

*Creating cleaner, healthier, liveable towns and cities no longer choked by congestion and poisonous air from excessive car use requires **bus networks designed for organic growth and modal shift.***

1. Background

A positive bus strategy requires **significant commitment from the local transport authority to create a benevolent bus operating environment** but ensuring that leads directly to reduced traffic congestion, improved air quality and enhanced connectivity requires a **well designed, well executed bus product.**

This note serves as a **design guide in structuring individual routes and networks which deliver organic growth and modal shift** in the context of Enhanced Partnerships.

2. Route design

Route alignments should always be designed to **be as direct as possible** ensuring that travelling by bus should follow a similar, or even more direct, path than would be covered in a car trip.

Wherever two or more routes cross there should be **clear intuitive signage to support any customer interchanging** and, where material levels of interchange are expected, suitable well cared for infrastructure should be in place including covered walkways, shelter, seating and live tracking of connecting departures.

Ticketing, pricing and payment should be designed to facilitate, not frustrate, interchange.

3. Timetable

Turn up and go

Wherever possible, timetables should be 'turn up and go' of at least 6 buses per hour.

Where 'turn up and go' timetables are justified in the daytime, **evening frequencies should be maintained at at least 3 buses per hour** and, ideally, **service should continue through the night** even if the frequency drops to hourly.

This ensures that **passengers can travel freely on the route at any time**, not feel the need for access to a car or taxi and can commit to bus as a mode they can trust.

The **route should be costed holistically** by operators, **accepting that certain time periods or trips may not be individually profitable** but remain necessary to maintain the integrity of the whole product offering.

Urban clock face

Where 'turn up and go' cannot be justified, **daytime frequencies should be delivered at consistent intervals** of 12 minutes, 15 minutes, 20 minutes or 30 minutes.

In an urban environment, it is highly unlikely that anything worse than 30 minutes would be a viable offer consistent with generating growth.

Evening frequency should also be maintained at at least every 30 minutes.

The **option of operating through the night should always be positively considered** based on an assessment of any key points of overnight demand from late or early shift workers etc.

Targetting specific late night or early morning journeys for shift starting or shift ending times at sites of significant employment or other major traffic generators should always be positively considered.

Alternatively, **DRT options should be considered for evening and night services on lower frequency daytime routes.**

It will be **very hard to build a positive culture of bus use** and reduce car dependency when **a generally popular urban route can be switched off altogether for significant periods of time.**

Urban Demand Responsive Transport

A positive culture of bus use and modal shift is not consistent with a significant proportion of short urban trips requiring access to a car.

Adding a demand responsive capability to any urban network which can sit as a safety net under the conventional bus network **reduces car dependency.**

Again, the cost of that safety net may be greater than the direct revenue it earns but it may very well be that the **overall holistic commercial performance of the**

bus network will be stronger once people believe they can depend on it at any time of day or night.

To be a popular growth business requires a focus on overall customer service levels. Finding ways to eliminate car dependency is a key function of achieving modal shift and developing the bus as a long term viable consumer product for everyone.

Longer Distance Commuter Services

Longer distance commuter routes into urban areas require special design criteria if they are to generate modal shift and organic growth.

Commuter routes into significant towns or cities providing employment, entertainment, educational or retail facilities need to be **well branded and promoted with simple, easy to understand, routes, timetables, real time and disruption information, fares, ticketing and payment.**

The commuter catchment at the residential end needs to be well thought through to maximize access with good quality waiting facilities whilst the timetable should be well aligned with the key purposes of travel.

First journeys in the morning need to be timed to allow workers to arrive in good time for the start of their working day in hospitals, factories, offices, retail outlets. Think of the detail and seek to avoid messy compromises which do not suit anyone.

If the town or city involved has vibrant evening attractions including cinemas, restaurants, theatres, concert halls etc, ensure there are well timed departures to take people home in the evening – both those being entertained and those working in the relevant facilities.

