REMEMBER TELEBUS? - THE ROWVILLE REPORT

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Abstract:

In planning the type and extent of services they will provide, public transport operators are continually involved in calculating trade-offs, particularly between the cost of the service, and the patronage and revenue which it will generate. To the extent that new or increased patronage is developed, such decisions will impact, at least at the margin, on the community's environment, through changes in pollution and congestion caused by the reduction in potential car journeys. This paper deals not with the "big picture" trade-offs, but with how a local service operating in an adverse environment is balancing economic, patronage and social impacts in developing service.

The paper begins by reviewing the experience obtained in the introduction of the TeleBus service to the Chirnside Park area in 1978. The paper then briefly discusses the changes in TeleBus over the intervening years, and looks in some detail at the current operational environment in Rowville, an outer-eastern suburb some 30 kilometres due east of Melbourne CBD, and the patronage generated by that operation. In reviewing this operation, results of a market research study conducted in 1993 are presented to highlight the operational environment within which the Rowville service operates.

The paper concludes by discussing the current environment for public transport operation in Victoria as one which places great emphasis on the cost of provision of services, rather than on the benefits provided by those services. In addition the trend, within the constraints of the multi-modal MET ticket system, is to place on bus operators the responsibility to generate at least some of the cost of the operation of services from farebox revenue. This means that ,at the operator level, the development of different, more flexible, and low resource use services must be a strategy employed to balance the social, economic and environmental costs and benefits of providing an appropriate level of public transport at the local level.

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1. BACKGROUND

In planning the type and extent of services they will provide, public transport operators are continually involved in calculating trade-offs, particularly between the cost of the service, and the patronage and revenue which it will generate. To the extent that new or increased patronage is developed, such decisions will impact, at least at the margin, on the community's environment, through changes in pollution and congestion caused by the reduction in potential car journeys. This paper deals not with the "big picture" trade-offs, but with how a local service operating in an adverse environment is balancing economic, patronage and social impacts in developing service.

Those with a long memory, and a good library of ATRF papers, will find an early reference to the initial TeleBus operation in the 1978 papers entitled "Possibilities for Demand Responsive Bus Operation in Outer Suburbs" (Usher 1978). This paper was written at a time when financial pressure on one hand, and the need to develop service in rapidly developing new estates on the other, encouraged us to look at less conventional ways to provide local bus services.

This experience has assisted my company to provide what we believe are effective local services in areas suitable for small bus demand responsive operation, and we have expanded the service into other areas. This paper will briefly discuss the changes in TeleBus over the intervening years, and look in some detail at the current operational environment in Rowville, an outer-eastern suburb almost 30 kilometres due east of Melbourne CBD, and the patronage generated by that operation.

Requirements to be met by the service

The requirements of the TeleBus service have not changed in the intervening years, and remain as outlined in 1978 (with comments on developments in brackets as appropriate):

"1. The operation should be able to service developing residential estates from the initial stage to full development, and be adaptable to resulting demand changes without frequent reorganisation.

2. The residential estates in which the service would operate are usually laid out without thought to bus operation, therefore the system should be operationally flexible (we ARE finding that newer estates do now tend to have a wider "spine" road network, but often service operation along these roads does not give full coverage to the estate. Thus TeleBus small bus operation continues to offer service advantages).

3. The service has to be attractive to passengers who have a preference for a second car....The service is aimed at the second car user. ....From experience this (means) catering for a small number of rail commuters in a feeder service role, large numbers of school children to local schools or to connect with other local bus service, and whatever shoppers we (can) attract through attractiveness of service and destinations (we have developed an additional market among older people in several areas).

4. Operational economics determine that the vehicle used must be capable of continuous use throughout the day, i.e. be able to cope with all loadings, including school loadings, although the operation of a smaller than usual vehicle may have some cost savings.

5. The service should overcome the previous bad image (sic) of outer suburban operation (in terms of vehicle used, this no longer applies, and we hope it also does not apply to the nature of service offered). It should be "in" to use it and attract favourable publicity.

