IMPROVING EFFICIENCY: AN EVALUATION OF SYDNEY BUSES "BONDI BENDY" PREPAY SERVICE

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ABSTRACT

This paper evaluates Sydney Buses route 333 "Bondi Bendy" prepay only service, launched in October 2006. This new bus service, operating between Bondi Beach and Sydney's CBD, was introduced to provide greater capacity along one of Sydney's busiest corridors. The first few months of operation have proved to be a success, attracting increased patronage and positive responses from customers. The performance of the service has been assessed using the triple bottom line framework: people, profit and planet. Benefits to customers include faster boarding times, travel times and savings on fares, while bus operators experience safety improvements. The service, using new articulated buses, has significantly increased patronage on the corridor, which maximises business efficiency. The impact on the environment is minimised by the increased capacity articulated buses, providing opportunities for reduced congestion and pollution. Current key challenges involve refining the stopping pattern, improving communication and increasing off peak patronage. Addressing these issues requires further analysis of the existing route and the continued implementation and revision of the communications plan. The initial success of the 333 has created opportunities for additional prepay only bus services in Sydney and encourages future innovation in the public transport industry.

INTRODUCTION

The State Transit Authority of New South Wales (STA) is the government authority which operates Sydney Buses and Newcastle Buses and Ferries. This paper focuses on one of the Sydney Buses services: the route 333 "Bondi Bendy".

The 333 bus service, launched on 8th October 2006, has set a precedent for STA. It is the first Sydney Buses prepay only service. Passengers are required to purchase a ticket prior to boarding the bus. In addition, only articulated (bendy) buses are utilised for the service.

**Figure: Route 333 "Bondi Bendy" Bus at Bondi Beach**

This paper will firstly detail the background of the Bondi corridor, the area in which the 333 operates. The prepay concept and the service planning process will be outlined. Results are analysed using the triple bottom line framework, examining the impacts of the service on people, profits and the planet. Finally, the challenges for the service will be explored, leading to key lessons learnt and their application for subsequent prepay routes.

BACKGROUND AND CONTEXT

Route 333 travels to and from Bondi Beach, which is arguably Australia's most famous beach. Located approximately seven kilometres from Sydney's CBD, this iconic Sydney landmark is popular for both locals and tourists. The bus is the only public transport option that carries passengers from the city directly to the beach, taking approximately 35 minutes (State Transit Authority of New South Wales, 2006a). The alternative is to catch a train from the CBD to Bondi Junction, which is three kilometres from the beach. Waverley bus depot operates all the route 333 trips and is located a short distance from Bondi Junction.

Bondi Corridor

Bondi Road is one of the busiest corridors for Sydney Buses, providing bus services for a variety of customers with different travel needs. They include commuters travelling to and from work, tourists going to Bondi Beach and people visiting Bondi Junction Westfield Shopping Centre. In 2006, the yearly patronage along the corridor was 8.9 million (State Transit Authority of New South Wales, 2007a). Routes 333, 380, 381, 382 and X84 travel along the corridor as outlined in the map below.
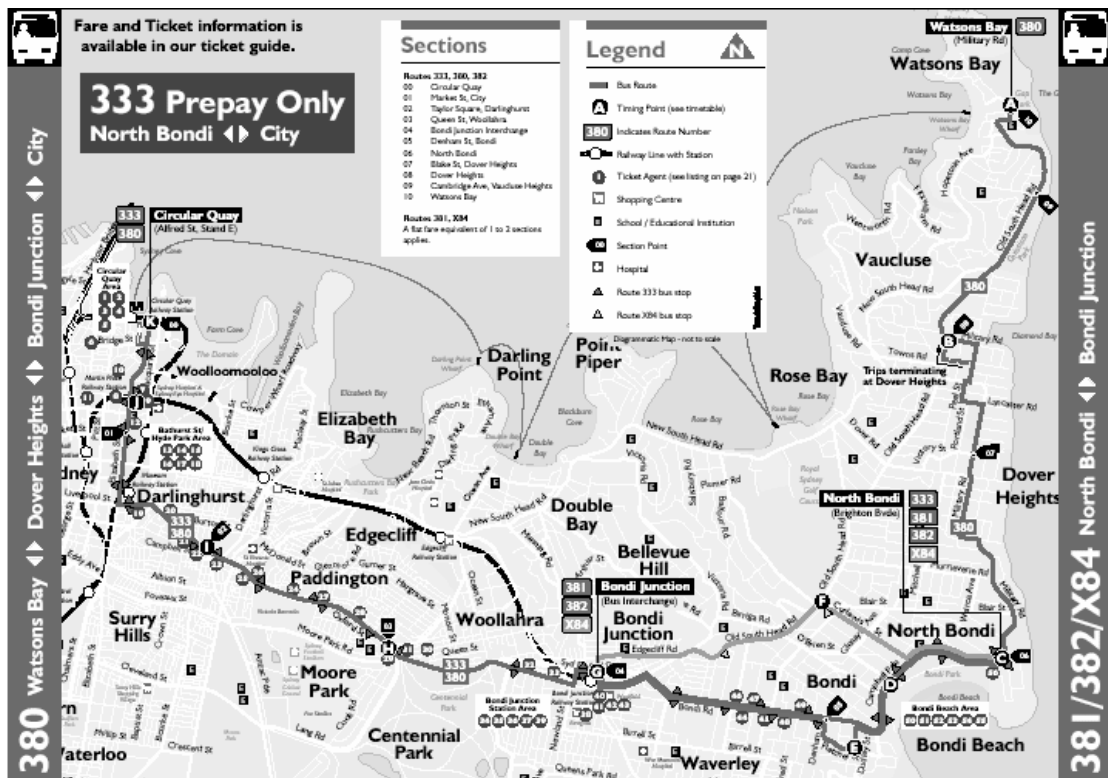
Figure: Map of the Bondi Corridor

