

BRISBANE'S BUSES: CURRENT RESEARCH

J Dudgeon
Department of Transport
Brisbane City Council
Brisbane
Queensland

ABSTRACT

Brisbane City Council's Department of Transport recently adopted as the first of six goals "Enhance our Customers' Satisfaction". The paper describes how this goal has influenced the research conducted over the last eighteen months in a number of important areas.

Home interview surveys have been used not only to explore issues but also to ascertain which courses of action within a constrained funding environment should be followed to maximise community satisfaction.

A project to ascertain which information should be displayed at bus stops to aid passengers, and whether this information can be cost effectively updated is also reported.

The outcome of in depth research regarding the cost effectiveness of air-conditioning buses in Brisbane, and the action taken as a result, are stated.

The survey results of significantly improved weeknight and weekend bus services, introduced to serve Expo 88 and kept on a three month trial are given.

These four projects are explicitly linked by a market based orientation.

All these projects are greatly influencing people's satisfaction with Brisbane's buses.

BRISBANE'S BUSES: CURRENT RESEARCH

At a workshop at the Gold Coast in November, 1988, Brisbane City Council's Department of Transport adopted as its first of six goals:

"Enhance our Customer Orientation"

To provide guidance, three descriptive statements were added:

- . Simplify what the customer needs to know
- . Stronger marketing identity
- . Provide services which are highly attractive to passengers.

This paper describes some current and recently completed research projects. Its aim is to address how research and action has been guided by an implicit and explicit desire to enhance our customer orientation.

ATTITUDE AND OPINION SURVEYS

Brisbane City Council has conducted a series of citizen surveys at fairly regular intervals since 1980. The sixth is about to be conducted at the time of writing.

As well as providing customer (passenger and non-passenger) feedback for the Council's bus and ferry services, the surveys reveal preferences for the range of other Council services; its water supply, sewerage, traffic and development activities along with the more traditional Council roles. Only the bus results are discussed in this paper.

These surveys have traditionally been home interviews at 1,000 dwellings randomly selected. Although the issues and question types have been generated internally within Council, the final wording, conduct, analysis and interpretation has been by private enterprise. The last survey citywide was by Marketshare and Strategies (1987).

As the task of managing Council's 570 bus fleet within a changing operating environment has become more complex, the information sought from consumers has become more performance based. Initial surveys concentrated on rating various aspects of the bus system to clarify which issues customers regarded as important. Lately the surveys have been used to explore customer's preferences for actions that may be contemplated.

DUDGEON

Three major issues were considered in developing the November, 1987 Attitude and Opinion Survey regarding Council's buses.

1. The views of customers about bus drivers and their performance.
2. Customer's preferences towards activities or projects that may be considered if Council expenditure increased or was reduced.
3. The desirability of, cost effectiveness of and passengers' willingness to pay for air conditioning on urban buses.

The survey results have been instrumental in initiating, supporting or changing policies, programs, budgets and further research.

Driver Rating by Customers

A rating question within the survey has been kept constant for a number of surveys. The results over time indicate that the public perceives that drivers have stabilised their performance.

With a rating range from 1 (very favourable) to 5 (very unfavourable) drivers rated 2.31 in 1986, and 2.37 in 1987. This is in spite of changing driver selection procedures and management endeavouring to communicate more caringly with drivers.

In seeking further information about the perceived good points of drivers, 60 percent of bus passengers mentioned that drivers were helpful and courteous. Paradoxically 19 percent find drivers are not helpful or are unfriendly, with another 19 percent stating drivers are not considerate to passengers. Also of concern was that 24 percent mentioned drivers driving too fast and jerky.

I would suppose that many metropolitan bus operators would be familiar with these sorts of results. Ascertaining cost effective actions to improve the situation is a difficult task.

Brisbane's bus drivers currently rotate through all work in their Depot. This has the major advantages that over time, all drivers receive the same work and therefore the same pay opportunities. Secondly, all drivers are operating regularly over all the different routes operated by their Depot so that in emergencies they can easily switch work. The disadvantages are that not all drivers like the same shifts. Some like early morning, night or even broken shift

BRISBANE'S BUSES: CURRENT RESEARCH

work. A second disadvantage is that there is no way to reward good, long serving drivers with either the choice of work to maximise their lifestyles or financial reward. However the major disadvantage of a rotating roster (as seen by a market based planner) is that there is little incentive for passengers to fulfill the role of driver monitoring as they are unlikely to have the same driver on two consecutive days.