6. To assist in planning, to ensure meeting specific demands and to assist in introduction, we needed liaison with an effective local representative body (this was more difficult in Rowville - although we were given every assistance in placing (paid) advertisements in the community newspaper, the personal sales effort from residents we experienced in Chirnside Park was not found in Rowville. This reflects the far greater dependence on car travel in Rowville, due to pre-existing availability).

7. We had a commitment....to the installation of a UHF two-way radio system (which has been updated with new equipment in the intervening years)."

(Usher 1978)

Changes in Service Operation

The impact of multi-modal ticketing in Melbourne under the MET system has had the largest impact on TeleBus operation, as we had to find some way to integrate TeleBus fares with MET multi-modal tickets, and also once this was done, to include TeleBus operation into the MET bus contract system.

The solution was to change the character of the service from the original "many to few" operation to what may be described as "deviation from fixed route", although the "fixed route" is notional in operational terms. The Rowville operation is further explained below.

Development of Bus Operation in Rowville

Rowville is a developing outer suburban area of Melbourne, mostly within the local government boundaries of the City of Knox. It is a dormitory suburb which has developed over the last seven or so years, and has a small regional shopping and community centre as its focus, although this is situated on a perimeter trunk arterial road (Stud Road) as shown in Figure 1. It does not have good access to suburban rail service - the closest station is Ferntree Gully some 8.7 kilometres distant. Other trunk public transport is provided by bus services to Ringwood and Dandenong, operating on the perimeter, and between Ferntree Gully and Monash University, operating through the area.

Our original operation through the Rowville area was fixed route in nature, travelling between Boronia Station and Waverley Gardens Shopping Centre. However the PTC's predecessor, the Metropolitan Transit Authority, decided to run another operator's service through the area, as a trunk operation. We then took the decision to concentrate on providing local service in the wider Rowville area as it developed, using the TeleBus approach.

It will be seen from the data which follows that we have therefore several competitors to this operation; the trunk bus service which travels through a central part of the total development, a very high level of car ownership, and the possibility of walking or bike riding, as bicycle paths are numerous throughout the area.

Because our patronage experience from the initial Rowville TeleBus operation was significantly different from that experienced with other TeleBus operations, we commissioned Sutherland Smith to conduct a market research study in the area, to identify why this should be so. We felt that this would also give us a benchmark with which to compare other areas which might be available for future development, giving us a guide to the patronage we might expect from such development.

This research was done in August and September 1993 (Sutherland Smith 1993), and some of the information derived is set out later in the paper.