(State Transit Authority of New South Wales, 2007b)

The 333 service was introduced to replace route L82 and to complement one of the busiest bus routes in the southern hemisphere, route 380. The 380 is a full time service, operating 24 hours a day, seven days a week. The 380 route travels between North Bondi and Circular Quay, via Bondi Beach, Bondi Junction, Paddington, Darlinghurst and Sydney CBD. Route 333 follows the same route as the 380, however the 333 is a limited stops service.

There are three other services that cover part of the route, travelling between North Bondi, Bondi Beach and Bondi Junction. The 381 and 382 are full time services and the X84 is a weekday morning express service.

Factors Leading to Establishment of the 333

There were several reasons for the establishment of the 333 service. Sydney Buses acquired 80 new articulated buses and was required to allocate these vehicles to specific depots or bus routes. Due to the increased passenger capacity, a decision was made to use the articulated buses on a busy route, enabling boardings to be maximised. A drawback of increased passenger capacity is that loading the bus takes longer which impacts on total travel time and causes vehicle congestion at bus stops. Loading times were more of an issue along the Bondi corridor, due to the especially high turnover of passengers during each trip. To minimise the time spent at bus stops, the prepay only model was developed.

Nineteen articulated buses were allocated to the Bondi corridor for a prepay route because of its high patronage and the high percentage of passengers paying cash fares.

Rather than converting the 380 to prepay only, the 333 was introduced as the cashless route. This maximised the efficiency of the new buses, while providing passengers with an alternative all-stops service that accepts cash fares (route 380).

Prepay History for Sydney Buses

Sydney Buses has encouraged prepay behaviour since the introduction of MetroTen, a multi-ride paper ticket, in July 1988. This was followed by magnetic stripe tickets, introduced in August 1992 and still in use today. They include the TravelTen and TravelPass, which customers are encouraged to use on all bus services, because of their time and cost savings. These tickets cannot be purchased on board the bus. Ticket agents, Transit Shops and other public transport providers sell these tickets.

Prior to the implementation of the 333, there was a trial of a prepay bus stop. This initiative encouraged and enforced passengers at a particular bus stop to purchase a ticket prior to boarding a bus. The first prepay bus stop was trialled in Neutral Bay (northern Sydney) in 2004. The bus stop was located on a major road where there was access to purchase tickets from ticket agents. This prepay bus stop required the introduction of Single Ride magnetic stripe tickets, suitable for occasional users. This trial allowed an analysis of time savings associated with prepay, which were found to be significant: it takes an average of 3 seconds to board with a prepaid ticket and an average of 11 seconds when paying a cash fare (State Transit Authority of New South Wales, 2007c). During the trial average loading times decreased from 50 seconds to 36 seconds and there was a reduction in cash fares from 12% to 4% (State Transit Authority of New South Wales, 2007c). The success of this trial was pivotal to the introduction of route 333, as it was the first trial of an entirely prepay system.

Cashless Network

The 333 service has been the next step in Sydney Buses prepay strategy, which includes the development of a cashless network utilising smart card technology. There are Australian and international models of these types of cards, including Octopus Card in Hong Kong and SmartRider in Perth.

There are plans to launch a smart card in Sydney. Tcard will integrate ticketing for all of Sydney's public transport, including government buses, train, ferries, private buses, monorail and light rail. Tcard holders will have the option of adding value by direct debit if the stored value falls below a certain level (New South Wales Ministry of Transport, n.d.). Passengers with a Tcard will be able to register their card, which increases security if the card is stolen and also provides card holders the ability to view their travel history online (Ibid).

Smart cards are beneficial for passengers, as well as transport providers. They supply more accurate and detailed information about passenger travel. Sydney Buses currently has access to data regarding time and place of boarding for its services, but there is limited information about the destination of passengers. Smart card technology will provide this detailed information, which is valuable for planning routes and creating schedules tailored to passengers. Smart cards appeal to passengers, as they own the card and are no longer required to purchase a ticket every week or after ten trips.