Liase with employers, retailers, entertainment providers etc to **create 'joined up' experiences, marketing incentives and discounts.**

Bake the service into the heart of the community where the customers live.

If, however, it is a town which naturally dies at 6pm, don't waste energy or resources serving it after the workers go home.

Interurban services

Interurban services linking towns and cities can serve the same purpose as commuter services but with added potential.

The longer an interurban route, the greater its potential.

They generate 'churn' with boarding and alighting happening frequently and, whilst the bus might never be jam packed full, they can generate more revenue, profit and sustainability than a commuter route with a few busy peak journeys full of students and workers.

It is **nearly always worthwhile taking an interurban route forward into the next town.**

Think routes like the X5 originating in Oxford and terminating in Cambridge. Very, very few people make the long through trip from one end to the other but linking Oxford, Bicester, Buckingham, Milton Keynes, Bedford and Cambridge delivers an awful lot of trip options.

However, **the timetable requires careful design to ensure that it is possible to board at any point and be able to arrive at any other point before 8am to start work, before 9am to start school or college, to arrive for a morning's shopping at 10am, get back from school or college mid afternoon, from work early evening, from the theatre or dinner around 11pm etc.**

It might make sense to break a standard 30 minute or hourly frequency at the beginning or the end of the day to simply hold the last bus by 15 minutes or so to ensure that it captures the last of the late night activity instead of slavishly maintaining the symmetry of the timetable.

However, do so with care and clarity of purpose ! And don't do it for trivial reasons through the core of the day.

4. Reliability and Punctuality

All of the effort described above to craft timetables designed for growth will **only bear fruit if the service delivered to customers precisely and consistently matches the promised timetable.**

That will require **high levels of driving staff retention and engagement** and running times on **timetables informed by extensive data analysis** on road traffic conditions and all of the other variables which can impact upon punctuality and reliability.

The ability to construct precise, accurate timetables has been transformed in recent years by the use of Big Data, Artificial Intelligence and Machine Learning by organisations like www.cityswift.com

5. Finding growth opportunities

How do you find growth opportunities in an existing bus network ?

Follow the volume

The best place to start looking for organic growth and potential modal shift is to look at current demand by route.

Existing high demand routes are always the ones with the greatest growth potential. Look to build on success through investment in more frequency, service quality, marketing and pricing activity, bus priority or infrastructure investment, developing partnerships with other stakeholders, replicating the characteristics of existing successes.

It is amazing how many network planners and designers obsess with the bad rather than the good.

Putting planning time and effort on those already strong routes with volume produces results whereas **obsessing with trying to improve low volume routes generates little return** unless there are blatant weaknesses in how they are structured.

Audit Routes against the criteria in Section 3

Conduct a full review of the timetable on each existing route against the criteria on timetables set out in Section 3 above.

Update your view of the journey attractors

Places of employment, education, health, entertainment and retail draw people to them and the make up of those in any area changes gradually and doesn't always get noticed and the bus offer refined to take advantage of new developments.

Responding to changes in demand can also generate growth and modal shift.

Those changes can involve new physical attractors or lifestyle changes encouraging people to shop more on Sundays etc.

Make sure you update your network offers to meet changes in the physical structure of the area or the lifestyles of your customers.

Update your view of the journey generators

Populations in towns and cities evolve and some evolve faster than others.

Towns with big student populations, for example, see customer turnover of up to 40% per annum simply because students move into the area for 3 years and then move on.

In those high turnover locations, marketing and promotion needs to be more dynamic.

In low turnover locations, complacency can set in and we don't notice slow, subtle changes in lifestyle or location of attractors eroding demand.

As well as finding new users, be careful of taking current users and their needs for granted and regularly refresh your assessment of the bus market and your offer.

Watch the crowd !

The crowd takes many forms.

We all like busy buses because busy buses make money but your buses can be too busy, too !

You can't generate organic growth and modal shift if you don't have room for that growth.