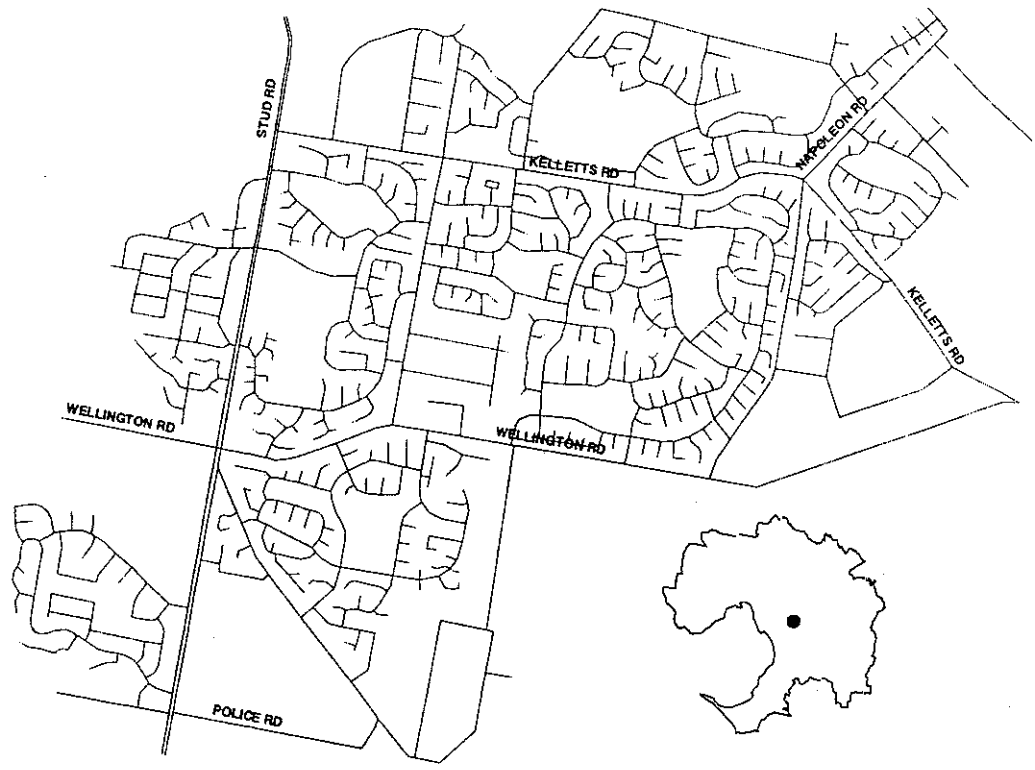

Figure 1 Rowville TeleBus Operating Area

Current TeleBus Operation in Rowville

The total operational area is divided into three areas for peak operations, and into two for off-peak and school time operation, utilising three buses in the off peak, and four in the peak. In one area, school loading is such that we have to use a large vehicle for some trips. In each area a notional fixed route is designed, which passes through "fixed stops", stops through which the bus must pass on each journey, though not necessarily in the same, or indeed in any set direction. These fixed stops were introduced partly as a means to incorporate the TeleBus system in the MET multimodal ticketing system - MET fares being available to passengers who board or alight at these stops. Times at these stops are timetabled, with a five minute "window" to allow the driver flexibility in picking up and setting down passengers at other than the fixed stops.

A complicating factor is the presence of MET "Bus Stop" signs on the trunk route, which we feel obliged to service if we travel past them, at normal MET fares. This erodes our own revenue base.

Passengers who wish to board away from the fixed stops phone their request to the despatcher on a dedicated telephone number, and the despatcher passes this call request on to the driver by radio. This stop is then included in the appropriate tour with other pickups logged from calls received, and the fixed stop sequence. Passengers who board at the terminii, and wish to alight away from the fixed stops, advise the driver on boarding, and he or she includes them in the total tour stopping schedule as appropriate.

The surcharge is currently 40¢ (20¢ concession) for pickups and drop offs away from the fixed stops. Then revenue is retained by TeleBus. There are discounts for bulk purchase on these fares. MET fare revenue is all remitted to the PTC, while we retain surcharge revenue.

It will be seen that the efficiency of the system still depends (as it did in 1978) on the skill and local knowledge of each driver, as they put each tour together - this has been a constant feature of TeleBus operation since it started, and a rapport soon builds up between passengers, drivers and the despatchers. Most of the passengers are regulars, with many making permanent or "subscription" bookings.

Thus we are contracted to provide a notional fixed route service through set fixed stops, set at strategic points. It is important to emphasise that the fixed route is notional only for the purpose of calculating operating kilometres for the contract), and the bus can still and does) range over the whole of the operating area picking up from, and dropping people at, home or wherever they wish.

Other critical aspects of the service remain unchanged; the five minute window at intermediate stops, the manual despatch by two-way radio (although the despatchers are now handling 10 buses, plus a 50 vehicle fixed route operation), small buses, although now considerably updated, and the personal and friendly nature of the service.

We have looked at computer aided despatch, but have yet to be convinced that the high cost of installation will reflect in improved cost effective service improvement.

2. THE SURVEY

Methodology

A telephone questionnaire was conducted on two evenings in August 1993 by Sutherland Smith staff trained in interview technique. The interview covered a random sample of 120 households in the Rowville area (3178 postcode) and dealt with the transport needs and habits of the respondents and other members of the household. Thus the tables refer to percentages of respondents and responding households as appropriate.