A cashless bus network has further operational advantages for Sydney Buses. The removal of fare transactions on board the bus allows for cost benefits at each bus depot. This includes no longer requiring a depot revenue room as well as less financial administration relating to bus operators' accounts, cash security and collection. An entirely prepay bus network would also

allow services to run as scheduled and helps negate the imposition of traffic and other factors on running times. As the first entirely prepay route, the 333 is another step on the way to a cashless network.

PLANNING AND IMPLEMENTATION OF THE 333

Before the introduction of any new bus service, there is a great deal of research and planning required. As outlined above the 333 was designed to make use of new articulated buses. Boarding times and the high percentage of cash fares along the corridor were key factors that led to the development of the prepay only route. The planning and implementation of the service was complex because of the increased bus length and the fact that it would be the first prepay only service trialled by Sydney Buses. Planning for a prepay only service started as early as May 2005.

Operational Planning

Route and Service Planning

One of the most important aspects was planning the route and ensuring it was efficient from an operational perspective and also a customer service perspective. This involved reviewing the other routes that operate along the corridor and considering which major stops needed to be incorporated into the stopping pattern for the service. It was decided that the distance between stops should not exceed an average of 500 metres in order to maximise passenger access. Finally, the stopping pattern had to be checked with Waverley Council to ensure that all stops were suitable, or able to be modified.

An assessment was undertaken to determine if the route was suitable for articulated buses. This route assessment took into account the suitability of roads and bus stops. Extensive consultation with Waverley Council was required in order to extend bus zones to accommodate the longer articulated buses. It was also necessary for council to approve additional bus space at the North Bondi Terminus.

There was a focus on achieving the right balance of services along the corridor, especially with consideration to capacity and frequency. The methodology for determining the timetable for the 333 was firstly to examine passenger volumes, and then analyse these figures in comparison to potential capacity using articulated buses. A timetable was established, which provided greater capacity, while maintaining the high service frequency along the Bondi corridor.

Depot Infrastructure

Prior to the implementation of the 333, the use of articulated (bendy) buses had to be considered for Waverley depot, which is the only depot to operate the 333. There were no articulated buses at Waverley depot prior to the introduction of the 333, therefore there were issues relating to the use and length of these buses that needed to be addressed.

There were changes to depot infrastructure, including changing the bus parking area (yard) to incorporate the 19 new articulated buses. The yard had to be redesigned to accommodate the articulated buses. This process involved altering traffic flow and direction, modifying the front gates and removing concrete islands. However, there was also the issue of yard capacity

and considering the safe number of vehicles for Waverley depot. An external contractor undertook an assessment of the yard to determine the suitability of possible new layouts.

Bus Operator Training

Bus operators needed further training in order to learn how to drive the articulated buses. There was a selection process for the bus operators, which was based on seniority, accident record and a requirement of a minimum of two years driving experience.

Ticketing

An additional major planning operation revolved around ticketing. As the service was prepay, Sydney Buses had to provide outlets for customers to purchase magnetic stripe tickets so they could board the bus. This involved recruiting more ticket agents, using ticket sellers and installing ticket vending machines. Two ticket vending machines were installed at the Bondi Junction Interchange, from which a range of tickets are available for purchase, including TravelTens, Single Ride and Pensioner Excursion Tickets.

Communication with Stakeholders

The communication between Sydney Buses and key stakeholders was a very important part of the planning and implementation of the 333. In the planning process there was continuous internal communication, and external communication between Sydney Buses and bodies such as the NSW State Government and Waverley Council. Details about the service needed to be communicated with bus operators, passengers, the local community and ticket agents. To reach these groups a variety of approaches and modes of communication were used.

Bus Operators

A number of bus operators were involved in the planning process, while all operators not directly involved were kept up to date through communication at the Waverley bus depot. Communication during the planning process was generally posted on the depot noticeboards.

Prior to the introduction of the 333, there were individual briefing sessions for all bus operators on the service. They were also provided with an information brochure, which explained the service, gave ticketing details and provided an overview of the marketing program. An important feature was the question and answer section, which provided operators with a suggested response to customer queries.

Passengers

Sydney Buses passengers were informed of the prepay 333 service through a variety of channels. Bus stop information was updated to include service details and locations of ticket agents. Brochures were also available from bus stops and on board the bus. Service information broadcast over loud speakers at the Bondi Junction Interchange advertised the 333. Bus users were also reached through the "Snap Frame" advertising on the inside of buses along the Bondi corridor.

Figure: 333 Articulated Bus at a New Bus Stop

The use of way finders was an important aspect of passenger communication. Sydney Buses staff from a range of departments were at key 333 bus stops in the week leading up to the launch, and in the first two weeks of the service to distribute information to passengers and answer questions. During the first week of the service, way finders travelled on the bus itself, to assist bus operators with passenger enquiries.

