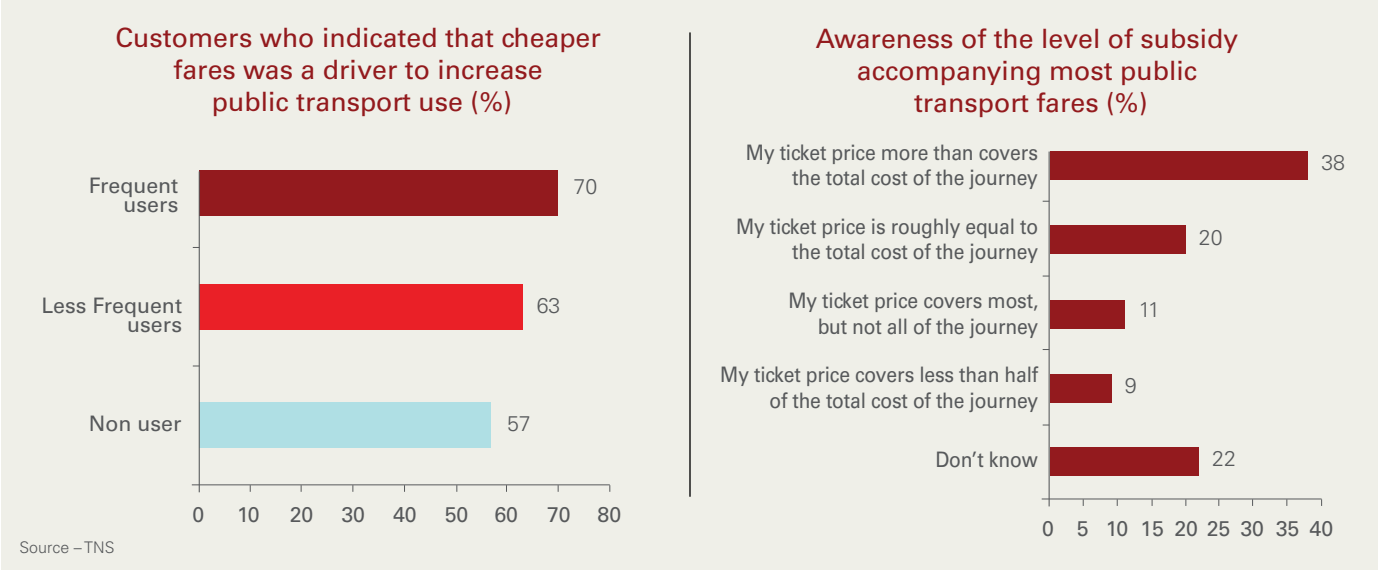
The strength of the aversion reported to travelling in crowded conditions is also interesting given the observed behaviour of customers. Customers display a willingness to travel in these conditions. This potentially reflects an internal trade-off customers are making between the emotive and personal response to travelling in crowded conditions, versus the utilitarian desire to get to their destination as quickly as possible or to meet externally set deadlines for starting or finishing work. On the whole, customers would prefer to incur the discomfort that is associated with travelling in crowded conditions rather than being exposed to the uncertainty associated with waiting for the next service.

It should be noted that significant crowding tends to manifest itself in the "peak of the peak", perhaps for one hour out of the total defined peak period. The peak period has expanded over recent decades with increasing population. This reflects the willingness and ability of many commuters to stagger their working times because the "peak" could not accommodate them if based on historical behaviour. Given the aversion to overcrowding, it is conceivable that a spreading of the "peak of the peak" might continue to even out some of the crowding issues, and thereby lead to a greater equalisation of load factors throughout the peak period.

4.5 Affordability of fares

Both frequent users and non-users identified cheaper fares as a key driver that would encourage them to undertake greater public transport use. Less frequent users rated cheaper fares as a significantly less important driver, potentially indicating their aversion to public transport relates more to level of service and usability rather than price.

Figure 7 - Customer perception of current fare levels



Source – TNS

[14] Douglas and Karpuzis (2009) An Explorative Econometric Model of Sydney Metropolitan Rail Patronage, p8. Translink (2010) TransLink's Tracker 2009-10, p5. City of Sydney (2006) Review of Rail Patronage and Revenue for the Castlereagh St Light Rail Route, p 24.

In understanding the customer's desire for cheaper fares, it is interesting to note as shown in Figure 7, that 58 per cent of all travellers thought their fare price covered more than the cost of their journey or was roughly equal to the cost of their journey. Only 20 per cent of travellers indicated awareness that public transport tickets are usually subsidised by the taxpayer.

The estimated cost recovery of public transport operators across the five major Australian cities is approximately 36 per cent, with the balance of required operating costs funded by government.[15] The magnitude of the required subsidy is in stark contrast to the perceptions of customers who commonly perceive that their fares are generating an operating profit. Such a divergence in perception has raised service level expectations and customers' belief in their right of entitlement.

On the other hand, politicians and policy makers viewing the level of direct subsidy, and at the same time often under-valuing other community advantages of public transport, have historically risked under-valuing the importance of customer service issues.

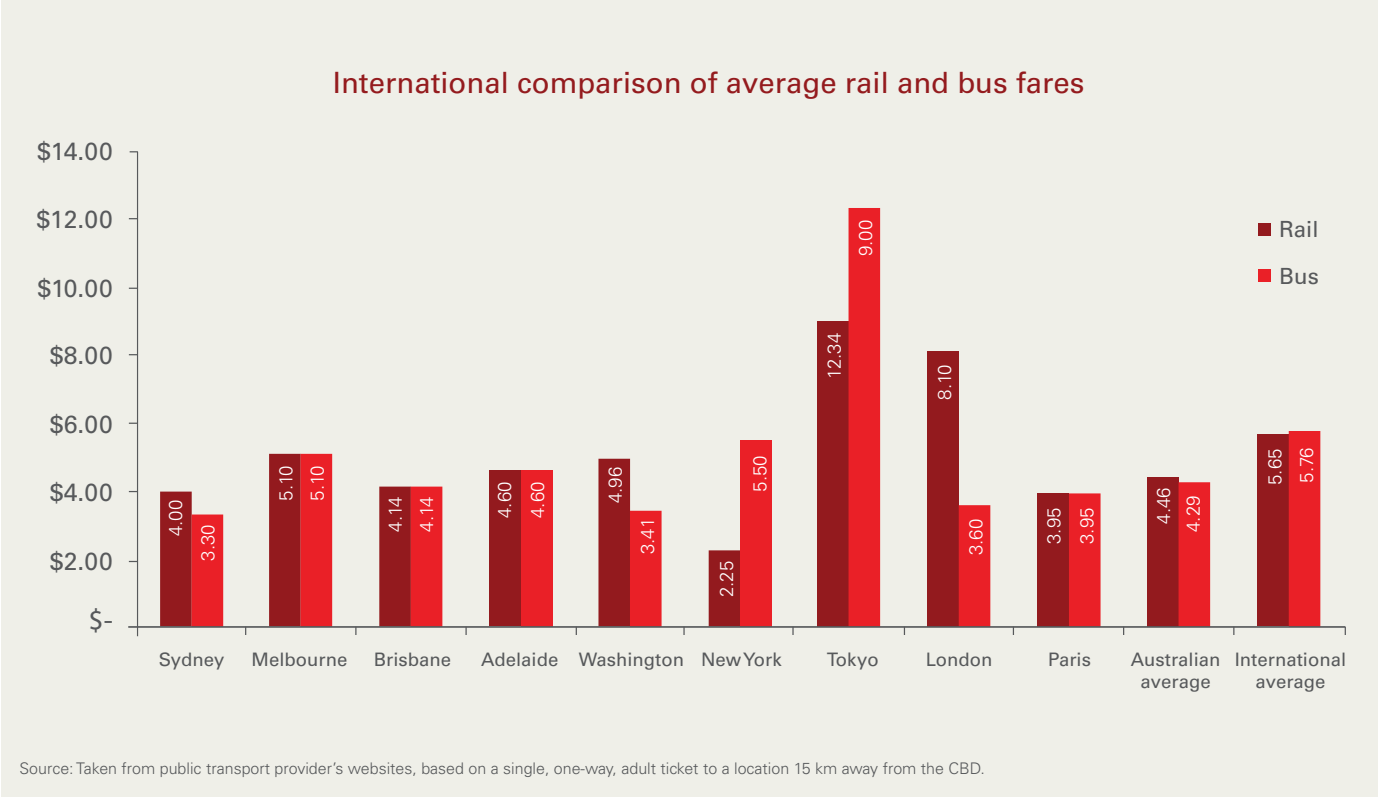
The findings on customer preferences for lower fares, based on stated customer responses, need to be viewed and interpreted with a degree of caution. No customer is going to turn down cheaper fares if they are offered. The actual importance that customers place on the level of fares can be understood by examining the elasticity of public transport demand.[16] While at the highest level, demand for services is shown to be sensitive to changes in fare levels, operators need to understand that this sensitivity differs significantly across markets and at peak and off-peak periods.

The majority of public transport customers – those travelling in the peak periods for commuting purposes – demonstrate a much lower level of sensitivity to changes in the price of fares. For these customers the use of public transport is driven not by cost but rather constraints on viable, alternative forms of transport to reach their destination. A better approach to increasing fare revenues from this group may actually be increasing fares in association with delivery of improvements to customer service. This would aim to extract the additional value that customers place on the provision of the service, over and above the current fare levels. The same fare increases in peak periods without associated improvements in customer service will be a much tougher sell to customers, and risks being portrayed by many customers unaware of the low level of cost recovery as equivalent to a tax increase focussed on the least well off.

Operators also must be aware that it is not only the absolute price of a fare that customers are sensitive to. The relative cost of public transport fares compared to other, substitutable forms of transport is also a key influence. For example, increasing petrol prices will have a corresponding impact on the demand for public transport services. More broadly, the potential introduction of various road pricing mechanisms would be expected to also impact on mode shares.

Finally, it is interesting to note that customers' perceptions of the cost of fares do not appear to reflect the relative price of Australian public transport. Figure 3 indicates that the majority of survey respondents considered the quality of their public transport service worse than cities elsewhere in the world. The fact that the relative price of travelling on these Australian services is significantly lower than in Europe and other overseas locations does not appear to be influencing their perceptions (see figure 8).

Figure 8 - International fare comparison



Source: Taken from public transport provider's websites, based on a single, one-way, adult ticket to a location 15 km away from the CBD.

[15] L.E.K for the Tourism & Transport Forum, Meeting the Funding Challenges of Public Transport, 2010. Analysis excludes wholly privately owned operators.
[16] Price elasticity refers to the percentage change in public transport demand resulting from a 1.0% change in price, all else held constant.

Image courtesy of RailCorp

5.0 OVERCOMING BARRIERS TO PUBLIC TRANSPORT USE

In this chapter we consider the overall experience of public transport as well as the key barriers for customers. We also examine case studies of the pursuit by Australian transport operators of innovations designed to overcome the barriers to use of public transport. Finally, we identify further opportunities for additional innovations to improve service delivery for customers.