My own view is that passengers are those with most experience in deciding whether the driver is driving too fast, too jerky or is rude and unhelpful. If they knew that they were likely to have a bad driver regularly, the incentive for them to let management know would be far higher. This would also provide management with the incentive to improve their role in this area. Non performing drivers could be counselled and/or disciplined so that their standard of customer relations improved.

On the positive side it would seem that forming a relationship, albeit somewhat superficial, with their passengers would be a strong incentive for drivers to improve their skills.

Serious consideration is being given to adopting a form of regular rostering, if some of the above disadvantages can be overcome.

Customer Preferences

Two questions in 1987 were directed towards eliciting passengers' preferences regarding activities that could be undertaken. One question sought how extra funding made available could be expended and the other sought how savings could be made in a reduced funding environment. As with all enterprises, resources available are always less than are needed to complete the tasks that could be undertaken.

With this in mind a basic precept of the question was to ensure that the choices made available would consume about the same level of resources. An amount of \$2 million was chosen as being a reasonable level of variable funding within the Department's annual allocation. The possible choices respondents were given for each funding environment are given in Table One.

The basis of funding meant that passengers did not simply choose between "More weeknight bus services" (whatever that means) and "More shelter sheds" (Does that mean one at my bus stop?) but they chose either 800 bus shelters or 20 weeknight routes of an hourly frequency. (Not perfect but much better).

DUDGEON

TABLE ONE

ACTIVITY CHOICES FOR EXTRA OR REDUCED FUNDING ENVIRONMENT

EXTRA FUNDING	PERCENT ¹ SUPPORTING	REDUCED FUNDING	PERCENT ¹ SUPPORTING
800 new bus shelters	31	No new bus shelters	59
Lower all bus fares by an average of 8 cents	37	Increase all bus fares by an average of 8 cents	32
Buy ten new buses to replace the buses over 19 years old	44	Continue to operate buses over 19 years old	48
Aircondition 40 buses	30	Provide fewer school services	5
Provide 4 new Cityxpress routes	24	Eliminate entirely poorly patronised routes	44
Provide hourly evening services on 20 routes	32	Provide fewer evening services on some routes	39
Provide hourly weekend on 20 routes	31	Provide fewer weekend services on some routes	33
Provide accurate timetable information at every bus stop and distribute timetables to every house in Brisbane	40		
Provide a more efficient ticketing system	12		

NOTE

1. This is the percentage of respondents who mentioned the particular category.

BRISBANE'S BUSES: CURRENT RESEARCH

Respondents were asked to pick which of the choices they would like, first, second and third mentions. The total percent supporting each choice is given in Table One and shown in Figure One.

The outcomes of the results have been significant. The current Council Administration, following earlier work, had committed itself to installing 800 new shelter sheds during its first three year term. This is equivalent to putting new sheds at about another 20 percent of Council stops (discounting the limited demand at many outbound bus stops where there is not a major suburban attraction on the route). This program had been virtually completed before the survey, and the reduction in consumer demand for shelters translated into a significant reduction in the budgeted number of new shelter sheds, down to 50 in 1988/89.

The demand for more weeknight and weekend bus services has been addressed in the manner described later, as is the ambivalent attitude towards air conditioning.

The very strong demand for more information in their homes and at bus stops - which was the highest of the first mentions - was a surprise.

CUSTOMER INFORMATION AT BUS STOPS

The information provided to customers has long been a source of concern.