Community

Part of the communication plan involved not only reaching regular bus users but also developing awareness of the 333 as a new transport option for people in the local area surrounding the service. These people were reached through advertising in publications including the Wentworth Courier, Bondi Spectator and free city based publications including City Weekly and MX. An advertisement also appeared in The Word Tourist Map. Below is the advertisement that was used in both community and tourist publications.

Figure: Press Advertisement

Posters were placed at council bus shelters and at train stations to reach other commuters who are not regular bus users.

A 333 brochure was created and sent to local residents in the Waverley Council precinct with their rates notices. The brochure provided detailed ticketing and timetable information.

The 333 bus livery features prepay branding on the front and side of the bus. This helps passengers identify the service as being different to other services and generates community awareness of prepay. The branding on the bus was consistent with all other communication messages enabling people to make a link between the messages to which they were exposed.

Ticket Agents

The support of ticket agents was vital in the launch of the 333 as many customers purchase tickets to board the prepay bus through these external resellers. Ticket agents were informed about the service and encouraged to introduce the sale of SingleRide and Pensioner Excursion Tickets, which they did not previously sell. This helped ensure that no one was excluded from prepay services.

Ticket agents were provided with brochures to help communicate the 333 services to their customers. In addition to timetable information, the brochure listed the location and opening hours of the ticket agents. It was extremely important to ensure that there was sufficient communication about the prepay only route as customers rely on ticket agents for prepay tickets and information.

RESULTS AND ANALYSIS: TRIPLE BOTTOM LINE

The triple bottom line framework has been used to analyse the performance of the 333. The triple bottom line evaluates the service in terms of its impact on people, profit and planet. For Sydney Buses it is important that a service is not only positive in terms of business profitability and efficiency, but that it also meets the needs of communities in which the service operates and causes minimal environmental impact. Analysis in terms of people, profit and planet allows these factors to be taken into account.

PEOPLE

Sydney Buses' 333 service has directly impacted customers and bus operators, as well as indirectly affecting those in the community who are not regular bus users.

Customers

The majority of customer feedback regarding the 333 has been positive. The prepay service offers customers a faster, cheaper and more comfortable service. Customers, in particular peak commuters have praised the introduction of the prepay only service, as it has provided them with a faster trip due to faster boarding times and the limited stops which the service offers.

> I love the 333 Bondi Bendy. I am a daily bus user who travels with two small children up and down Bondi Road. I love to get the bendy because it is always running to timetable, there is always somewhere to sit, it is super fast, and it stops at all the places I need to go, and none of the places that I don't. Thanks for updating the 380 bus route, it has been a nightmare for everyone for years during summer, crowded, slow, late, full etc. I smile whenever I see that 333 coming, and the kids love it to.
> Passenger Feedback, November 2006
>
> (State Transit Authority of New South Wales, 2006b)

Passengers enjoy a faster trip because the service is a limited stops service and also because of the reduced boarding times. Passengers simply dip their ticket in the magnetic ticket validators as they board the bus, which takes an average of 3 seconds, and saves an average of 8 seconds per passenger compared to paying a cash fare (State Transit Authority of New South Wales, 2007c). This reduces dwell time at each bus stop with the potential to reduce total travel time.

There are also considerable cost savings for passengers when they pre-purchase a TravelTen or TravelPass ticket. The TravelTen ticket is valid for ten trips over an unlimited period of time and allows passengers to save up to 22% compared to the cost of purchasing single tickets (State Transit Authority of New South Wales, 2007d). A TravelPass gives unlimited travel on Sydney Buses, Sydney Ferries and CityRail services, and can be purchased as a weekly, quarterly or yearly ticket. The cost savings on a TravelPass are also worthwhile, becoming better value when used more frequently.

Customers also benefit from the use of higher capacity articulated buses on the 333 service. These buses help to make the journey more comfortable as they are new, air-conditioned and more people are able to obtain a seat.

> I really enjoy travelling on the new 333 bus service route. It provides a swift comfortable ride. What I enjoy the most is quick ticket processing by passenger, infrequent stops and sitting down to a seat.
> Passenger Feedback, November 2006
>
> (State Transit Authority of New South Wales, 2006b)

Despite the majority of customers providing positive responses to the 333, Sydney Buses has received some negative feedback from customers. It should be noted however that this feedback is generally regarding the stopping pattern of the 333 and that it is a shorter route compared to the 380.

> I congratulate you on introducing the new ticketless 333 route but I am disappointed that it is limited stops.
> Passenger Feedback, October 2006
>
> (State Transit Authority of New South Wales, 2006b)

Unfortunately the 333 is not able to meet the needs of everyone along this corridor due to the fact it is a limited stops service. There may be the need to revise the route but any changes would have to be made after carefully analysing the benefits of having a limited stop service against the benefits of adding more stops. It is encouraging to see the general acceptance of the prepay concept and the type of complaints as detailed above show that many customers have understood the prepay message.