5.0 OVERCOMING BARRIERS TO PUBLIC TRANSPORT USE

5.1 Creating an overall customer experience

The key to delivering good customer service is to centre the entire organisation on meeting customer needs.

Customer requirements need to be placed at the forefront of all operational and investment decisions. Unless the system is run for the benefit of customers and staff attitudes reflect this objective, customers will not believe an operator truly cares about the customer experience.

Over the last 20 years successful businesses in highly competitive industries have focused more on why they do business rather than simply how. These businesses realised that, without their customers, their businesses would not exist. The outcome of this renewed focus has been an improvement in customer satisfaction in these industries.

In competitive markets, levels of customer service are seen as a key point of product differentiation and competitive advantage. This has particularly been the case for the aviation, retail, banking and insurance industries. For businesses in these competitive service-oriented industries, focusing on the customer is not an option, but a requirement.

Public transport has been less exposed to the discipline provided by competitive pressure. As a consequence, until recently there has been less focus on putting customers at the heart of the service offering. Instead, to some extent, customers have been seen as a barrier to the 'how' of providing public transport. This is changing. Innovative public transport operators are now starting to focus more on why they provide public transport, which is, ultimately, to provide a service to customers.

5.1.1 Information and marketing - an increasing priority for operators

Customer-facing agencies responsible for public transport information and marketing are now common in cities in Australia and around the world. This separation of operational delivery from supplying information and marketing has been used by some of the larger public transport operators to deliver improved customer service.

Access via phone or the internet to timetable, service and ticketing information is now one of the most basic expectations of customers. In creating a complete customer experience consistent with other leading service industries, as outlined in section 3.2.1, information and marketing agencies are pivotal, providing both an initial contact point to inform the customer of available services (pre-journey) and a forum for feedback, complaints or further information after the fact (post-journey).

Victoria's Metlink is an example of a successful customer-facing information and marketing agency. It is regarded, and promotes itself, as the 'face' of public transport in Victoria, a one-stop-shop for information about services, fares and ticketing. Metlink was established as a partnership of Melbourne's train, tram and bus operators, providing services on their behalf, as well as the Victorian Department of Transport and regional transport operators. Establishing a well-branded 'face' of transport has proven a successful model for Metlink as a whole-of-network approach to the customer experience.

Similarly, TransLink is the 'face' of public transport in South East Queensland. First established to serve as a contact point for customer information, TransLink has evolved to incorporate a range of additional functions such as service co-ordination and delivery, infrastructure development and the roll out of the highly successful *go* card ticketing system.

However, small operators with niche customer bases such as Metro Transport, operating Sydney's light rail and monorail networks, face different marketing opportunities and challenges altogether. To some extent, the greater flexibility and ability of smaller operators to innovate allows them to set new directions that larger operators may wish to follow. The following case study outlines a targeted brand marketing strategy employed by Metro Transport Sydney to grow its customer base while preserving a sense of ownership among its regular customers. The notion of brand marketing for a public transport service is comparatively new, but is becoming more prevalent with the adoption of a customer-centric focus.

CASE STUDY 1
Metro Transport Sydney – targeted brand marketing campaign

Metro Transport has placed a strong emphasis on positioning its service as personal and accessible to a target market in Sydney's Inner West. This positioning was identified as the key to running a commercially viable operation. One tool used to reaffirm this position was the Miss Kitty marketing initiative. This initiative was the development of a brand personality for Metro Light Rail. The light rail 'personality' helps to reaffirm a friendly, safe and reliable system, to reduce potential user anxiety.

Background	As a result of market research, it was established that Metro Light Rail was lacking a brand personality, with little to differentiate it from other forms of public transport in the minds of Sydney commuters. In contrast, 80% of light rail users perceived the service to be good or excellent. The goal of the Miss Kitty project was to position the Metro Light Rail as deluxe commuter transport with personal service, in order to justify the perceived cost premium for the product. The campaign objectives were specifically to: • Maintain and increase satisfaction of existing customers; • Improve advocacy and positive word of mouth; • Improve general awareness with saturation of catchment; • Keep Metro Light Rail front of mind; • Increase usage by people with low use despite knowledge of the system; • Address issues of cost and distance from home perceptions; and • Generally increase usage. The aim of the development of a brand personality was to impose human traits and values on the perception and brand recognition of the Light Rail service.
Implementation	Miss Kitty was initially rolled out in 2005. According to Metro, the biggest challenges they faced were separating the light rail from other modes of public transport and building a recognisable brand. This was achieved through the use of an illustration, rather than a photo, and consistent use of the Miss Kitty personality across all light rail advertising campaigns. Rather than try to dispel the perception that the light rail was an expensive service, this perception was used to position it as a premium option in public transport that was good value for money, rather than cheap. Customers were involved in the roll-out through personalised direct advertising campaigns, directed at specific demographics identified to be part of Metro's potential customer base.
Impact on customer experience	From a commercial perspective, the fact that Metro runs the light rail at a profit with no operating subsidy, demonstrates the ability to run a public transport system, albeit relatively small in scale compared to other systems, in a viable manner. From a customer perspective, the Inner West catchment area refers to the service as "our light rail," which displays a level of engagement and ownership not typically seen in public transport operation.

Image courtesy of Metro Transport Sydney

5.1.2 Larger operators

Operators that have been successful in creating an overall customer experience have placed customers at the heart of everything they do. For non-subsidised operators, this occurs out of necessity to remain viable through customer retention. However, larger operators who service considerably larger and more diverse customer bases may be limited in their capacity to rapidly implement more targeted customer-focused initiatives such as those outlined in Case Studies 1 and 2. The internal governance of these organisations must therefore be geared towards the needs of their end users. This means making a customer-focused commitment in all areas of the organisation, from executives through to front line staff, engineering and technical operations staff. A successful approach to achieving this is through a customer-focused charter, which then becomes the benchmark for achieving best-practice service outcomes.

The following two case studies illustrate how a customer focus can be instilled in large public transport organisations, both in a public and private sector environment.

CASE STUDY 2
Queensland Rail Customer Charter

Queensland Rail's Customer Charter sets out QR's "commitment to provide customers with the service they have the right to expect". It focuses on seven key areas, identified by customers as being important to them. Each area has defined metrics against which QR's performance is regularly measured. Performance is reported to customers in a transparent manner via QR's website.

Background	In late 2009, preparations began for Queensland Rail's split into two separate entities – its commercial activities were to be publicly floated, while its core passenger services were to remain government run. This split was the catalyst for QR to develop an organisational strategy focused first and foremost on its customers. The QR "Customer Journey" includes four themes: transparency, teamwork, talent and technology. It is under the theme of transparency that QR's customer charter was developed. QR recognised that a policy of 'no walls' between the organisation and its customers was best practice among the world's most successful companies. This led QR to ask their customers what was important to them. QR undertook formal research, commissioned independent surveys, ran focus groups, and engaged with frontline staff to find out what was important to its customers. After all the data was collated and distilled, seven key areas of importance were identified: "your safety", "your time", "your information", "your comfort", "your surroundings", "your personal service", and "your feedback". The results were then taken to QR's quarterly Community Reference Group (CRG) meetings. The feedback was positive and so the Customer Charter was born.
Implementation	Implementation of the Customer Charter has been all about engagement with QR's 7000 strong workforce. QR sees the key to successful implementation to be instilling in every QR staff member a sense of ownership over the seven customer service promises. For the behaviours described in the charter to be culturally embedded in daily practices and procedures, it is important for staff to actively believe in them rather than see them merely as management rhetoric. Customers have been involved in this initiative at every step along the way. The whole basis of the charter is to ensure that customer needs come first. As well as being involved in the initial stages of developing the charter, the charter is to be reviewed annually based on customer feedback and consultation with the Customer Service Institute of Australia (CSIA). The results of QR's performance against each of its seven customer service promises are reported on QR's website regularly and transparently for the public to see. The performance measures were drawn up in accordance with what was important to customers and existing data was used to develop new reports to meet the new information demands.
Impact on customer experience	QR has seen a strong positive engagement with the customer charter throughout the organisation. Recent survey results indicate that 93% of the QR workforce actively employs the seven service promises on a daily basis. Implementation of the charter has directly resulted in an increase in customer satisfaction. In late 2009, QR's customer satisfaction levels were at 85% and falling. For the last 10 months they have consistently reached 92%. QR has also achieved certification against the International Customer Service Standard. QR is aiming to achieve certification again in 2011. This will make it the first integrated railway network operator and manager in the world to achieve this certification for two years running. Certification provides a valuable management framework for QR to develop even better customer service standards. From here, QR is planning to work with the Office of the Customer Advocate to develop further initiatives in transparency and is in the process of trialling Wi-Fi on trains.

Image courtesy of Queensland Rail

As franchised and private sector operations become an increasingly popular model for the delivery of public transport around the world, the private sector must also keep pace with the dynamic expectations and standards of customers. The following case study illustrates the measures put in place by Veolia Transdev, the world's largest privately-owned passenger transport provider, in order to ensure consistency in customer service standards across all its global operations. In Australia, Veolia Transdev operates bus services in Brisbane, and bus, light rail and monorail services in Sydney.

CASE STUDY 3
Veolia Transdev's Going for Green™ – a global customer service staff training initiative

Veolia Transdev's Going for Green™ program is an innovation in passenger care encompassing a powerful, proprietary, customer service training program that equips all staff including drivers, customers service officers and managers to understand the perceptions of customers and take care of their concerns.

Background	Veolia Transdev operates some of the largest and most sophisticated transport networks across the world. Its Going for Green™ customer service training program was created to address a global need in its operations – understanding and responding to passenger needs. As its main objective, Going For Green™ builds expertise in seeing situations from the customer's point of view and in responding effectively. The program takes recognised and relatively complex behavioural theories and simplifies them into an actionable tool-kit designed especially for drivers.
Implementation	Going for Green™ was custom-built by Veolia Transdev in collaboration with a well-known, international curriculum development organisation. The program's title was generated from the use of a traffic light metaphor, where drivers and other staff are responsible for moving passengers from the "red" stage (distress) or "yellow" stage (agitation, anxiety, confusion) into the "green" stage (confident and at ease). The program is based on the "real-world" situations that are most frequently encountered by employees. Structured around extensive role-playing exercises, the skills are embedded into operators' behaviour patterns. The situations covered include: • Greeting passengers; • Taking the initiative to provide information; • Guiding confused passengers; • Dealing with service disruptions and delays; • Managing unexpected flows of passengers; • Responding to different needs; • Helping a passenger in distress; and • Dealing with disruptive passengers. Training is delivered by individuals who have been trained and certified after several weeks of work and 'real-time' coaching by a Master Trainer. Veolia Transdev sees the key to the program's successful implementation as being the empowerment of employees to make a difference in the lives of their customers.
Impact on customer experience	The program has achieved excellent results in improving operators' ability to positively impact and support passengers. It has been implemented with quantifiable success at over 35 locations. Employees readily testify to the value of Going For Green™ training, saying it makes them feel confident and better able to provide the first rate experience their customers expect. 86 per cent of operators rate the program as "Excellent" or "Very Good" and 84 per cent said that the training offered them new ways to respond to passengers. The real proof of the program's value, however, is in the change in passengers' response to staff. Extensive consumer testing was carried out in five locations both before and after the Going For Green™ training was undertaken. In all locations there were statistically significant, positive changes in passenger perception of driver helpfulness, friendliness and skill at providing information in a situation where there had been a delay or service interruption. The program has been expanded for roll-out to metro and tram-way services all over Europe. It is also currently being implemented in New Zealand and Australia, including on Veolia Transdev's bus services in Brisbane, and bus, light rail and monorail services in Sydney.