Table 1 Rowville - Household Characteristics

Employment	**% of Responding Households**
One Full-time worker	57%
Two or more Full-time workers	43%
Period of Residence	**% of Respondents**
Resident over 5 years	51%
Resident 2-5 years	35%
Resident under 2 years	14%

This illustrates a stable population, with reasonable income levels.

Table 2 Rowville - Children per Household

		% of Responding Households
Homes with children		47%
Of these -	with pre-schoolers	26%
	with primary students	31%
	with secondary students	18%
Child ages within respondent households		
	5-12	68%
	13-17	32%

There is a potential identifiable market in providing school services, which is likely to grow. By contrast, only 9% of respondents were aged over 50, so the potential market in this category is likely to be low, in the near future.

Table 3 Rowville - Car Ownership and Licence Holding

	% of Responding Households
At least one car	100%
Two or more cars	85%
Access to company car	29%
Adults with driving licence	98%

It seems likely that an assumed precondition of moving to an area like Rowville is to ensure access to two cars, and not factor in any public transport option. In this case, government funding constraints prevented us putting in anything but a basic service in the early years of the estate, so intending purchasers did not see many buses in the area, thus emphasising the need (to them) for second car availability.

Table 4 Rowville - Weekday Travel by Purpose

	% Respondents making this Type of Trip
Adults mainly to/from work	65%
Mainly Shopping	14%
Children to/from school	15%
Other	2%
Children - School journeys	
by car	73%
walk	13%
bus	14%

As nearly all work journeys are to destinations outside the Rowville dormitory area, and these destinations are very fragmented, this market for bus usage is effectively denied to us. However, in the school travel market, 81% of respondents' primary school children and 41% of their secondary school children go to school in Rowville.

Table 5 Rowville - Weekday Travel by Mode

	% Respondents Travelling by this Mode
Adults	
By car	95%
By train *	2%
By bus	2%
Walk	1%
Children	
By car	73%
Walk	13%
By bus	8%

* involves access by another mode, car or bus

Attitudes

Reasons given by adults for not using the bus/public transport include :

"it takes too long"

"the car is needed for other purposes"

"public transport is unreliable"

However, given that so few adults had actually used the bus service, it is likely that these were more "learned" responses, rather than derived from actual experience of the service.

The main reasons given for children not using the bus/public transport include:

"personal safety worries"

"too far to walk to transport"

"takes too long"

"Personal safety worries" was by far the most often quoted reason, being given more than twice as often as the next, "too far to walk....". Here again, these responses are possibly more "learned" than from actual experience. There need be no walking involved as TeleBus will pick up passengers at the door, and for local schools the journey time seldom exceeds 15 minutes.

Awareness of the TeleBus service

Most people were aware of the TeleBus service (89% of respondents), and this was significantly higher among the "home duties" respondents than amongst full time workers, which may be the result of the presence of the vehicles in the estate during the

day. More people seemed aware of the TeleBus service than of all other local bus operations combined, even the trunk fixed route service operating through the estate.

However, only 57% knew how it worked, and although 7% had tried TeleBus, none of the respondents said they used it regularly. When respondents' replies are aggregated:

1% use it regularly for shopping and for school;

2% use it occasionally for shopping and for school

5% use it very rarely mainly for connecting to other forms of transport, and also for school and shopping.

Pricing

Pricing was not a constraint, as only 5% indicated that a 20¢ fare reduction would influence them to "quite likely" try the service. This leaves open the possibility of charging a higher fare (than the MET fare) for the operation, or charging a local area only TeleBus fare, separate from the MET system.

Patronage

Weekday patronage levels which gave rise to our concerns are illustrated by the figures for August/September 1993 shown in Table 6.