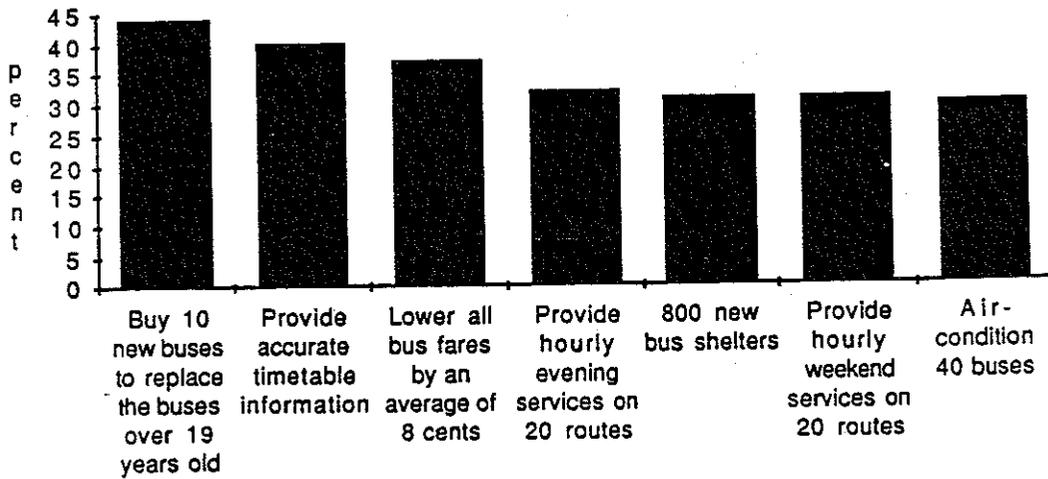
Within the last decade, there have been proponents within Council of not providing expected City arriving times on public timetables, as they thought this would only lead to complaints if buses were not able to meet them in emergent situations. Such an approach, while seemingly logical from the viewpoint of a manager anxious to preserve scarce resources for more valuable tasks than responding to complaints, does not exemplify a customer oriented attitude. Interestingly, regular customers have a keen sense of when a bus is running late from their normal observations, whether or not they are advised in writing.

Happily the provision of expected City arrival times is now normal and even "will not pass before times" is now a part of the normal information supply for at least a quarter of all our passengers. The latter is when passengers are advised a time at their particular bus stop before which, it is confidently expected, the bus will not be able to arrive at that stop.

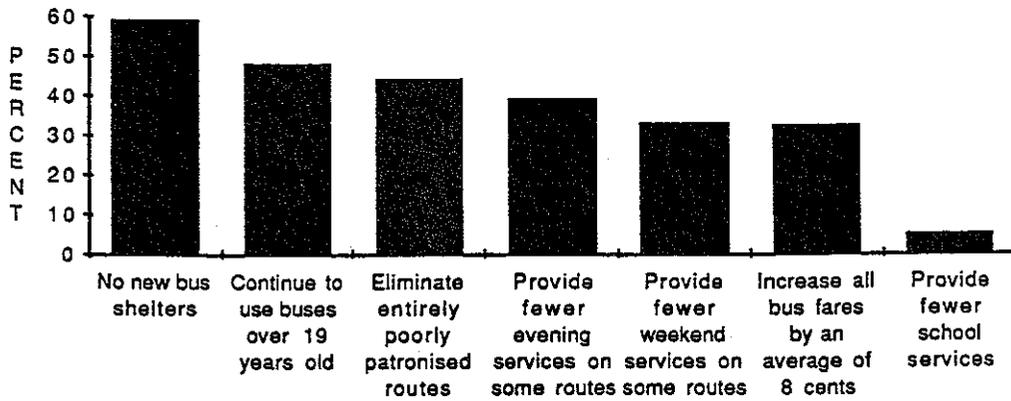
FIGURE ONE

RESULTS OF PASSENGERS' PREFERENCES FOR EXPANDING/REDUCING FUNDING

EXPANDING FUNDING



REDUCING FUNDING



BRISBANE'S BUSES: CURRENT RESEARCH

In the Central City, colour coded lexan stops display route, map and basic schedule information.

It was therefore with a degree of equanimity, if not pride, that the improved provision of information to customers was regarded.

From an overseas trip in 1986 by the Manager, Dr K Davidson, work by a vacation student, John Kennedy, and undergraduate work at the University of Queensland supervised by Dr R L Pretty (Hunter & Maggiolo, 1987), Council has been well aware of the need for better information at bus stops, especially in the suburbs.

However, the fact that customer's preferred better information both in their homes and at bus stops rather than almost any other alternative activity that Council could undertake was a surprise.

This result was instrumental in deciding to commission further work. Because of Dr Pretty's previous involvement with undergraduate students, he was chosen to project manage a University research team in a three stage research project to identify and assess information requirements, design a presentation system, and pilot test and evaluate the recommended bus stop information.