Image courtesy of Veolia Transdev

5.1.3 Smaller operators

Some smaller public transport operators are unable to rely on government subsidies for revenue or have additional competing pressures. Therefore, these operators, such as Metro Transport and Bass & Flinders (operator of the Manly Fast Ferry), focus on customer satisfaction purely for commercial reasons. For these operators, customer-focused service delivery is essential in order to retain customers and remain viable.

CASE STUDY 4
Small operator customer-centric service oriented innovations

Bass & Flinders operates the Manly Fast Ferry high speed commuter services between Manly and Circular Quay in Sydney. Operating with no government assistance, the company's commercial viability depends upon a customer-centric service delivery model.

Background	In early 2009 the government owned JetCat, which provided 'express' ferry services from Manly to Circular Quay, was replaced by the privately-run Manly Fast Ferry. The JetCat had faced significant criticism regarding the frequency and reliability of services, so Manly Fast Ferry faced the challenge of improving the service and turning customer perceptions around.
Implementation	Being a new operator, it was vital for the Manly Fast Ferry to establish a good reputation with customers, and distinguish itself from the former government-run ferry service. These challenges were compounded by comments in the press such as statements from the Maritime Union that Bass & Flinders was "doomed to fail". In response to these challenges, Bass & Flinders has put a raft of initiatives in place that establish the customer as the centrepiece of their business model. These initiatives include: • A customer loyalty program offering discounts on tickets and customer rewards; • An SMS notification service to inform customers of any delays and allow them to plan in advance; • Timetables tailored to match the results of customer survey responses; • Free wi-fi on board all ferries; • Full bar and espresso service on board; • The ability to buy tickets from the bar on board or from wharf kiosks; • A range of ticket options including smartcards, single ticket and 'against the flow' discounts; and • The ability to bring bicycles on board. Customers were the driver behind many of these initiatives and the participation rate in customer surveys conducted on board was as high as 80 per cent. All comments and suggestions made in the customer surveys were followed up personally, either with responses in the post or face-to-face meeting on board with the managing director of the company.
Impact on customer experience	Bass & Flinders has received significant positive customer feedback in regard to its personalised service. Customers notice the fact that the ticketing staff know their names, and say "good morning" with a smile, and this is reflected in customer feedback and increased patronage. Both Manly Fast Ferry and competitor Sydney Fast Ferries have almost doubled the daily patronage previously seen on the public-operated Jetcat. JetCat ferries carried on average 2,100 passengers per day. Between the privately operated fast ferry services, 4,100 passengers per day now make the trip from Manly to Circular Quay. This is perhaps, and at the very least partly, due to the additional services that are offered and the increased reliability. Bass & Flinders is now looking for opportunities to expand its successful business model to other ferry routes in Sydney.

Image courtesy of Bass & Flinders Cruises

5.2 Addressing key barriers

This section considers some of the key customer priorities that are seen as barriers to increased use of public transport. In particular, it focuses on the barriers of reliability and frequency, and overcrowding.

Rather than identifying traditional operational or technical mechanisms for overcoming these barriers, this study has focused on innovative ways of addressing them by focusing on the customer perspective. We note, however, that such innovations are not intended to negate the need for ongoing investment in fleet and infrastructure maintenance, investment in system capacity and operational improvements for improved system and asset utilisation. Nevertheless, these innovations do demonstrate that there are other measures, focused on the customer, that can go some way to addressing barriers to increased public transport use at potentially significantly lower cost than more traditional options.

5.2.1 Reliability and frequency

Reliability and frequency concerns have traditionally been addressed through initiatives focused on making services run on time and building peak hour system capacity. Such initiatives have included timetable changes and investments in infrastructure and rolling stock. However, to find solutions to consumer concerns with reliability and frequency it is also worth reviewing the reasons customers place such an emphasis on reliability and frequency of services.

For customers, it is not simply about delays to travel time or disruptions to journeys, although these are of course significant factors. In addition, a primary driver behind the customer's desire for reliability and frequency relates to risk aversion. In practice, this means the risk of arriving at a station or stop but not knowing when the next service will arrive. The uncertainty of this outcome creates frustration for customers and takes away their ability to make informed decisions about their journey.

Uncertainty is also a major factor behind customers seeking to avoid interchanges between services or modes. This is strongly demonstrated in the 'willingness to pay' results presented in chapter 3. These results show that a customer's aversion to an 'unexpected' wait is up to four times greater than the aversion to a planned and informed wait.

It is important to be aware that while addressing reliability and frequency from a customer perspective is likely to be beneficial, it will not overcome the need for addressing the operating fundamentals of providing public transport services. These fundamentals relate to often overdue investments in infrastructure and rolling stock. Without addressing these fundamentals and existing high peak hour utilisation, customer centric measures are more likely to benefit existing public transport passengers and achieve only modest results in attracting new passengers.

However, from an operator perspective, there are two important indirect benefits from introducing customer centric measures. First, a focus on introducing customer-centric measures promises to build stronger advocacy in the community for key investments in public transport infrastructure and rolling stock. Second, customer centric measures promise that additional capacity through investments in public transport infrastructure and rolling stock will meet a more enthusiastic demand response – providing higher investment returns.

Innovative solutions

Two solutions, with a customer focus, present themselves as action priorities:

1. Provide customers with real-time information about services; and
2. Adjust service patterns to reduce the uncertainty associated with timetables.

Each of these will now be discussed.

1. Real-time information

Real-time information means providing customers with information about specific services direct to their current location. This may be via mobile applications or at the station or stop where they are waiting. Providing this information to customers gives them greater control in managing their travel and reduces the risks and uncertainty associated with service delays.

The appeal of real-time information was constant across all customers and all locations.

An interesting result from TNS' survey was the appeal of real-time information provided by a user-pays SMS service. Only 36 per cent of frequent users surveyed indicated an interest in an SMS service compared to 81 per cent who indicated interest in real-time information generally.

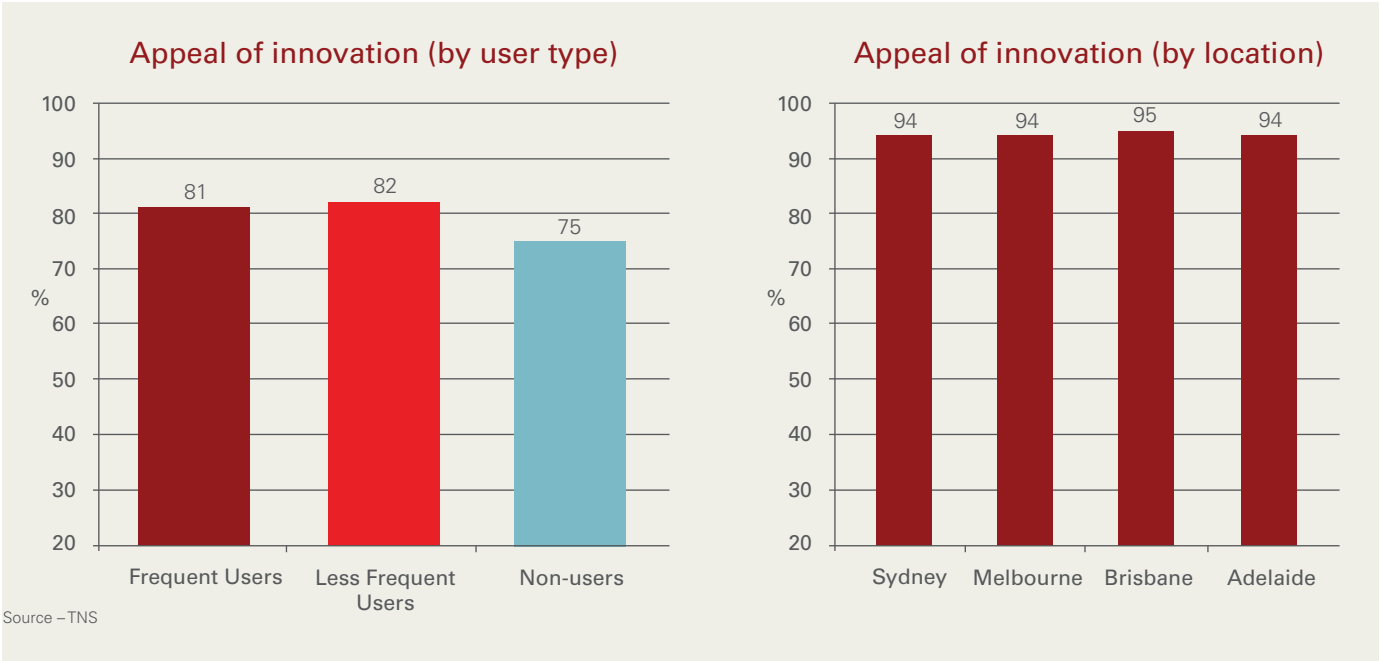
This finding suggests that customers:

- Do not expect to pay for real-time information;
- Want to be in control of when and how they access information; and
- Expect operators to move rapidly in line with technological advances. Five to ten years ago, an SMS information service would have been considered cutting edge. Now these services fall behind those provided in other industries. Customers clearly expect public transport operators to keep pace with these other industries.

There are likely to be multiple business models available for providing customers with real-time information. Real-time information systems can be developed in-house or data and platforms may be made available to others to commercialise real-time information delivery. There are, of course, issues that need to be addressed depending on the business model chosen; in particular, the control, quality and availability of data and systems.

An example of the successful provision of real-time information to customers is described in the following case study.

Figure 9 - Real-time information



Source – TNS

CASE STUDY 5
Yarra Trams tramTRACKER™ – providing real-time information to customers

tramTRACKER™ is Yarra Trams' real-time tram arrival information service. It uses real-time GPS positioning technology to track the current position of all trams on the Yarra Trams network. It can be accessed via phone (local call cost of 25 cents), SMS (55 cents), online (accessed for free) or via an iPhone application for every stop across the Melbourne tram network.