Patronage figures along the Bondi corridor are encouraging and similarly to the feedback, indicate that people have responded well to the new service. The patronage growth on the 333 service, and on the Bondi corridor in general, will be outlined in the profit section of the paper.

Bus operators

The 333 service has advantages for bus operators in addition to customers. The prepay system has removed the ticket transaction element of their role, allowing them to focus on driving and customer interaction, such as greeting passengers and answering queries. As a result there have been improvements in the areas of safety and security as well as customer service.

Bus operators on the 333 service benefit from increased safety on board and the removal of conflict with customers over fares. With no cash kept on board the bus it is expected that there will be fewer disputes between bus operators and customers. This provides a safer environment for all parties.

The 333 has provided benefits to both the customers and bus operators, allowing Sydney Buses to improve their customer service, and as a result help retain customers and further increase patronage. The 333 has been embraced by the local community as a result of the many benefits offered to bus users and bus operators.

PROFIT

Patronage growth along Bondi Corridor

As outlined above, there has been considerable patronage growth along the Bondi corridor since the introduction of route 333. The table shows the six months immediately after the 333 was introduced (October 2006 to March 2007), compared with the same months in the previous year.

**Table: Year on Year Patronage Growth along the Bondi Corridor**

	2005/2006	**2006/2007**	**Growth**	**Percentage Growth**
October	744,600	715,584	- 5,793	- 0.8 %
November	791,207	826,293	35,086	4.4 %
December	826,707	848,430	21,723	2.6 %
January	808,593	878,629	70,036	8.7 %
February	750,138	783,807	33,669	4.5 %
March	817,534	873,574	56,040	6.9 %
TOTAL	4,738,779	4,949,540	210,731	4.4 %

(State Transit Authority of New South Wales, 2007a)
Note that 333 service was introduced on 8th October 2006.
2005 to 2006 includes routes: 380, 381, 382, L82, X84
2006 to 2007 includes routes: 333, 380, 381, 382, X84

The table displays patronage growth in every month, with the highest growth occurring in January. In this six month comparison, there has been an overall growth of 210,000 passengers. This indicates a total growth of 4.4% along the corridor.

Growth of the 333

Route 333 has experienced steady growth in patronage. In the first week of operation, the service had 46,714 passengers. In the last week of March, six months after the introduction, 69,492 passengers used the 333 service. During the first 25 weeks of service, route 333 has carried over 1.6 million passengers. The table below displays the patronage figures on the 333 since the start of the service.
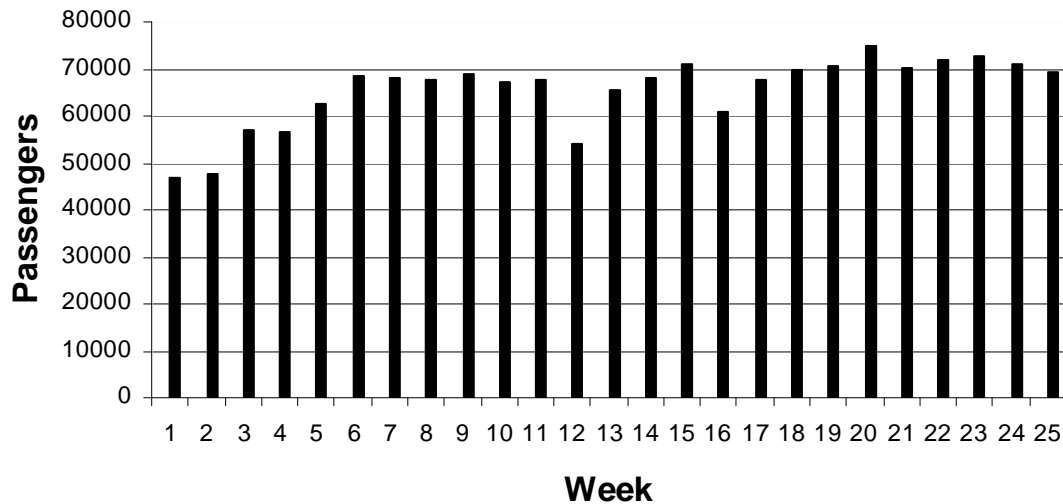
Graph: Weekly growth of the 333
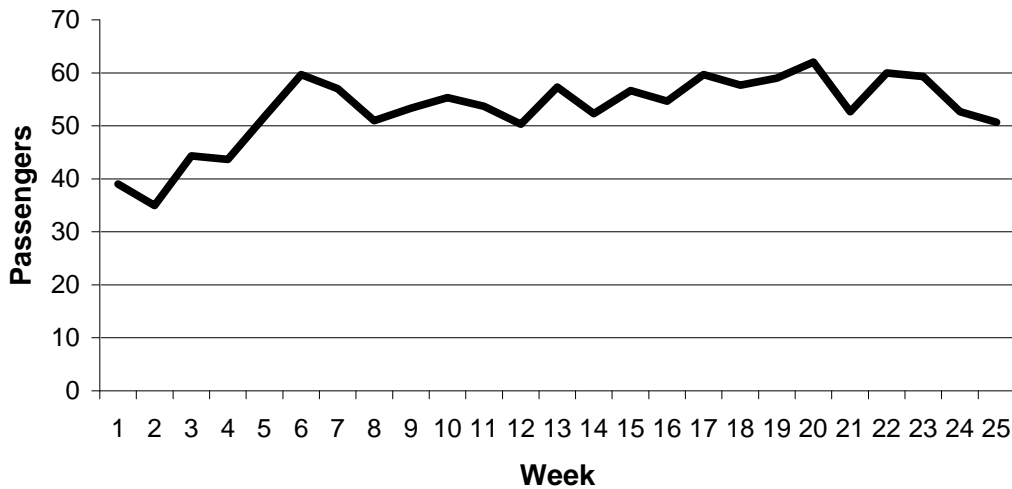(State Transit Authority of New South Wales, 2007e)