Brisbane's Existing Suburban Bus Stops

Brisbane has three types of bus stop displays for the majority of its Citybus (all stops bus) system.

- A pole mounted blue metallic round disc containing the bus stop number (useful to the operator but of little benefit to passengers) and the words "Bus Stop". These were designed in the late 1960's and were originally colour coded with the buses which at that time were predominantly navy blue.

However the stops are now faded and are also susceptible to being bent. Brisbane's buses were restyled in mainly white or yellow livery early this decade. For these reasons the blue discs are being progressively replaced with:

- A pole mounted rectangular plate, containing the bus stop number, a bus symbol and the words "Bus Stop". The plate has reflectorised paint, is the same size as traffic signs and is now made of plastic which is very vandal resistant. The new sign is more visible, contains slightly more information and is less susceptible to vandalism than the old blue disc.

DUDGEON

Both the blue disc and yellow plates are mounted desirably 2.23 metres above ground. This minimises vandalism but makes reading by the young and elderly, both typical bus user types, difficult. However as the information displayed is minimal this is not of great concern.

A third type of bus stop display is a 1.4 metre post, 7.5 cm by 7.5 cm painted yellow with black striping. On some stops the words "District Stop" inform potential customers that only school buses before and/or after school use the stop.

Each of these stop signs costs about \$150 to install at the about 7000 Council bus stops. So the suburban bus stop system in Brisbane conveys minimal passenger information beyond the bus stop location but has a replacement value of about \$1 million.

Objectives of a Bus Stop Sign

The main purpose of any bus stop sign is to be noticed by both the bus driver and intending passenger as it describes a bus stop. The new yellow plate in particular fulfills this function.

The general objectives of a bus stop sign could be

- (i) to identify a location as a bus stop (primary objective)
- (ii) to communicate potential destinations able to be reached from the location
- (iii) to identify buses which can be boarded at the location (not all buses may stop at the location)
- (iv) to communicate appropriate schedule/timetable information
- (v) to convey information (how to hail a bus and perhaps fare information) that would help the passenger to use the bus service.
- (vi) to have the information presented at the bus stop in the corporate style so that it is integrated with and reinforces other information, and complements the image of the bus system.

BRISBANE'S BUSES: CURRENT RESEARCH

Perhaps the answer to what information to supply at bus stops can be found by asking questions such as:

- . What information is required?
- . How should it be presented?
- . How can it be cost effectively updated?
- . What presentation system should be used to protect the information from the weather, vandalism, etc?

A literature survey was conducted. There is a relative scarcity of work in this field. However it seems that worldwide the issue is the cost effective presentation and updating of the information the customer requires.

To determine what information is desired in Brisbane, how to present it, and how well it is understood, a field survey was conducted with groups of potential riders. These included university students, adults, secondary students, overseas students, shoppers and the elderly. A hypothetical scenario was used which tested the respondents for their correctness in interpreting given transit information which was not from their own suburb. They were assumed to be at point A and asked questions about an assumed trip to point B with different subjects being given different data sets.

The explicit objectives of the survey were to determine what sort of map design and timetable information led to simplicity of usage and correct extraction of information. The survey comprised a set of 12 questions and 8 combinations of maps and timetables. It was administered to 244 subjects.

The results of the survey are quoted from the draft interim report.

"The results showed that transit users would have more confidence in using their transit system (which further implied that patronage on the bus system would improve) if on-street information (in particular map and timetable) were available on their local bus stop signs. The results also revealed that the present level of transit knowledge of Brisbane citizens is not as high as one would like. This was indicated by transit users making wrong assumptions. In particular the timetable available on their local sign should be of the format that estimates the time their local bus passes that stop and not the time the bus leaves the terminal."

DUDGEON

The survey results indicated that most potential users would be able to understand and extract the correct information if it were available at their bus stop. At this stage it is intended to keep the new yellow plate type bus stop sign and add a pole mounted display case featuring timetable and map information by route.

Whether increased usage would be sufficient to make this a cost effective exercise will be determined as part of the forthcoming pilot stage in the field. If passing times are given at the bus stop, this information will be far more comprehensive and accurate than can be contained in any public timetable for a route which may have 80 or more bus stops. Secondly, this information may help to relieve passenger's anxiety while waiting at stops (Warman et al 1985) which would be very beneficial. The effects of these changes is awaited with interest.