Background	The initiative was introduced in response to customer feedback regarding a need for information on tram service arrivals and disruptions. Yarra Trams began investigating options to provide real-time information to customers wherever they were on the tram network. Over a number of months, tramTRACKER™ was created to deliver tram service information, initially via phone and SMS, and later via the web. The project's success was to be measured by customer usage of, and feedback about, the service.
Implementation	The challenge in implementation of a real-time tram arrival information service was developing a service that would appeal to the public and have a viable cost structure. The installation of electronic Passenger Information Display Screens (PIDs) at major city tram stops was popular with passengers, but the cost of the technology and hardware prevented installation at all stops across the network. The success of tram-tracker has been a customer-focused approach. Customers were involved in the roll-out at every stage. This included the following: • Customer research was undertaken to test the appeal of the service and acceptance of costs for its delivery. • Trial of the system was undertaken with customers on two routes, with customers encouraged to provide feedback. • Advertising material was focused on specific events and directed at specific customer demographics.
Impact on customer experience	By all of Yarra Trams' measures, the introduction of tramTRACKER™ has been a positive experience. Usage of the system continues to grow strongly. • Use has increased from 31,000 requests in February 2008 to 551,000 requests in February 2011. • Increased usage across all modes (phone, SMS and web) at average rate of 44 per cent per month (even with the introduction of the free web-based service). • 15 per cent decrease in tram timetable enquiries to the Metlink call centre, representing direct cost savings to Yarra Trams. • Positive results from tramTRACKER™ customer survey including a high level of awareness (82 per cent) and high level of satisfaction overall (92 per cent). Yarra Trams considers tramTRACKER™ to be an evolving product. Increasing incomes from the SMS service are invested back into system development. Planning is currently underway to make further use of the technology through: • Continued expansion of tramTRACKER™ to include more information on service delays. • Modification of the administrative centre to allow greater segmentation of messages. • Replacement of less accurate technology that feeds electronic PIDs at large city tram stops with tramTRACKER™ information.

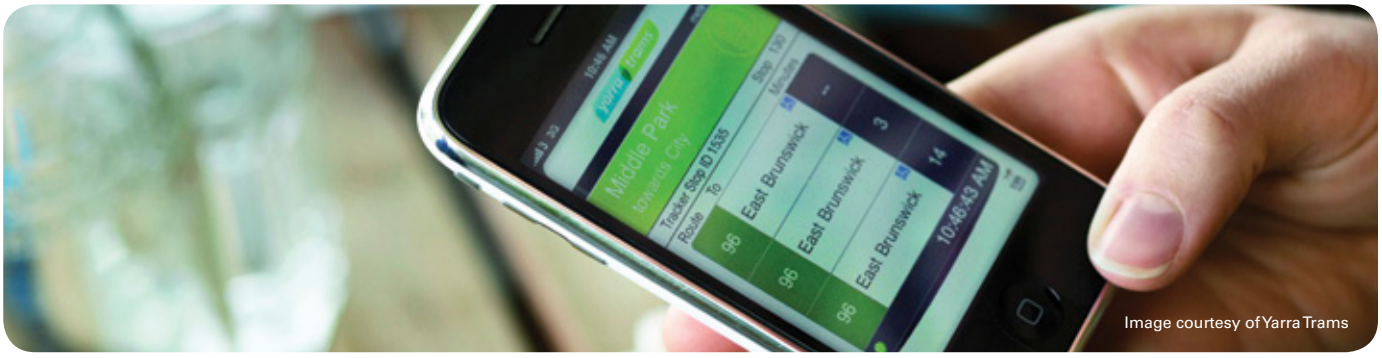


Image courtesy of Yarra Trams

2. Adapting service patterns

An alternative path to reducing customer anxiety associated with travel uncertainty is replacing timetabled services with services run on a metro-style operation. Metro-style operations run at regular intervals. Consultation with operators and TNS' survey results suggest that expected intervals are from 5-10 minutes during peak periods.

Metro-style services mean a customer knows they will never have to wait for a service for more than a pre-determined, and known, period of time. From an operator's perspective this also makes the planning of interchanges simpler, negating the need to coordinate the arrival and departure of specific services.

Deciding the frequency of services in off-peak times requires an understanding of the trade-offs between the operating costs of running frequent services and the potential off-peak patronage that can be enticed by running these services more frequently. During stakeholder consultation, all operators identified growing off-peak patronage as a key priority. In most cases, ability to grow peak demand is limited by infrastructure and rolling stock constraints. Hence, the off-peak period reflects a time when latent capacity on the networks can be utilised. It is also a period where less frequent users can potentially be converted to public transport. Growing off-peak demand has positive revenue implications, offsetting some of the costs associated with running lower-patronised services across this period.

CASE STUDY 6
Sydney Metrobus service

Metrobus is a high-frequency service offered in Sydney to provide high-capacity, easy to use links between key employment and growth centres across Sydney.

Background	Metrobus was introduced in Sydney in 2008 as a part of a $12 million, 12 month trial of a high-frequency service covering a route from Leichhardt to Maroubra Junction. The trial was in response to customer concerns about overcrowding and infrequency of bus services, particularly during peak commuter periods. Rather than operating on a timetable, the service is offered on a metro-style basis with services operating every 10 minutes in peak periods, every 15 minutes during off-peak periods and every 20 minutes in the evening and on weekends. The buses also feature next stop displays and audio announcements, which are intended to reduce uncertainty for customers. The Metrobus stops at major bus and rail stations thus creating greater ease of interchange for customers.
Implementation	The initial route was very popular with Sydney public transport users with more than 600,000 people travelling on the first route, and an 81 per cent increase in patronage between 2008 and 2009. In early 2009, the Metrobus was expanded to an additional four routes. In 2010 it was announced that a further eight routes would be rolled out from mid-2010 to mid-2011. After the trial period it was also decided that all Metrobus routes would run from one suburban location to another, passing through the city on their way. This is intended to allow greater ease of interchange between and within modes, as well as allowing customers to make trips from one suburban location to another. Through-running bus routes can also alleviate congestion where buses queue to arrive at and depart from CBD terminals.
Impact on customer experience	All evaluations point to the Metrobus having a positive impact on the customer experience. The Sydney Morning Herald described the bus' initial success as a "standing ovation". Much of this success stems from the way the Metrobus approach has responded to customer concerns and priorities. Anecdotal evidence points to customers feeling much more comfortable using Metrobuses for interchange due to the locations they stop at, the metro-style timetable and the announcements regarding stops and locations. All of these features reduce the uncertainty that customers experience on a public transport trip. The Metrobuses are also continuing to respond to customers' evolving priorities with a trial of free Wi-Fi on the M10 route, with customers entitled to two free 45 minute sessions per day.

5.2.2 Overcrowding

While customers have indicated, as noted in section 4.4, that they are willing to trade-off crowding in order to avoid delay, crowding during peak periods on public transport services remains important in shaping customers' perceptions. From an operator's perspective, levels of crowding are approached by understanding the cost of reducing crowding versus customer service trade-offs, i.e. catering for a two to three hour period where demand exceeds system capacity versus 21 - 22 hours of each day where system capacity exceeds demand.

Increasing the capacity of a public transport system can be achieved by increased investment in infrastructure and fleet, optimising timetables or innovative refurbishments of current rolling stock to increase carrying capacity. Where significant capacity constraints emerge, a combination of all three of these approaches may be required. This style of investment is crucial in most major Australian cities to meet increasing demand for public transport services. In the case of rail, debate continues about the type of rolling stock necessary to reduce the adverse effects of crowding – this particularly focuses on whether rail cars should be single deck or double deck, and how many doors are optimal for best access and egress. In the case of buses, the number of doors and how access and egress might be controlled also impact on crowding.

From a customer perspective, however, there are ways to manage the imposition of crowding so that its im pact on the customer experience is lessened. As noted, customers are particularly concerned about the invasion of their personal space and the assurance of a seat provides a degree of control over their own space.

Innovative solutions

Two solutions, with a customer focus, present themselves as possible options.

1. Quiet carriages and (school) child-free carriages; and
2. Premium carriages, which guarantee a seat and enhanced facilities for customers.

Each of these will now be discussed.

1. Quiet carriages

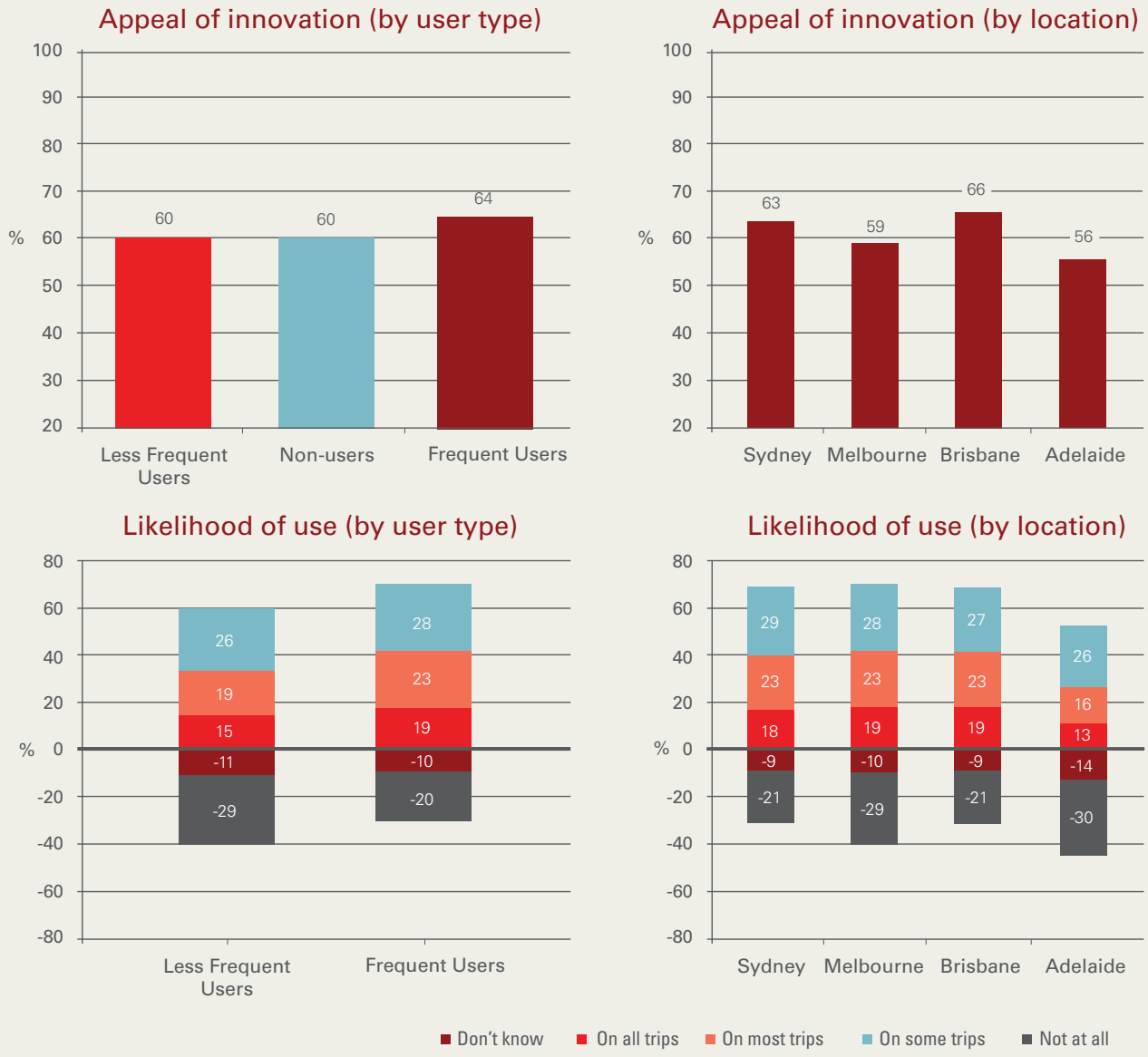
The idea of providing designated quiet carriages and child-free carriages on rail services was examined during the quantitative phase of the research. Both ideas received very positive feedback from users. These measures will not increase the capacity of the system to move customers. However, they will improve the management of customer interactions by providing a more controlled space in which customers can travel.