Table 6 Patronage - Rowville TeleBus 1993

		Total Passengers	Passengers per trip	Total km.	Passengers per km.
Week ending 1993	29 Aug	1173	3.91	4213	0.278
	5 Sept	1583	3.62	4137	0.383
	12 Sept	1436	3.29	4251	0.338
	19 Sept	1432	3.28	4252	0.338
	Mean	1406	3.525	4213	0.334

These figures may be compared with other services, as shown in Table 7. Passengers per trip generated by Rowville TeleBus were significantly less than that generated by the Mooroolbark /Lilydale TeleBus operation - although significantly higher than that of the local rail feeder/shopping service noted in Table 7 above. Also the loading was not as good as that for the initial Chirnside Park service, but in 1978 only 53% of households had access to one vehicle, and only 35% had access to two or more.

In these circumstances, as operators we were concerned with the performance of the service, and how by its development we may possibly improve patronage.

Table 7 Patronage - Other Services 1993

	Total Passengers	Passengers per trip	Total km.	Passengers per km
Week ending 19 September 1993				
TeleBus - Mooroolbark/Lilydale areas	3049	5.65	4950	0.616
Local Rail/Shopping feeder service (fixed route)	1224	3.88	N/A	N/A
Trunk Route Service (fixed route)	16068	46.57	N/A	N/A
By Contrast: Week ending 11 March 1978				
TeleBus - Chirnside Park	1144	8.3 approx.	N/A	N/A

We determined to invest resources in additional services, additional that is to the services contracted for by the PTC, and we also redesigned the service network in an effort to discover what the result would be. The main changes were to:

- Place a more "out and back" orientation on the tours, instead of being circular, so that the buses would be seen in the general areas more frequently, giving rise to a perception of greatly increased service. Travel time is also reduced. This has achieved its aim, although at the cost of some confusion to passengers in the initial stages, as passengers were used to circular routes.

- Locate the fixed stops, and hence the notional route, in areas away from the trunk route which the PTC had inserted into the area, i.e. to reduce the competition to the TeleBus service. We also located stops in new and developing areas of the estates.

- Schedule more services at school times so that this market could be better catered for.

- Prepare and distribute our own timetables so that we had the ability to more quickly change service to meet demand, one of the inherent advantages to this form of operation.

- Attempt to heighten the knowledge and awareness of TeleBus in the area through letterbox drops, ads in the local community newsletter asking for comments on the service, and use of our "InfoBus".

- We did not take any fare initiatives at this stage, saving this for work in another area.

- Introduce a better vehicle, sign-written to explain its purpose. These vehicles are not always used on this area service, but are used frequently enough to get the message across.

While putting in extra service, we were able to change or reduce services to areas which were not generating patronage (e.g. the service to Stanford Park area was changed to demand service only, and no fixed stop was located in the area). This allowed more time resources to be devoted to other more productive areas. Another advantage in providing service above what had been contracted for, is that we have the flexibility to quickly "fine tune" service, in terms of time and kilometres operated, to better match service to demand.

In 1994, we achieved the following figures :

Table 8 Patronage - Rowville TeleBus 1994

		Total Passengers	Passengers per trip	Total km.	Passengers per km.
Week ending 1994	May 1	1374	4.91	3419	0.402
	May 7	1590	4.54	3808	0.418
	May 14	1558	4.45	3384	0.460
	May 22	1628	4.65	3785	0.430
	Mean	1537	4.64	3599	0.427
% Change Aug/Sept 93 - May 94		+9.4%	+31.6%	-14.6%	+28.0%
Week ending 1994	July 24	1566	4.47	3843	0.407
	July 31	1528	4.37	3736	0.409
	August 7	1553	4.57	3835	0.405
	August 14	1604	4.68	3293	0.487
	Mean	1563	4.52	3677	0.427
% Change May 94 - Jul/Aug 94		+ 1.6%	-2.5%	+2.2%	0%

The small changes in patronage between May and July/August indicate that we can expect only marginal future improvement, if any. However it must be noted that during school holidays, average weekly loading is only about 900 passengers, with a mean load per trip of 2.6 passengers. It is obvious we have achieved our aim of better serving the school market!