If you want, say, 5% growth on a busy route, you need to invest in creating space for that growth. Proper inviting attractive space – not simply cramming a few more standees in at the peak.

Give me space and I will come ! Give me a crush and I won't !

Roads get crowded, too, and **any location with acute traffic congestion is a growth opportunity as there is clearly demand to divert to a good quality bus option.**

With a proactive local transport authority, partnership options to invest in delivering modal shift in congested towns and cities always exists.

And trains get crowded !

There are **many examples of attractive, profitable growing long distance commuter bus services paralleling crowded rail lines.**

Buses can be attractive to commuters if they **pick up closer to home, deliver you closer to your destination, provide you with a guaranteed seat and cost less than the train.**

Passengers transferring from rail to bus will also **free up capacity on the train to generate more transfers from car to rail.**

The best way to generate modal shift from the car is to maximize the alternative options. **The notion that, where a rail line exists, there is no need for a bus option has been proven wrong countless times.**

One of the UK's busiest bus routes is the Oxford Tube operating 24 hours per day between Oxford and London alongside two equally busy separate rail lines.

Customers choose to travel by bus in that environment for a host of logical reasons.

Bus options should exist on all busy commuter routes and will increase modal shift to a greater extent than a rail line alone.

Embrace KickStart Schemes

When you either introduce a totally new bus route or materially increase frequency on an existing one, you immediately incur the full cost of that change BUT the patronage growth to fund those costs will come much more slowly.

If you increase a service by 100%, the additional costs of that increase land on day one whilst the increased **demand creeps up much more slowly**. At best you might get 40% of the demand by the end of year one and only reach 100% after 3 or more years.

Clever marketing and pricing can accelerate that process but, if you want organic growth, you **need to invest upfront and be patient for the longer term payback.**

Buses benefit from being much cheaper and quicker to deliver than rail lines and metros but don't expect the miracle of instant demand.

Operators and transport authorities should **embrace KickStart schemes where the gap between cost and revenue in the early days of new routes and initiatives is shared** and expectations on the demand settling at a new level are realistic.

Invest in bus priority

Another investment to be shared is in giving the bus the space to deliver to its strengths.

One bus on a radial corridor into any town or city can take 75 cars off the road.

That is the removal of an awful lot of pollution, a lot less cases of asthma and heart disease amongst the young and the old.

To make that magic happen, the **bus needs to have freedom of movement to be truly competitive and give 75 people sharing one vehicle the priority they deserve and encourage more to do the same.**

The **cost of those priority measures should be shared between the Transport Authority and the operators.**

The Transport Authority will reap the environmental gains of calmer streets and improved air quality whilst the operators will enjoy revenue growth and cost reductions through the faster operating speeds.

The Pandemic Effect

There is no doubt that the COVID 19 **Pandemic has had a shock effect on bus demand** and we will reach the **second half of 2022 with bus demand across the country emerging at somewhere between 85% and 105% of the 2019 run rate** depending on geographic, demographic, political and operator performance factors but we **should be able to deliver ongoing growth going into 2023** if we do the right things and Government, Transport Authorities and Operators work well in partnership pursuing the common goals of *creating cleaner, healthier, liveable towns and cities no longer choked by congestion and poisonous air from excessive car use with bus networks designed for organic growth and modal shift.*

6. Mission of busreinvented.com

If buses didn't exist, someone, somewhere would have the brilliant idea of inventing a clean, simple, easy to use consumer product, delivering **mobility as a core part of a modern city lifestyle without the need to own a car** a customer experience fit for the digital generation and a million miles from a traditional municipal transport department providing social transport of the last resort.

That transformation is the mission of busreinvented.com

If you feel you would benefit from our expertise in supporting your drive toward organic growth and modal shift, contact robert.montgomery@busreinvented.com

busreinvented.com

Urban bus and mobility strategy and execution

UK | Europe | Middle East | Australasia

busreinvented.com

Urban bus and mobility strategy and execution

UK | Europe | Middle East | Australasia