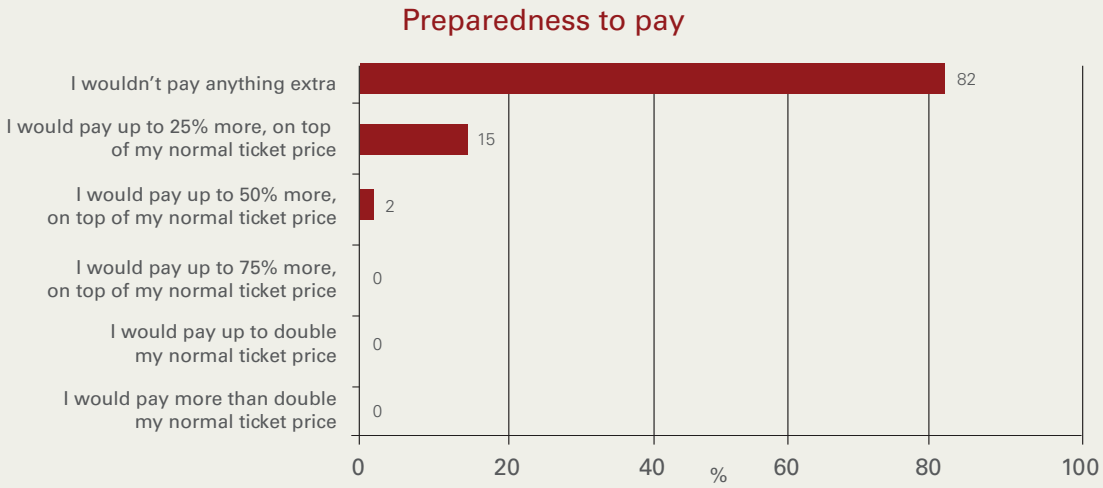
There were three findings that emerged when investigating these initiatives:

1. All user types displayed an interest in these initiatives with a high proportion indicating they would use such services if implemented;
2. Users do not expect to have to pay for these services; and
3. The appeal and intention to use was highest in Brisbane. This result is reflecting a positive reaction to the recent introduction of quiet carriages on certain Queensland Rail services.

Case study 7 demonstrates the success of a quiet carriages initiative implemented in South East Queensland. Recent media reports highlight a push for Sydney to emulate this innovation.

Figure 10 - Quiet carriages



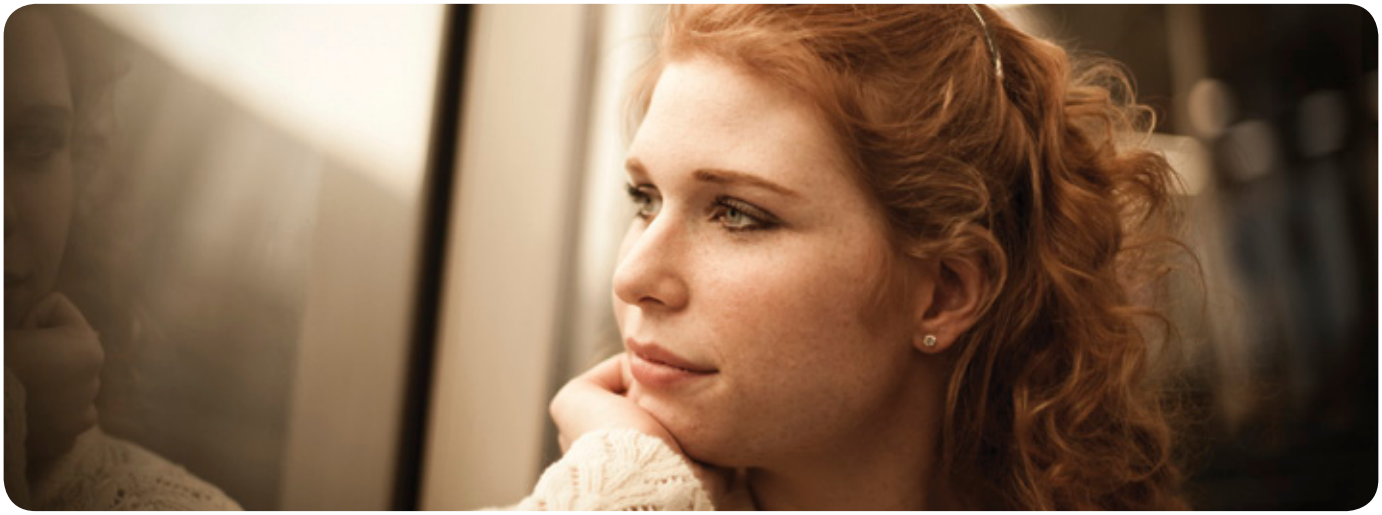


Source – TNS

CASE STUDY 7
Quiet Carriages

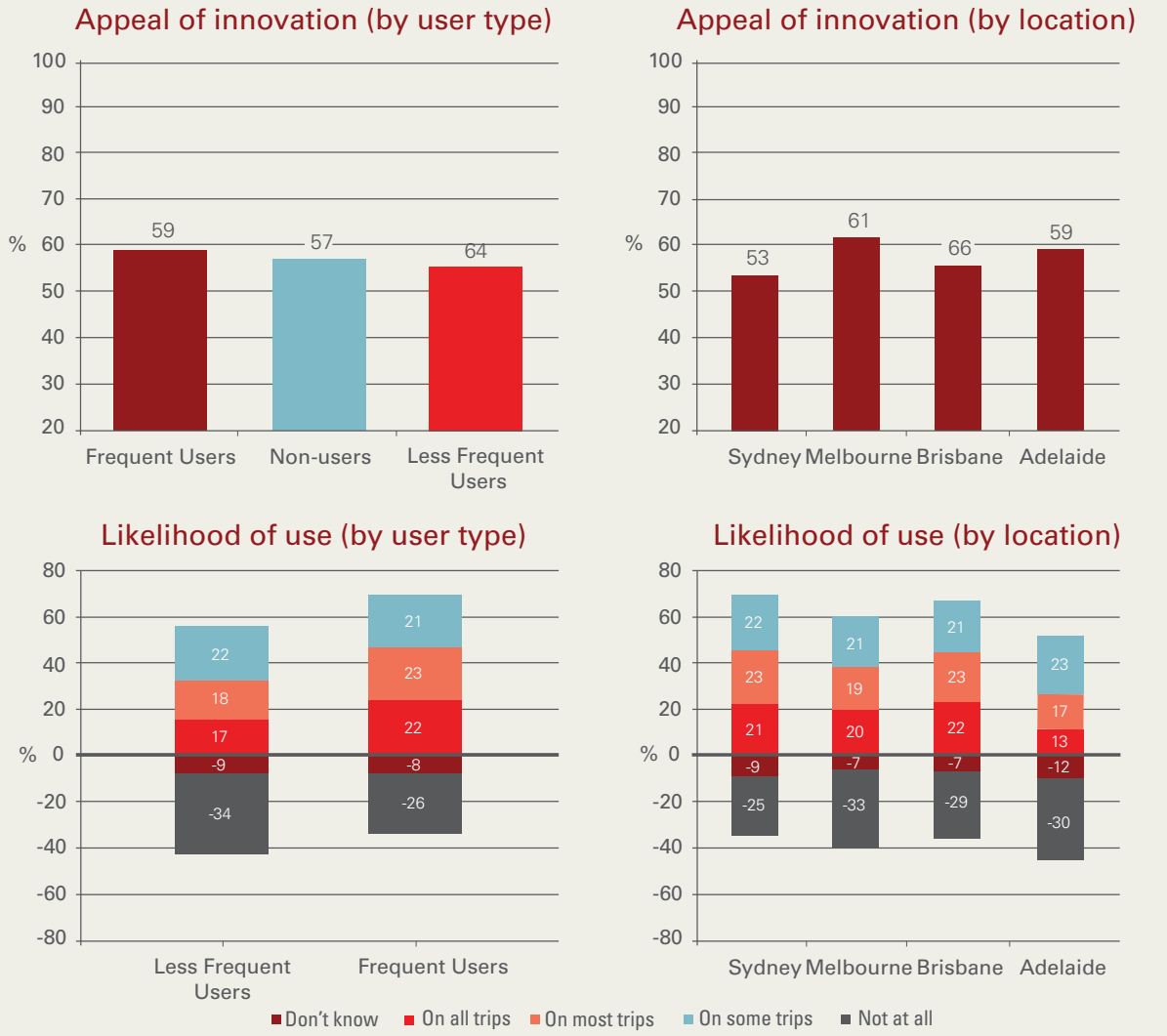
The 'quiet carriage' concept is an Australia-first initiative from Queensland Rail. In response to customer feedback and the success of a three-month trial period in 2010, on specific lines the first and last carriage of every six-car train is now a 'quiet carriage'. Customers travelling in quiet carriages are asked to refrain from having loud conversations, talking on their mobile phones and listening to loud musical devices.

