

How Service Quality delivers more– and influences demand

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The way service quality affects demand, and the importance of local understanding of the market, are crucial to taking the business forward.

When I began my career in transport back in the 1980's, with an Economics degree, my first posting after completing the Senior Management Training Scheme with the UK's then state-owned National Bus Company was in its Planning Department, developing computer models to forecast demand for the group's bus services. We used these not only to give strategic information to government about the business, but also to assist local bus company managers in planning their services. However, whilst successful in painting the broad canvas for demand patterns at a time of relative regulatory and market certainty, the models were not so useful in explaining the effect of particular service changes or market initiatives.

Our models featured four data input variables. These were scheduled mileage – a proxy for service level; lost mileage – relating to reliability; unemployment – a reflection of the economy; and 'real' fares changes (i.e. price changes after accounting for inflation). These inputs were all associated with particular 'elasticities', indicating how much passenger numbers changed when each variable changed. Finally there was a 'trend decline' – intended to take account of things such as rising car ownership and changing land use patterns that were shifting people away from public transport.

NBC's models were similar in concept to others at the time, and formed part of a respectable pedigree which continues. However, they did rather tend to reflect the concerns and expectations of the period. For instance at that time lost mileage due to staff and vehicle shortages was a particular problem, and standard mileage-based fare scales enabled a focus on general fares changes, something which is much less relevant in many areas nowadays where fares are much more market orientated. Indeed, a reading of the recent book *'Pride & Joy'* by Roger French, the chief of successful growing UK operator Brighton & Hove, shows just how important innovative, simple, yet customer-focussed and market-based pricing has been to a bus operator's success in the years since deregulation in Britain, and continues to be. Customer perception of 'value' is now recognised to be really important, and this was not reflected in the 1980s models.

General economic analysis models do remain keenly important in forecasting overall demand for bus and rail travel, and in showing justification for investment on individual projects. Indeed, an academic consortium revisited the original UK Transport Research Laboratory publication on the subject in 2004 and produced a new version (*'The Demand for Public Transport – a Practical Guide'*) to reflect both the changed institutional and market frameworks and the new technical methodologies that had emerged since the 1980s. The new book is referenced in TAG 3.15.3 ('Forecasting and Sensitivity Tests for Public Transport Schemes'), the Department for Transport's official Transport Analysis Guidance on the conduct of transport studies.

Alongside elasticities that reflect responses to changing service variables are the principles of users' generalised costs, which change with new infrastructure and the services using them. These are vital to assessing the passenger benefits of new schemes.

However, one aspect that generalised costs are not currently able to handle well is customer perceptions of service quality. Indeed, the TAG guide admits that features such as journey times and frequency “may not capture all quality aspects, especially those perceived by travellers. These quality aspects include: vehicle quality – ease of access, ride comfort, temperature and ventilation control; the availability of seats as opposed to standing space; reliability of service; image – whether a new, modern-looking mode or an existing old-fashioned mode; information about services and when the next vehicle is due; and the level of crowding”.

Whilst TAG provides some advice on how these ‘soft measures’ might be accounted for by changing the modelling parameters, actually how to do this is essentially subjective, at least for now. The DfT recognised this and commissioned research on *‘The Role of Soft Measures in Influencing Patronage Growth and Modal Split in the Bus Market in England’* in 2009. This aimed to allow these elements to be incorporated in transport assessment models, but establishing their effect is still principally an art rather than a science.

Whilst a universally-agreed quantitative effect of soft factors is still absent, what came across from the 2009 research, produced by AECOM, was that overall there appears to be an underlying fundamental requirement for good quality factors such as frequency, journey time and reliability.

In other words, these are the basic considerations which must be met before soft factors will have any positive effect. Obviously, these are particularly important for people who are new to bus use: marketing may get them to use buses for the first time (or after several decades away) but if the ‘hard’ operational features and standards aren’t there, without a Concessionary Bus Pass and time on their hands they won’t stay. Underlying demand potential is also very important. The 2009 study reported the view of one key high-quality operator (Blazefield, now part of Transdev) that soft factors can “make a good route better, but cannot turn a bad route into a good one”.

But having got the basic operational factors right (which, of course, may involve application of electronic control systems which can then directly feed through to soft factors such as customer information) which soft factors should operators go for? Well, here it comes down critically to understanding one’s market: both individual and group psychology are important. Of course, some branches of economics academia recognise all this (there is a respected *Journal of Economic Psychology*, for instance) but traditional economics has tended to ignore it. The 2009 report makes it clear that traditional economic analysis of demand needs to be complemented with the inclusion of other factors affecting behaviour: group psychological variables (factors such as attitudes, lifestyle, aspirations, peer pressure, esteem etc.), a traveller’s specific situational constraints, and just how much ‘hassle’ it is to use the bus (both physical and mental).

These all point to the importance of simple networks, ease of access to the bus network and the bus itself (including signage and visible prominence), easy-to-understand and infrequently-changed timetables and fares, intuitive information systems (websites, smartphone apps etc.), and comfort and branding that makes the traveller believe that using the bus won’t make them feel ‘out of place’.

But the relative importance of each in any specific situation is much harder to judge, and depends not only on the characteristics of the travel market in the area but also on what has gone before and on customers’ current expectations and on how the bus service is currently perceived. The in-depth interviews carried out in the 2009 study, for instance, identified that travellers who have a car available perceive the bus as more convenient where parking is difficult or expensive and / or where congestion is bad.

The study also carried out an extensive literature search, which showed a range of different methodologies for calculating the effect of 'soft factor' improvements, and much conflicting evidence on the relative importance of different factors. Included in this literature search was the 10% Club's "Routes to Revenue Growth" 2006 report, which examined nine case studies involving either route specific or network changes: yielding growth in patronage of between 3% and 30%. Some related to Quality Partnerships, others were independent of them: each was based upon existing routes or networks and each reported patronage growth against a background decline.

The evidence in the 2009 study recognises that demand for different types of information varies by segments of society. One particularly important point is that few attributes are introduced independently of other 'soft' or 'hard' interventions, so determining the actual effect of each soft factor proves difficult. Introducing a package of measures also has conflicting effects: there may be a limit to the passenger growth that can actually be achieved so that there comes a point at which adding additional 'soft' factors will have no significant effect on passenger numbers. However, by contrast, there may also be a cumulative effect in that in some places only in combination do the individual measures (both 'hard' and soft) give a positive effect on numbers, and even then it can take up two years for the full effects to be appreciated. Herein lies the skill of commercial bus management: having a correct and informed 'feel' for the local market to understand what package of measures will work, and then knowing when to refresh the product further.

In conclusion, knowing the market is essential for those engaged in any sort of service planning or modelling, and is particularly important for new kinds of provision like upgraded routes or Bus Rapid Transit. Here higher-quality, compared with conventional services, including many soft measures, is a key characteristic of the whole offering: and the interface between price and the quality of the overall customer experience is what determines passengers' perceptions of value.

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* Copies of the Ten Percent Club report "Routes to Revenue Growth" (ISBN 1 899650 39 3) are still available from Landor Books price £165. <http://www.landorbooks.co.uk>