AIRCONDITIONING BUSES - IS IT COST EFFECTIVE?

In the mid 80's, Brisbane embarked on a trial of airconditioning some buses in response to public pressure and to assess the capital and recurrent costs of airconditioning. Pressure steadily mounted to aircondition buses as a greater proportion of the new private vehicle fleet became airconditioned. Because of the \$12 million capital cost of airconditioning the whole fleet as well as recurrent costs of about \$2.5 million annually, an internal study was conducted to evaluate its cost effectiveness. Russell (1989) has presented a paper on this study. This part of the paper will summary the study and make final recommendations.

Background to Airconditioning in Brisbane

Brisbane is a subtropical city. For almost half the year the maximum daily temperature exceeds 26 degrees, and on 41 days in 1987 it exceeded 30 degrees.

For decades Brisbane buses have had roof hatches and openable windows. Since the Volvo B59 buses were introduced in 1976, all Brisbane buses have had a forced air ventilation system with individually controlled outlets for passengers.

However The Met has announced it will aircondition all new buses to bring them into line with the rest of their train and tram fleet which is airconditioned. Canberra will be airconditioning all driver's cabins and Sydney had a similar bus on trial. Both Adelaide and Perth use evaporative airconditioning systems but this is not suitable in Brisbane's more humid climate.

BRISBANE'S BUSES: CURRENT RESEARCH

Why Aircondition?

Before unilaterally deciding to aircondition the fleet the issue had to be evaluated and proved to be more beneficial than other works requiring scarce funds. Questions such as the following needed to be answered.

- (i) Is there a major comfort problem, with Brisbane buses being perceived as hot and stuffy?
- (ii) How is comfort perceived on the buses with different ventilation systems?
- (iii) Is ventilation comfort perceived as being important compared with other attributes of the bus system?
- (iv) Are passengers prepared to pay more for airconditioning?
- (v) Will airconditioning attract more passengers or trips?
- (vi) Is trip length a factor in valuing airconditioning?
- (vii) Are there more cost effective ways of attracting passengers or improving productivity?

Surveys

Four surveys were used to provide sufficient data to answer these questions.

The 1987 Attitude & Opinion Survey asked both aided and unaided questions that placed airconditioning in a trade off situation with other service attributes and also questioned willingness to pay.

The second survey type was on bus in late November/early December 1987 with nearly 600 passengers who were using different bus types.

The third was a survey of alighting passengers where passengers were asked what they thought of the airconditioning on the bus irrespective of whether it was or wasn't.

The fourth was a survey of passengers' responses to a field trial using airconditioned buses, in one case where the airconditioned bus trial had been advertised and one where it had not.

DUDGEON

Survey Results

Analysis of the surveys yielded answers to the issue questions. These are given in the same order.

- (i) Comfort of buses is not perceived as being a major disadvantage.
- (ii) There is a variation in the response in (i) by bus type. The twenty year old Panther buses are perceived as being hot and uncomfortable and passengers who used them wanted airconditioning much more than those passengers who used more modern buses.

Passengers on buses with forced air ventilation did not have a high desire for airconditioning. Indeed a reasonable proportion of the passengers thought the bus was airconditioned. The majority of passengers on these buses thought the comfort was at least adequate.

Passengers on buses that were airconditioned desired more strongly all buses to be airconditioned than passengers who used forced air ventilated buses. Clearly they liked what they had experienced.

- (iii) Ventilation comfort did not rate highly compared with other service attributes such as frequency, route coverage, etc. Bus comfort already rated highly compared with other aspects of the bus service.

Driver's control of acceleration and deceleration was as important a comfort feature as was ventilation. Women tended to be more concerned about smoother acceleration and deceleration and having seats facing forward, while men were concerned about seat comfort, noise levels and ventilation.

- (iv) Just over half of all passengers are not prepared to pay higher fares to obtain airconditioned buses. The difference between stated and real preference was viewed with caution to arrive at the conclusion that passengers are not prepared to pay more for airconditioned buses.

Brisbane does not have a ticket system that can differentiate between airconditioned and non airconditioned buses so even had passengers been prepared to pay more, this could not have been realised easily through the fare box.