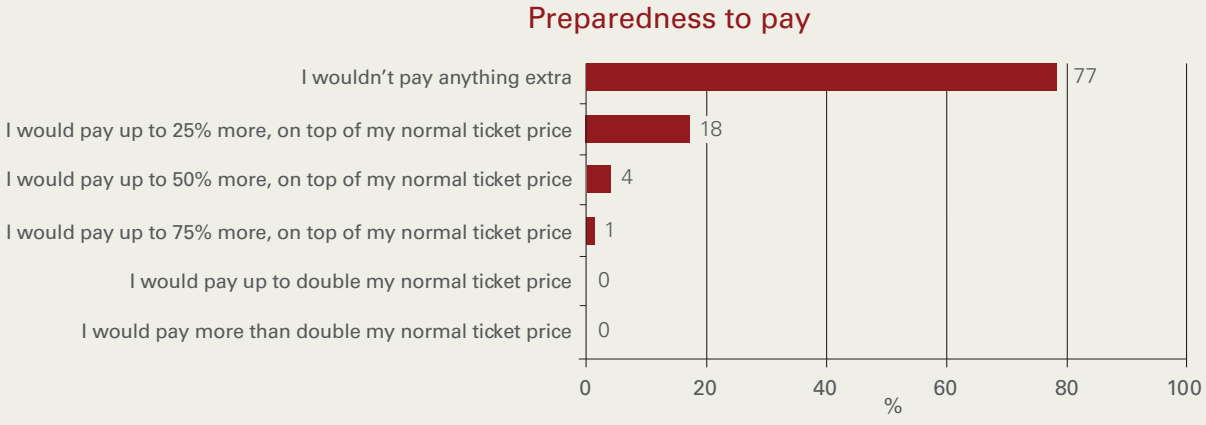
Background	The initiative was introduced on the basis of customer suggestions from Queensland Rail's biannual Customer Satisfaction Survey and positive feedback on the idea at Community Reference Group (CRG) meetings. The chief aim of the project was to improve customer satisfaction – to promote a quieter, more pleasant travel experience for customers. The project's success was to be measured by customer feedback.
Implementation	Overall, the initiative has been relatively easy and cost effective to implement. It has not required any major changes to infrastructure and the estimated total cost of the project to date is under $50,000, including advertising and community education. Two kiosks were built at stations for the purpose of providing information to the public about the initiative, but these kiosks are now being used for several other purposes, thereby reducing the cost of the project. One challenge to implementation was customer complaints about frequent, loud announcements on quiet carriages. Customer feedback about this was taken on board, and the number of announcements reduced. From QR's perspective, the key to successful implementation was that the quiet carriage idea was customer driven and this was used as a key part of the advertising campaign to get the public on board. Additionally, the use of Customer Care Representatives on trains to explain the service to customers, as well as to listen to their feedback, provided customers with a consultative experience and helped the implementation run smoothly.
Impact on customer experience	Queensland Rail regards the initiative as a "huge success". During the initial trial period in 2010, 414 calls were received about the project on the Customer Feedback Line. • 65 per cent of these calls were in complete support of the initiative. • 35 per cent offered suggestions for improvement – including an increase in the number of quiet carriages, while only a small minority did not like the initiative. Queensland's two major community advocacy groups in public transport have also given their support to this innovation. In response to customer feedback, the initiative has now been made permanent and Queensland Rail has doubled the number of quiet carriages on six-carriage trains. Queensland Rail will be monitoring the results of the next Customer Satisfaction Survey to ensure customers are still responding positively to the initiative. There are plans to use the survey as a mechanism for identifying further new customer-driven rail innovations.



When asked, respondents also found that carriages without children, primarily school children, would be a desirable initiative. Importantly, however, customers indicated that while they had a preference for this initiative, the majority were not willing to pay extra for it.

Figure 11 - Child free carriages





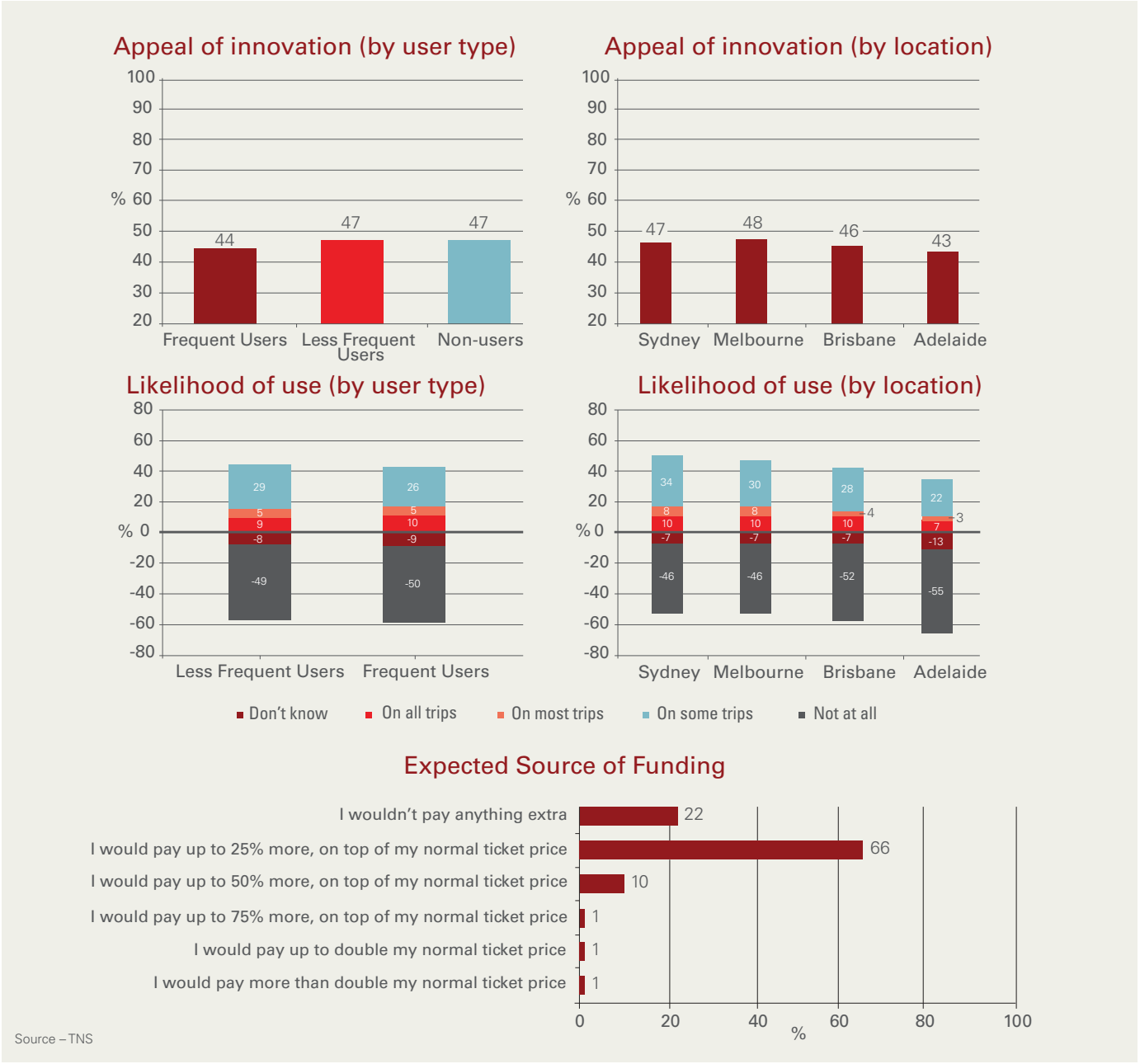
Source – TNS

2. Premium carriages

A second approach tested by TNS was offering premium carriages, where customers pay more for additional services including, for instance, a guaranteed seat, access to newspapers, or Wi-Fi. This effectively means allowing customers with a preference for a higher level of desired service to pay for the opportunity to obtain this.

While fewer customers indicated a preference or potential to use this service, compared to the quiet carriage or child free carriage initiatives, 66 per cent of potential users displayed a willingness to pay up to 25 per cent more than the usual ticket price for this service. This finding suggests that providing such services would not only improve the customers' perception of the service, but also strengthen revenue streams.

Figure 12 - Premium carriages



Source – TNS

Such services are most likely to appeal to longer distance travellers.

If operators were looking to offer such services (and regulators were to allow them), one way to market the services may be by appealing to their utilitarian nature; that is, promoting the fact that you get a seat, rather than the premium nature of the service – you pay more for a better quality service. This type of branding may sit better with the egalitarian perceptions of government-subsidised public transport. By introducing premium carriages, public transport operators have the opportunity and incremental revenue return to implement innovations in customer service that, over time, are likely to be extended to all carriages. This approach also reinforces the link of improving customer service to higher fares.

5.3 Other innovations

Other technological and service advancements will also play a role in overcoming barriers and improving service outcomes for customers. Some innovations may not necessarily address a specific barrier, however such innovations can aid in growing public transport use by increasing customer enjoyment. Alternatively, some innovations may have the scope to address multiple barriers. Two innovations that have been identified as important to customers are identified below.

5.3.1 Smartcard ticketing

Ten years ago the notion of smartcard or integrated ticketing within Australia would have been seen as an innovation. The current research suggests that this type of service is now viewed as a fundamental requirement of a modern public transport system. Indeed it is a core input to making a wider range of customer service innovations.

Survey respondents were asked to compare the relative importance of the introduction of a smartcard ticketing system with the other key priorities they had identified. More than half of respondents believed smartcard ticketing was equally or more important than the other fundamentals (such as frequency, reliability and crowding), with the more frequent users displaying this sentiment the strongest. This shift from viewing integrated or smartcard ticketing as an innovation to a necessity also demonstrates the changing goal posts for public transport operators.

Much of the appeal of smartcard ticketing for customers is that it assists them in making complex journeys. As cities grow, customers increasingly have to use interchanges and multiple modes to complete a single journey. The aversion that customers show towards interchange is largely because of the additional time and uncertainty it adds to a journey. The additional imposition of requiring multiple tickets, and the increased cost this can have when different fare structures operate between modes, further increases the aversion to interchange.

From an operator's perspective, there are several advantages of smartcard ticketing. First, smartcards provide a huge opportunity to increase the level of data available on transport patterns and consumer behaviour. This in turn allows for more precise analysis of customer behaviour and requirements, both of which can then flow into the provision of targeted customer services. By the same measure, more precise data on customer behaviour allows operators to deploy services and redesign routes to meet fluctuations in demand as they occur. Another major advantage of smartcard systems is the significant reduction in boarding times, providing faster services for customers and increased asset productivity for operators.

The case study below details the global experience in smartcard ticketing currently being deployed in South East Queensland and Sydney by Cubic Transportation Systems.

CASE STUDY 8
Smartcard ticketing

Cubic Transportation Systems is behind the deployment of electronic smartcard ticketing systems for public transport in both Brisbane and Sydney. Brisbane's *go* card has been named Australia's best public transport smartcard system. Cubic is now working with the Public Transport Ticketing Corporation (PTTC) to implement a similar project for Sydney.