> *Week 1 is week commencing 8/10/06*
> *Week 5 is week commencing 5/11/2006*
> *Week 10 is week commencing 10/12/2006*
> *Week 15 is week commencing 14/01/2007*
> *Week 20 is week commencing 18/02/2007*
> *Week 25 is week commencing 25/03/2007*

The 333 has become a more significant portion of the corridor over the six months since it was introduced. In its first week of operation, route 333 represented 26.6% of the total patronage of the corridor. This grew to 40.5% of corridor passengers by the end of March.

There are many factors which influence patronage on the Bondi corridor. Due to the large numbers of tourists along this corridor, patronage is affected by the time of the year and the weather. Changes also occur during school holiday period and in weeks with public holidays. Although the 333 has been impacted by some of these factors, there has been a consistent growth in patronage.

Average number of passengers per 333 trip

The graph below displays the average number of passengers on board a trip of the 333 service. In its first week of service, there were 39 passengers per trip. While not a steady growth, the number of passengers per trip has increased over the six months of operation. This reached a peak of 62 passengers per trip in its twentieth week of operation (the week commencing 18th February 2007).

Graph: Average number of passengers per 333 trip

(State Transit Authority of New South Wales, 2007e)

The gradual rise in number of passengers per trip indicates increasing efficiency along the corridor, as the 333 articulated bus is carrying more passengers with fewer trips.

BOARDINGS PER REVENUE KILOMETRE ON BONDI CORRIDOR

The following table shows the average number of passengers boarding the bus for every revenue kilometre on the Bondi corridor. Revenue kilometres are the kilometres in which the bus is in service and available for paying passengers to board.

Table: Average number of boardings per revenue kilometre

|	2005/2006	2006/2007	Percentage Increase
October	4.7	4.8	2.5 %
November	5.0	5.5	8.5 %
December	5.0	5.4	7.8 %
January	4.8	5.4	11.0 %
February	5.1	5.4	4.5 %
March	5.0	5.3	6.0 %
TOTAL AVERAGE	5.0	5.3	6.7 %

(State Transit Authority of New South Wales, 2007a)

The table shows that there has been an increase in boardings per revenue kilometre for every month since route 333 began. Over the first six months of operation, there was an average monthly increase of 6.7% for boardings per revenue kilometre.

Prepay and cash fares along corridor

The introduction of route 333 has led to a significant reduction in the percentage of passengers paying cash fares along the corridor. Before the introduction of the route, the corridor had a high percentage of cash fares, about 40%, and this can be attributed in part to the high number of tourists who use this corridor. Cash paying passengers were required to convert to prepay, if they were to take advantage of the limited stops and brand new buses, which are part of the 333 service.