- (v) Surveys in the field with advertised and non advertised airconditioned buses showed no statistically discernable change in patronage by using airconditioned buses.

BRISBANE'S BUSES: CURRENT RESEARCH

In one case, all households in an area had been letterbox dropped with new timetables and a brochure indicating that every second bus on their route would be airconditioned. In midsummer, 14 days of before and 24 days of after data were checked. The services had 148.9 and 99 passengers before and 158.9 and 99 after. Neither the change between bus types or the growth in patronage was statistically significant.

This is not to indicate that airconditioning was not valued, simply that it was not of sufficient value that passengers altered their travel times by a half hour to use it in this particular situation.

- (vi) Surprisingly trip length was not a factor. I had thought that those travelling longer trips may think airconditioning more important. Presumably if comfort levels on buses are perceived as being reasonable, this holds for long or short distance trips.
- (vii) Airconditioning is seen as a relative low priority in spending ratepayer's funds. More weekend and weeknight bus services, more frequent services, replacing old buses and providing better timetable information was perceived of more value.

Outcomes

One of the pleasing aspects of the study was it changed the policy outlook and resulted in some positive outcomes.

- (i) Council adopted a new policy of not generally airconditioning buses in Brisbane.
- (ii) The forced air ventilation system in buses will be changed so that it is automatically switched on when the bus is started rather than waiting for a passenger to ask the driver.
- (iii) New notices will be installed on the hydraulic roof hatches that the driver controls notifying passengers that if they want them open they should ask the driver. The previous notice just stated they were under driver control.
- (iv) The issue of airconditioning on buses in Brisbane is not regarded as settled. Passenger's perceptions change over time and the issue will be explored again in the future.

DUDGEON

WEEKNIGHT AND WEEKEND BUS SERVICES

Background

Previous Attitude & Opinion Surveys have shown that weekend and weeknight service availability rates poorly when compared with many other service attributes. These results were reinforced in the 1987 survey when Saturday morning, other weekend and weeknight services rated the poorest in that order of twelve aspects examined. In the section that requested views on expending extra funds, provision of extra services at these times rated about average, but ahead of airconditioning. However 40 percent of respondents indicated they would be prepared to pay double their present fare if it meant they could have more weekend and weeknight services and 56 percent stated they would be prepared to pay 50 percent more to achieve the same result.

With these results Expo 88 was a great opportunity.

Besides being the focus of Bicentennial activities for much of 1988, Expo brought great opportunities for change in Brisbane. Its seven days a week, fourteen hours a day operation created:

- a demand for seven days a week retail, bank and hotel trading in the CBD
- an unprecedented demand for travel on weeknights and weekends.

Council responded by offering new half hourly weeknight and weekend services on all its Cityxpress routes until after 11.00 pm with another bus after midnight. All these services terminated in or near the Queen Street Bus Station (Dudgeon, 1988) under Brisbane's retail heart.

It was originally hoped to evaluate the success of the new routes by conducting surveys and taking into account the Expo patronage. However the phenomenal success of Expo where patronage was more than double predictions, meant that people's travel demands were fundamentally altered. Using non-Expo based travel to indicate passenger demand would have underestimated the real demand for weekend and weeknight bus travel.

1. The Cityxpress concept is a limited suburban stops, half hourly clockface, express bus service between the suburbs and one CBD stop, using premium buses in distinctive livery, with integrated, informative, and named bus stops.

BRISBANE'S BUSES: CURRENT RESEARCH

In a courageous decision Council decided to continue the trial of weeknight and weekend Cityxpress bus services for a further three months to allow a proper evaluation of the demand to be made. The cost of this was about \$1.4 million. A weekend Family travel offer, where four children could travel free on weekends with a person having an adult ticket, was also reintroduced.

At the same time, all day Saturday trading was made permanent by the State Government, and Sunday trading between 10.00am and 4.00pm in the Central City was given a further trial until June 30, 1989.

To determine the viability of the new services, on board passenger surveys and extensive passenger counts were undertaken.

Results

Table Two presents the patronage results by time of day and day of week, and cost recoveries by day of week.