Further comparison may be made with the Mooroolbark TeleBus operation, which in August 1994 averaged 6.4 passengers per trip, (5.5 in school holidays) and the sample feeder route referred to previously, which is now averaging 5.44 passengers per trip.

While the percentage increases gained are significant, note that the average loading is still small, although in the context of suburban feeder services and local estate operation, and given the high levels of car ownership, it is probably as least as good as can be generated by conventional operation, on a per trip basis.

3. OBSERVATIONS

At a time when resource intensive, high frequency small bus operation is attracting a lot of attention in many areas, our experience in Rowville illustrates that in certain areas, particularly where high levels of car ownership are evident, the lower frequency TeleBus concept can generate patronage at levels which exceed that developed by normal services in other, similar, areas. There is a demand for "public transport" even in an area where car availability is almost unlimited.

As an alternative to the intensive use of bus and driver resources, design of a service which ameliorates the inconvenience of low frequency operation with the ability to be called for or dropped at home is an approach that is less expensive in vehicle cost and driver time. It is possible to change service levels by changing the supply of vehicles relative to the size of the area served, and so respond easily to demand changes.

Detailed knowledge of the market for bus transport for which the service is being planned, and then being able to plan service to meet the specific demands of that market, mean that the allocation of resources is better targeted, and therefore more efficient and effective. However, this knowledge does not automatically transfer to patronage where, as in Rowville, there are high standard competitors for limited potential bus patronage. The question of what standard bus service it is appropriate to offer in these circumstances is not resolved nor, for that matter, has it been addressed.

While advertisements and letter box drops can be effective, we have found the most effective marketing and patronage development at the local level seems to involve people, either through an "InfoBus" approach, where questions can be answered face to face by staff who actually operate the service, or by what we call the "suck it and see" marketing approach, where service is put on the ground, and modified in the light of the needs new patrons express to drivers, supervisors or by letter.

The main need is to be seen to be responsive to needs in the area, within a relatively quick response time. We have achieved this through offering additional service to that contracted for, and giving ourselves "room to move".

Further Development

In the absence of definitive "level of service" parameters, we believe we are now over-servicing this area, although the investment in additional service has improved patronage. By redesign of the route structure, we can reduce kilometres and possible journey times. As we move some service back to circular routing, the perception in the area will be of fewer buses in service, because buses will travel the same street less frequently, but we will not in fact be able to reduce bus numbers, only operating distance.

We will look at the possibility of introducing a "local fare", which will give passengers access to only the Rowville area, and which would be independent of the MET fare, which by contrast gives passengers access to the whole MET system. However a limiting factor is the relatively low level of the MET fare scale, which will prevent revenue from any local fare from making a worthwhile contribution to total local operating costs. If we can overcome this problem, there will be some worthwhile fare-related marketing initiatives possible, such as discount 10-journey local prepaid fares.

It is also possible that local patronage might improve if the trunk service currently operating through the estate were to be routed along local arterial roads, more in keeping with the nature of a trunk service, perhaps to the benefit of both services.

4. CONCLUSION

The current environment for public transport operation in Victoria is one which places great emphasis on the cost of provision of services, rather than on the benefits provided by those services. In addition the trend, within the constraints of the multi-modal MET ticket system, is to place on bus operators, particularly, the responsibility to generate at least some of the cost of the operation of services from farebox revenue.

For operators this must mean renewed concern with balancing the method of operation, and capital and operating costs, with the revenue able to be sourced from the operation, including perhaps any Community Service Obligation (CSO) supplement which may be forthcoming.

Put another way, this means balancing the social benefit provided by a service, expressed in actual patronage and hence revenue generated, with the economic cost of the service, including profit. To the extent that environmental benefits are conferred on society at large by the service, through a reduction in car based travel, then this benefit should also attach to the revenue side of the equation, in the form of CSO payments.

At the operator level, the development of different, more flexible, and low resource use services must be a strategy employed to balance the social, economic and environmental costs and benefits of providing an appropriate level of public transport at the local level.

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