The other routes on the corridor, 380, 381, 382, X84, accept both cash and prepaid tickets and this accounts for the cash figures below.
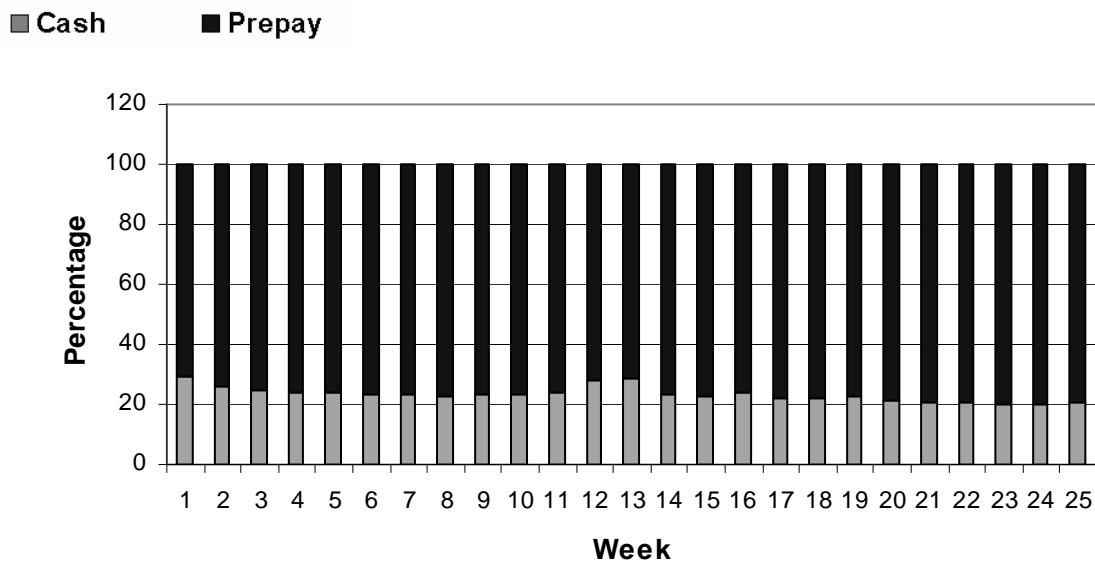
Graph: Percentage of prepaid fares versus cash fares

(State Transit Authority of New South Wales, 2007e)

There was a considerable reduction in the number of cash fares, and the first few months saw the percentage of cash fares halve on the corridor, from 40.2% to 20.4%. This indicates that passengers have supported the prepay concept and suggests that they are willing to accept additional prepay routes.

The level of cash fares has continued to decrease on the corridor, and the week commencing the 27th May 2007 saw the best result yet, with 81.2% of passengers using prepaid tickets.

Route 333 has assisted Waverley depot to reach a higher proportion of prepay tickets, when compared to all other depots. In March 2006, Waverley had 62% of passengers prepaying, compared with the Sydney Buses average of 72% across all depots. A year later, after the introduction of the 333, Waverley depot has significantly improved in this area, as they have 70% of passengers prepaying, compared to a Sydney Buses average of 74%.

PLANET & SAFETY

Through its prepay nature and the use of articulated buses, the 333 service has the potential to minimise its environmental impact when compared with a regular bus service.

Only articulated (bendy) buses are used on the 333 service and they offer environmental and safety benefits. The use of articulated buses provides increased capacity reducing the number of buses required on the corridor. The capacity of articulated buses is 88, with 64 seated and 24 standing passengers. A standard (rigid) bus has a capacity of 62, with 47 seated and 15 standing passengers. This is a 42% increase in capacity, and therefore, the same number of passengers can be carried with significantly less trips. This has a positive effect on the environment, as well as helping the business bottom line.

The new articulated buses are safer for passengers as bus operators have access to video screens, which provide a view of the centre door. In contrast, operators of rigid buses rely on a mirror to view the center door. The video system provides a clearer view for bus operators resulting in a safer exit for passengers. Other safety features of articulated buses include the rear mounted reversing camera, passenger door safety system and roll away protection (State Transit Authority of New South Wales, 2006c).

All 333 buses are of the Euro 3 emission standard. This standard measures emissions of exhaust components, including nitrogen oxides (NOx) and particulates (PM). The graph below shows the difference in these exhaust ingredients on a Euro 3 compared with other standards. While not as high a standard as the Euro 4 or 5, the Euro 3 is a significant improvement on the Euro 2. This has benefits for the health of individuals, as well as the environment.
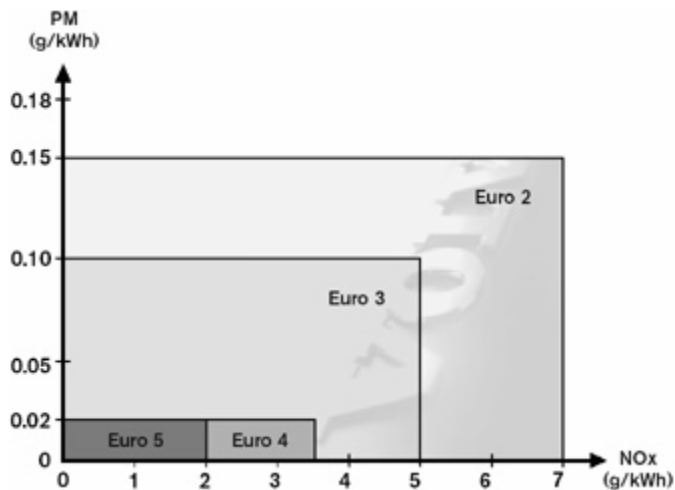
Figure: Exhaust emissions for Volvo vehicles with Euro standard

(Volvo Truck Corporation, 2007)

The Euro 3 buses used on the route are a lower emission bus than those servicing surrounding routes in the Bondi area. In addition, there are less fuel emissions per passenger carried, due to the increased capacity articulated buses on the route.