Image courtesy of Cubic Transportation Systems

Background	Cubic Transportation Systems is one of the world's largest and most experienced providers of automated fare collection solutions and revenue management services for mass transportation. Cubic is responsible for systems such as the Oyster Card in London, Tap card in Los Angeles, Metro Card in New York and Clipper card in San Francisco. Cubic fare collection devices collect more than $80 million in fares worldwide every day or a massive $30 billion per annum. Locally, Cubic worked with Translink in Brisbane to design and build, and now operate and maintain, Australia's biggest smartcard ticketing project (*go* card). News reports in June 2011 indicate that the two-millionth *go* card has now been issued. A significant expansion of the *go* card distribution network has seen a 150% increase in use over the past 18 months. The smartcards are now used for more than 80% of weekday journeys on the TransLink network. In May 2010 Cubic was awarded the contract to do the same in Sydney, as lead contractor of the Pearl Consortium. Smartcard ticketing for public transport is a means of using technology to allow for customer convenience, increase patronage information, reduce marginal costs and integrate fare collection between transport modes. Historically, ticketing has been paper-based. The attractiveness of smartcards and electronic gating for use on buses and ferries, for customers, is the increased flexibility and convenience of personal ticket management, the increase in speed with which people can access stations, platforms and wharves or board buses, as well as payment methods, and the reliability of the technology to work every time.
Implementation	Each of Cubic's implementations involves unique tailoring of systems to suit the distinct requirements of the particular public transport marketplace. Fare policies, environmental conditions (e.g. tropics versus snow), modes of public transport and economic drivers are all vital considerations. Due to the tailored nature of each system, varied or unforeseen challenges are likely to arise. In Cubic's experience, the key factors to overcoming these challenges and ensuring successful implementation of smartcard systems are: • Implementing technology with proven reliability; • Fare policies that support a smartcard ticketing system; • Keeping new implementations simple initially and rolling out new features and customer benefits over time; • A solid marketing and customer education campaign that supports the transition of customers from the current fare media to smartcards; and • An open and honest partnership between the public transport authority and smartcard system provider, focusing on the desired outcome and results.
Impact on customer experience	The international growth in popularity of smartcards is testament to their success. The impacts of smartcard technology on the customer experience in Brisbane (and beginning in late 2012 on Sydney's ferries) includes the benefits of: • Travelling on all modes of public transport with the same card; • The treatment of journeys across multiple modes of public transport as a single journey; • Not having to queue to purchase tickets; • Increased speed of boarding, resulting in better on-time performance of services; • Access to travel history and enjoyment of discounts; • The ability to register the smartcard to ensure the value on lost cards can be replaced; and • The enhancement of services to better meet the needs of customers through the increased capacity to access data on individual journey patterns.
Future trends	The next step for building on smartcard electronic ticketing successes is the move to an account-based system. This new technology focuses on the 'account' of the public transport customer instead of the 'card'. This new system offers the promise and convenience of interoperability as the 'account' can be utilised through multiple channels, such as credit cards or mobile phones. Cubic Transportation Systems is introducing open loop contactless EMV (standing for 'Europay, MasterCard and Visa') cards as a new payment media, to be initially accepted on London buses in time for the 2012 Olympic Games, and as part of the full multimodal implementation of Vancouver's system. The technology behind how this operates is very similar to contactless payment technology that allows for 'tap and go' as currently being deployed in Australia and elsewhere for the retail environment. Intermodal public transport fare payment in Vancouver using account based technology is targeted to be tested, accepted and fully deployed by early 2013.

5.3.2 Wireless internet access

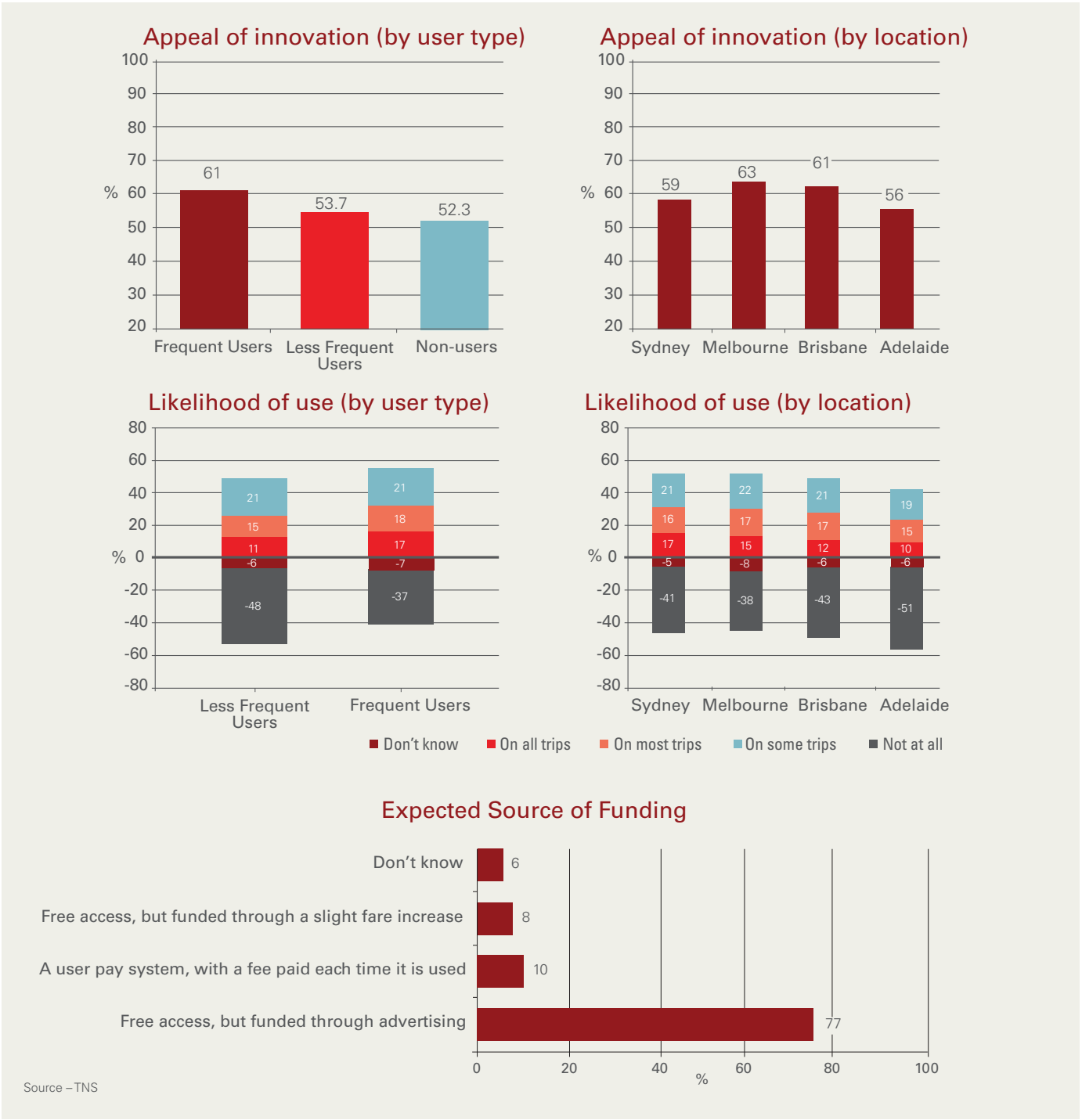
In line with advancements in mobile communications technology, wireless internet access (Wi-Fi) has become a prevalent component of the customer experience in places such as cafés, tourist accommodation and retail outlets. Wi-Fi on board public transport services has been widely used overseas to enhance the customer experience and now is starting to be rolled out in a number of Australian cities.

Surveyed customers responded positively to this innovation in the following ways:

- Customers indicated that this type of service is appealing, with the majority of frequent users indicating they would most likely use these services if they were provided; and
- Although customers did not demonstrate a willingness to pay for the use of Wi-Fi on board public transport, 77 per cent indicated that a free service could be funded through advertising.

The provision of Wi-Fi on public transport services has the potential to transform the idea of commuting as 'lost time' to an opportunity for social interaction or workplace productivity. To this end, this innovation may help to enhance the appeal of public transport over private vehicle use, at least for those customers who indicated they would use free Wi-Fi. Additionally, it must be noted that Wi-Fi can also improve customers' access to real-time information on services, helping to allay the inherent risk aversion of customers outlined in section 5.2.1.

Figure 13 - Wireless internet access

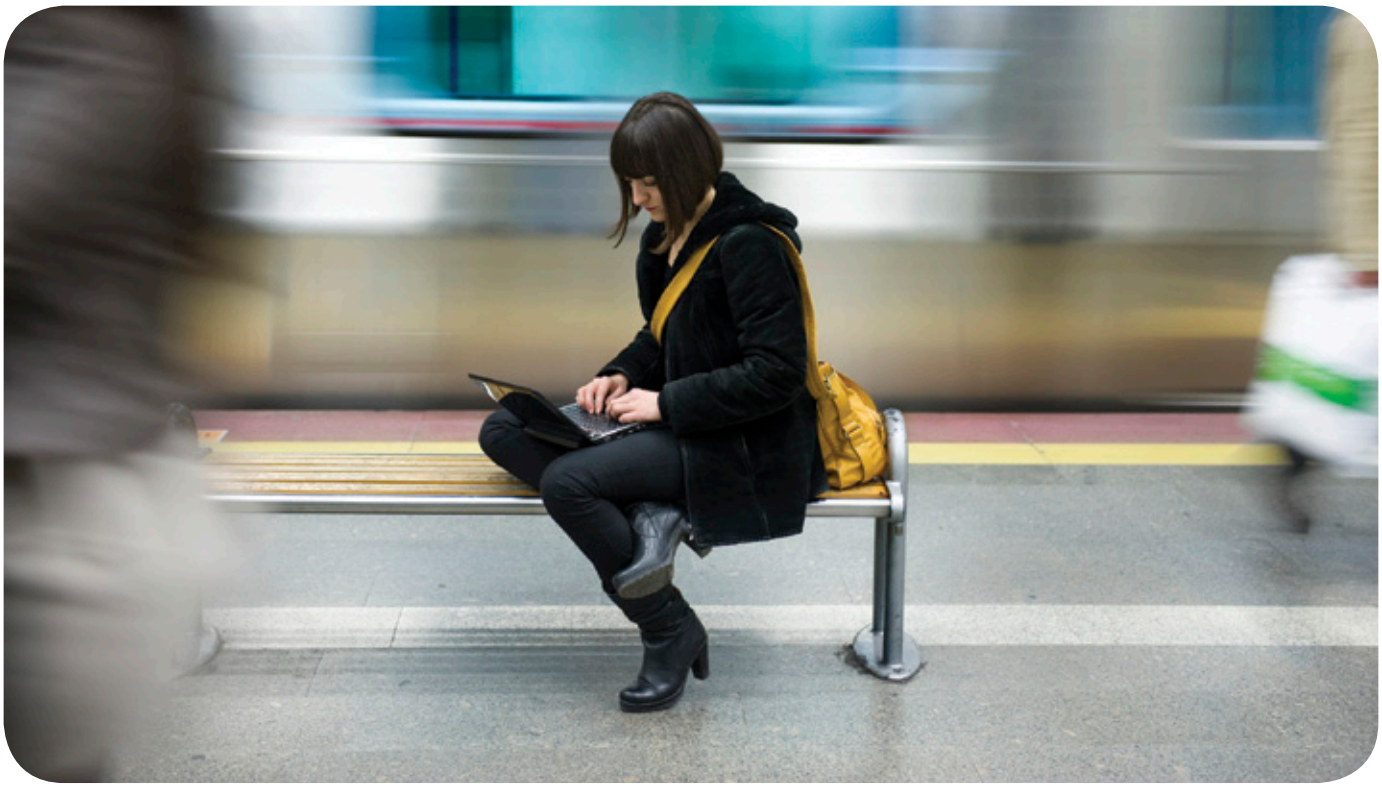


Source – TNS

CASE STUDY 9
Wireless internet access

RailCorp has established a public trial of free Wi-Fi at Circular Quay train station in Sydney, as a means of experimenting with public wireless in Sydney and learning more about the challenges of providing internet services on public transport.