There were different levels of usage and types of trips being made by day of week and time of day. Weekday trips are more likely to be made by shift workers and students, Friday and Saturday evening trips are associated with recreation, while weekend daytime trips are made by families, the elderly and teenagers. So even though Friday evening passengers are 3.2 times as many as weeknight passengers who, in turn travel slightly more than Saturday evening passengers, different decisions were made about the need for services. The cost associated with penalty work on certain days was also a factor.

What was extremely interesting and encouraging was the relatively high level of patronage on Sunday daytime compared with Saturdays even though the latter have been operating for decades.

The Outcome

Before deciding on the outcome, a decision was made that the overall service product was important. In order to market the outcome to existing and potential customers all routes should follow the same service guidelines, irrespective of how the particular route was performing.

BRISBANE'S BUSES: CURRENT RESEARCH

TABLE IWO
WEEKNIGHT AND WEEKEND CITYXPRESS RESULTS

PERIOD	PATRONAGE ¹	AVE LOAD ²	COST RECOVERY ³
Monday to Thursday (6.00 - 9.00pm)	1487	8.9	
Monday to Thursday (9.00 - 12.30pm)	<u>491</u>	2.9	
	1978	5.9	0.21
Fridays (6.00 - 9.00pm)	3857	23.0	
Fridays (9.00 - 12.30pm)	<u>2461</u>	14.6	
	6318	18.8	0.68
Saturdays (day)	5389	10.7	
Saturdays (night)	<u>1798</u>	5.4	
	7187	9.3	0.36
Sundays (day)	3678	7.3	
Sundays (night)	<u>685</u>	2.0	
	4363	6.2	0.21

Notes

1. Inbound and outbound patronage for the period for all fourteen routes.
2. This is the average loading per bus for all buses, inbound and outbound on all routes. Clearly it varied by route, time and direction.
3. Includes driver, driver associated and maintenance costs but not bus costs and only farebox revenue.

DUDGEON

After considering the results in detail, Council decided to curtail services. On Monday to Thursday nights the Cityxpress routes now operate hourly until the first bus after 11.00pm. On Sunday evenings services were abandoned.

This decision saved Council \$1.075 million annually. 685 passenger trips each Sunday lost their bus service and 473 on weeknights had to choose between hourly, not half hourly bus services. The cost recovery of weeknight services increased to 0.29 and Sunday services to 0.27. These are greater than the average cost recoveries of some Australian metropolitan bus services. Deficits per passenger decreased by about \$1.30 in each instance.

Characteristics of Weeknight & Weekend Bus Services

Overall 43 percent of passengers previously caught a bus. This tended to be concentrated on weekdays when there may have been a Citybus to their destinations, or perhaps they are now travelling home later. However 24 percent of passengers were previous car users and these were more concentrated on weekends.

Those with a car available for their trip formed 38 percent of the total. There was a high correlation between those who did not have a car available and those who had previously used a bus for their trip.

The demographic profile of passengers is similar to the whole system, 57 percent female and 43 percent male. More men travel on weeknights, while women travel more on weekends. Young adults favour Friday nights while teenagers form a higher proportion on weekends.

All aspects of the service were rated favourably by the passengers. Frequency and route coverage rated higher than the range of operating hours.

Half the passengers would use the bus service if it was made hourly, with another quarter being unsure.

Nearly two thirds stated preparedness to pay higher fares to keep the service operating. They were prepared to pay 23 cents extra on average. (The average fare on these services is about \$1.00).

BRISBANE'S BUSES: CURRENT RESEARCH

Conclusion

The provision of weeknight and weekend services is regarded as extremely successful. Largely because of the impetus associated with Expo 88, Brisbane now has far better bus services on weeknights and weekends than it had previously. These are already well used and are probably still in a moderate growth phase. On average they are already returning 75 percent of the system average cost recovery.

While it is fashionable to denigrate the real impact of Expo, there is no doubt that without it, Brisbane would not enjoy better weeknight and weekend bus services.

CONCLUSION - A MARKET BASED APPROACH

The major part of this paper has attempted to show how a market based approach with a goal of "Enhancing Our Customer Orientation" has helped to produce research based, positive actions. It would be facile to claim that the goal or the research was responsible for the positive outcomes. Nevertheless it provides a significant basis for proactive decisions.

The paper has shown that strategic research forms a good basis for program and budgetary decision making. It of course generates further micro level research into specific policy measures, actions and route changes.