The prepay nature of the 333 service and the appeal of a new bus service both help to promote the continued use of public transport, and a reduction in the use of cars. This is reflected by the previously explained patronage increase on the Bondi Corridor.

As a result of quicker boarding associated with prepay, buses on route 333 spend less time at each bus stop, reducing total engine idling time at bus stops. This assists in minimising emissions and fuel consumption, as well as minimising the journey time, which also provides environmental benefits.

There is also potential for less congestion along the route for two reasons: increased capacity allows fewer buses to transport the same amount of passengers. Also, the ability for reduced car use suggests that there are less vehicles on the road, as people choose to travel by bus.

CURRENT CHALLENGES

The 333 continues to experience success and growth from an operational and customer service perspective. However there are a number of areas in which improvements could be made, including service, communication and patronage improvements.

Service

There may be opportunities to further refine the stopping pattern to enhance the service, providing customers with a more accessible service. Feedback from passengers and bus operators indicate that are several popular stops which are not currently part of the limited stops 333 service. This issue requires further investigation and research. There is the potential to significantly increase patronage if the most popular bus stops are identified and added. As previously mentioned, the benefits of additional stops would need to be considered in terms of the increased total travel time.

Communication

The communication about the service has been reviewed and is currently being improved. For example, one improvement involved the placement of further destination signage in the window of the buses to solve the problems associated with a scrolling destination board.

Route 380 has been the iconic route from Sydney CBD to Bondi for many years. As well as attracting new passengers, there is a challenge to communicate the benefits of the 333 to 380 users. It is a difficult task to change the perception of passengers who are comfortable with catching the 380. However, there are many benefits of route 333 which continue to be conveyed to passengers. Due to the large number of infrequent users that travel along this corridor, communication needs to be a constant focus.

Patronage

The majority of growth along the corridor has occurred in peak times, which was expected. However, there are further opportunities for patronage increases in the off peak. It has been challenging to increase the use of the service during off peak, as many passengers during these times are occasional users of the 333, including locals and tourists. Many off peak users are either not aware of the service or do not have enough information or incentive to purchase a ticket before they travel.

Off peak patronage is currently being addressed through marketing efforts focussed on reaching tourists. The 380 is well known in tourist markets as the bus to catch to Bondi Beach. As such, the 333 is currently being advertised in tourist publications and through advertising of Sydney Buses tourism products, such as the SydneyPass and Explorer services.

MAIN LESSONS LEARNT

The implementation of the 333 service has indicated that certain characteristics work best on prepay routes. The first characteristic is having a parallel route which accepts cash fares, such as the 380 to Bondi Beach. This means that no one should be inconvenienced by the introduction of a prepay only service.

Instead, convenience is a key characteristic of this service. The limited stops concept is popular for a prepay service as it makes the service even quicker, helping to increase patronage and improve efficiency.

Finally, prepay routes have proven to be more popular during peak times with commuters, as they are more likely to be accustomed to purchasing a prepaid ticket. The 333 route has an opportunity to improve off peak patronage, as previously mentioned. This is a challenge which requires further action.

SUBSEQUENT PREPAY SERVICES

Route 333 has experienced much success as a prepay bus service. This has resulted in the introduction of two more completely prepay bus services and a program for further prepay services on other major corridors.

Two new prepay only services, the 297 and the L38, were launched in April 2007 with more being planned over the next year. The 297 service travels between Denistone East, a north western Sydney suburb and Sydney Town Hall, making use of recently improved arterial road networks, including the new Lane Cove Tunnel.

Route L38, an existing service, was recently re-launched as a prepay only service. This route is a peak hour service that travels between the inner western Sydney suburb of Abbotsford, and Circular Quay. There have been no changes to the timetable or stopping pattern, the only change has been removing ticket selling on board the bus. For those passengers wishing to pay for their ticket as they board, there is an alternative all-stops service. This is similar to route 333, where passengers have the option to catch the all-stops 380.

It is part of the New South Wales Government's Bus Strategy to use more articulated buses on high frequency services to the Sydney CBD. Part of this plan is "allowing only prepaid fares on these buses to reduce dwell times at bus stops" (New South Wales Government, 2006). This strategy is to be implemented from 2009 to 2011, however the 333 service already meets these requirements before the given timeframe.

CONCLUSION

The innovative route 333 continues to be a successful service for Sydney Buses. Thorough planning of the route and consultation with key stakeholders ensured a smooth launch of the service. Both the positive feedback and patronage growth indicate that passengers appreciate the new service. The advantages of less emissions, increased capacity and less congestion minimise the environmental impact, which benefits passengers and the community. While there are opportunities for the service to improve, the experience of route 333 has been encouraging for Sydney Buses, and this is demonstrated by the implementation of two

subsequent prepay routes. The success of the 333 shows that prepay is widely accepted and that Sydney Buses is on the way to an entirely prepay network.

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