Background	The free Wi-Fi trial was initially established in September 2010 for a period of two months. The initiative was part of RailCorp's promise of increasing the amenities available to customers travelling on the Sydney rail network. It was implemented as a free service in response to research that customers were not willing to pay for Wi-Fi on public transport. The goal of the project was to determine whether customers would use the service, test the reliability of the technology and investigate the possibilities for extending the service to additional locations in the future.
Implementation	According to Transport NSW, more than 10,000 customers used the free Wi-Fi network during the initial two-month trial, which was available while waiting for the train at Circular Quay station. The users generated 26,000 sessions and downloaded 55 gigabytes of data. Statistics indicate that the most prevalent users were 20-29 year-olds with smartphones, although up to 96 per cent of commuters surveyed said they would appreciate access to free Wi-Fi. Not surprisingly, the highest usage occurred during the PM peak travel time when the number of people waiting on platforms is at its peak. The major challenge in implementing the initiative was a small number of short outages over the initial two-month trial period. This was to be expected, however, as various hardware configurations were necessarily experimented with. RailCorp paid for and installed the technology themselves and advertised the service solely via posters at Circular Quay Station.
Impact on customer experience	As a result of the high levels of support for the service, RailCorp announced that the trial would be extended for a further three months. 40 per cent of customers surveyed on the platform at Circular Quay had tried the service and found it highly useful. The challenges for RailCorp lie in the technological and business aspects to implementing the service on a widespread basis. Implementation is generally more complicated on trains, as well as a lot more expensive. RailCorp is currently investigating a business model that would see a third-party provider install the network and be able to recover their costs through advertising. This business model and the future of Wi-Fi on Sydney's trains are to be discussed at future RailCorp steering committees.



The appeal and benefit of Wi-Fi access justifies its implementation from a customer service perspective. The survey findings indicate customers will generally tolerate advertising if it means their Wi-Fi access will be free of charge. The implication then from the operators' perspective is that the cost of Wi-Fi can be – at the very least partially – offset through advertising.

Similar to the provision of real-time information, investment in Wi-Fi must be aimed at establishing base level infrastructure that is open to innovative methods of delivery to the customer. For example, companies involved in providing street furniture as an advertising medium are now deploying Wi-Fi 'hotspots' in urban areas, including at bus stops. To encourage this kind of innovative delivery, governments and transport authorities must ensure rolling stock and fixed infrastructure, such as station platforms and bus stops, are hardwired to host a third party Wi-Fi provider.

5.3.3 Automatic Train Operation

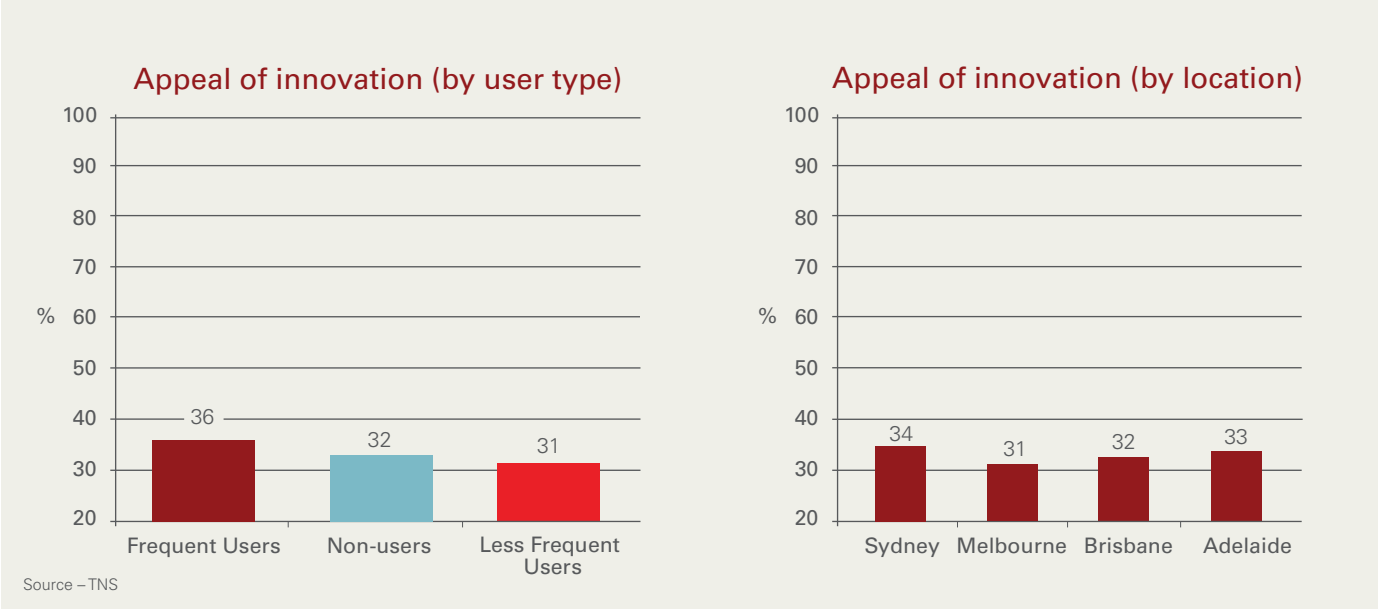
The survey also sought to obtain customers' views on a number of innovations that could be applied to public transport systems. One such innovation was driverless trains, which rely on various levels of Automatic Train Protection (ATP) and Automatic Train Operation (ATO). Driverless trains are an increasingly common feature of international rail systems. These systems have proven their success over many decades in a number of locations including London, Copenhagen and New York. Yet in Australia it appears that customers have an aversion to this concept.

This innovation had a low level of appeal to customers, with only 36 per cent in favour. This result was consistent across locations. In Chapter 3, customer knowledge of innovations in operational technology was identified as one of three key gaps between customers' perception of public transport services and the international experience of operating public transport services.

The figure below identifies the appeal of driverless trains across various customer groups.

Given the ability for driverless trains to address other key concerns expressed by customers, including improving service frequency, reliability and safety, the results highlight misconceptions from customers about the innovation. This may be driven predominantly by concerns that driverless trains are not safe. This concern may be compounded, to some extent, by the impact that negative media reporting of public transport system failures has on the confidence of customers that such systems can work. There is therefore a need for further customer education about how such systems operate and the benefits they can provide well before any attempt to implement this innovation.

Figure 14 - Appeal of driverless trains



Source – TNS

Image courtesy of Veolia Transdev

6.0 CONCLUDING REMARKS

6.0 CONCLUDING REMARKS

This report provides a range of highly positive news on the state of and future outlook for public transport in Australia's major cities.

The days of public goods and utilities being insulated from the competitive pressures driving innovation in other service industries are over, and the benefits of a strong customer focus are being realised in public transport. Users are increasingly being considered as customers, with legitimate needs and expectations. Politicians, policy makers and operators are realising that targeted investment and improvements to service delivery can increase a customer's propensity to use public transport and help to justify further investment in capacity.

The quiet revolution toward customer service-focussed delivery in public transport traced in this report comes at an opportune time. Dramatically increasing road traffic congestion and the need for more environmentally sustainable urban transport mean that Australia has to significantly increase the public transport mode share in the next few years.

The challenge for all governments to increase the public transport mode share means that it is time for political champions for the extension of public transport in our cities to re-focus media reporting to the many good news stories about public transport.

The fundamental aspects of quality public transport services, such as reliability, frequency and network coverage, are understandably also the foremost concerns of customers, and the primary barriers to increased usage. While it is understood that significant ongoing investment in fundamental infrastructure is needed to serve these basic customer expectations, this is no longer enough to satisfy the needs of public transport users. The expectation is not simply for more services, it is for better services, more information and higher levels of comfort and convenience.

Notwithstanding the imperative for investment in the fundamentals, the report identifies cost-effective means of improving the customer experience and transforming overall perceptions of public transport. It notes that the customer experience is not simply the train or bus ride – it incorporates the pre-journey through information and marketing, and the post journey through continual improvement and optimisation of services via customer feedback. The customer must be the primary concern of decision making in each phase. As shown in the nine case studies in this report, this transformation is already occurring in many of Australia's public transport operations.

The research has identified an aversion to the unknown as being at the heart of customer perceptions of public transport. This risk aversion relates to uncertainty and anxiety over service reliability, often driven by anecdotal or media reports drawing disproportionate attention to system failures, regardless of how infrequently they occur.

Empowering customers with a sense of certainty about their journey can help to overcome customer anxiety. Real-time information is critical to the elimination of uncertainty and is fast becoming a basic expectation of public transport customers around the world. Replacing timetables with frequency-based services is another way of providing certainty, giving customers the assurance of an average expected wait time at a bus stop or train station. Integrated smartcard ticketing is also now a fundamental aspect of modern public transport, simplifying fare payments and playing a significant role in eliminating customer inhibitions relating to fares and interchange journeys. Integrated smartcard ticketing also offers the potential to develop more efficient overall public transport networks.

The second key finding of the research is the relationship between the customer experience of public transport and the perceived level of control over their environment. This was evident in the prominence of overcrowding and the influence of other passengers' behaviour as major concerns among surveyed customers. By virtue of the 'public' aspect of public transport, these concerns may be inevitable, however, there is scope to reduce them through customer-focused initiatives.

Providing a designated 'quiet carriage' for rail commuters has proven a highly successful and cost effective method of giving customers a greater sense of control over their environment. The notion of a premium carriage with allocated seating and enhanced service features proved less popular in the research, however it was generally accepted that customers would be willing to pay more for a higher level of service. Providing complimentary Wi-Fi on public transport is a further method of enhancing the public transport experience, transforming the perception of commuting as wasted time. In this area, as well as smartcard ticketing and real-time information, transport operators face the challenge of keeping pace with rapid advancements in technology, and may be best served to invest strategically in base-level infrastructure that is open to innovative customer delivery methods.

Public transport in the twenty-first century is not simply about getting people from A to B. Providing more services is no longer enough to satisfy an increasingly discerning public – the standards of those services must also improve, with the concerns and needs of customers driving innovation and change. Enhancing the public transport customer experience is also vital for politicians and policy makers in gaining community support for an inevitable, fast-growing role for public transport in our major cities.

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