The wonder is that so many decisions are made without the firm basis of a goal centered approach and without the backing of reasonable research. Many of these decisions are good - there is no doubt that experienced operators mostly get them on the right side of the ledger - but are they the optimal decision?

What is far less clear is whether another decision would have been even more valuable given that most organisations operate in a financially constrained environment. Unless organisations are continually making these decisions on the basis of their customer preferences, what is their basis?

After all, the public is paying about \$350 million annually (Dudgeon, 1987) in extra taxes to fund metropolitan bus deficits, and probably two to four times as much for metropolitan rail deficits. Unless people are being served it is difficult to understand why they would not settle for reduced public transport and lower taxes.

Future Research

The research in Brisbane indicates that major advances can be made in three areas:

- (i) Better customer relations. While this occurs primarily at the customer/driver interface there are many other staff who have a role to play.

It is my personal opinion that patronage gains of up to 25 percent are possible with improvements in this area. There is no other area of activity that could produce these results.

Bus operators need to train all their staff to ensure a Myers/MacDonalds attitude where the customer is made to feel important. Whether programs, training, reward and control systems or a positive management attitude produces more cost effective results needs far more research.

- (ii) More reliable bus services. Passengers indicate that this, along with frequency and speed are major determinants in choosing bus travel. Providing greater frequency is resource intensive and therefore expensive. Speed is difficult in congested situations. Greater reliability can cost resources but is the most amenable of the three to cost effective action. More research is needed regarding the trade offs between these.

- (iii) Better customer information. Brisbane is seeking to have this at bus stops so that this reinforces existing passengers' timetables, or becomes the first point of contact with potentially new customers.

However one of our Engineers is keen on customer oriented computer consoles to distribute information. Yet another suggested we tie in with a Videotext system. In the next few years both of these are likely.

All three areas require more research to determine their cost effectiveness. However the greatest need is just better goal directed management based on good market research. This would ensure proactive, cost effective and optimal use of funds and resources to satisfy the most customers at the least cost.

ACKNOWLEDGEMENTS

Many people were involved in the research which is reported in this paper. I would like to acknowledge the efforts of:

Mr David Russell	Mr Gwyn Thomas
Dr R L (Bob) Pretty	Ms Helen Skippen
Mr Yin	Mr Mike Gardiner
Dr Victor Callan	Mr John Lyons
Ms Lisa Sargeant	Mr Lester Robinson

the Checking Staff of the Department.

BIBLIOGRAPHY

Marketshare & Strategies (1987) An Attitude & Opinion Survey of Brisbane Residents, prepared for the Brisbane City Council.

Hunter & Maggiolo (1987) B E thesis, Department of Civil Engineering, University of Queensland.

Russell, D (1989) Gawd it's Hot, I Wish this Bus was Airconditioned!, National Transport Conference Transport for the Users, of the Institution of Engineers & Chartered Institute of Transport, Melbourne.

Dudgeon, J (1988) Just Another Government Bus Service? Volume 1, 13th Australasian Transport Research Forum, Christchurch, New Zealand.

Dudgeon, J (1987) Issues in Computer Aided Scheduling - an Operator's Perspective, Volume 2, 12th Australian Transport Research Forum, Brisbane.

DAILY VARIABILITY IN PUBLIC TRANSPORT
PATRONAGE

B Crouch
Manager
Market Assessment Department
State Transport Authority
Adelaide
South Australia

ABSTRACT

The extent to which public transport services can be matched throughout the day to the level of demand depends on both the degree of accuracy with which the amount of patronage expected in any given time period is known and also the degree to which patronage in any given time period varies from week to week.

This paper analyses the extent to which patronage on buses operated by the State Transport Authority, Adelaide, South Australia, varied from day to day and within particular time periods during the day, over the three month period August to October 1988. It was found that there were definite patterns of usage which are repeated from week to week.

The cost to the State Transport Authority of providing excess capacity to cater for variability in daily patronage was estimated and found to be of the order of \$2 million per annum. The closer the service delivery can be made to match the expected daily patronage, the more this cost can be reduced.

Daily variability can be expected to increase in the future due to changes in work patterns. The need for flexibility in provision of services in order to match the variations in patronage may therefore further increase as potential savings become even greater.