



A radically revised customer proposition. Core urban bus corridors need to be marketed as a fashionable consumer product for better city living

Bold commitment to switch to all-electric operation on core, high frequency routes by 2025?

Bold highway priorities to offer buses a fast track into city centres, with a mechanism to share financial benefits with local authorities

A simple, high profile network of direct, fast, frequent arterial bus routes, operating 24 hours per day

Flexible timetables that respond to fluctuations across the week or season

A radical simplification of pricing, payment and ticketing. All cash and retailing transactions taken away from the drivers on core routes

BUSreinvented!

Technology-enhanced, high frequency, urban bus corridors can combat poor air quality and traffic congestion in the UK - but it will require a willingness to work constructively together



Robert Montgomery

▶ The combination of deteriorating air quality and rising traffic congestion levels in the UK's major cities is not sustainable and will, inevitably, drive change in how people

commute and move around. The bus can play a key and growing role in that change as the leading solution along key arterial corridors into and out of major cities where the ability for up to 100 people travelling in the same direction to share one vehicle will be the most efficient, least polluting ride sharing option.

However, in the world of Apple, Google, Uber and Amazon, the bus will need to adapt and become much more high tech, much

more flexible, much more environmentally friendly, much more customer focussed, much more efficient, much more like it is a product of Apple or Google and much less like a traditional city bus.

Achieving that transformation will require a different mindset with a focus on:

- ▶ differently designed networks;
- ▶ a dramatic increase in productivity and

“The bus will need to adapt and become much more like it is a product of Apple or Google”

efficiency;

- ▶ a step reduction in operating costs;
- ▶ a step increase in capital and infrastructure investment;
- ▶ more flexible employment practices;
- ▶ a radical simplification of pricing, payment and ticketing;
- ▶ much improved information and customer communication;
- ▶ deep, enduring partnerships between private sector bus operators and the public authorities which provide the track on which their buses run and between those same operators and other private sector players engaged in urban mobility.

The urban bus reinvented for tomorrow's world!

“The cash from the additional demand should not just lie where it falls”

Change

Buses are big!

Urban double decks can carry up to 100 people but, for a whole variety of political, cultural and historic reasons, actual outturn load factors in urban bus networks across the UK are sub-optimal and fail to exploit the full commercial potential of that capacity.

If the bus is to truly play its role in combatting air quality and congestion, there needs to be total focus on designing truly car competitive networks which people will happily choose to use as a comfortable, attractive, quick, direct route to their destination.

The backbone of public transport in major cities should be a simple, high profile network of direct, fast, frequent arterial bus routes operating 24 hours per day as an essential core part of the city's infrastructure.

With a frequency of at least every 10 minutes between 7am and 7pm, at least every 20 minutes between 7pm and midnight and at least every hour between midnight and 7am, every single bus on the route should follow precisely the same alignment with no deviations or exceptions.

They should be boldly promoted as a core branded network with distinctive, consistently branded vehicles and associated infrastructure and a clear, simple network map.

Buses fulfil a wide range of transport requirements in towns and cities across the UK but fail to capture their fair share of demand and growth on key arterial routes by those services being starved of investment, subsumed into the complicated spaghetti of lower frequency, lower demand routes and focused on the wrong objective. The key arterials are one product for a very specific market and the other bus products in the wider network also need to be addressed and delivered in a new way through a parallel, but different, programme of change.

Bus operators need to be bold about building big, car competitive core routes for big buses and promoting them well!

Priority

Big, bold bus routes deserve big bold highway priorities!

If operators are prepared to invest heavily in delivering car competitive, comprehensive, frequent, direct big bus routes, highway authorities should be equally bold in giving

them a fast track into city centres.

The better the priority, the bigger the bus loads, the higher the frequencies, the greater the demand and the less need or desire for people to drive their own car.

That needs close, long term, genuine partnership working between public sector local authorities and private sector bus operators to agree just what it takes to ensure those big buses with their big load factors only slow down and stop to pick up and set down customers.

It also needs a recognition that public sector investment in bus infrastructure and priority measures producing a payback to private sector bus operators through higher demand and revenues, faster operating speeds and reduced costs needs 'benefit sharing' methods in place as part of a partnership approach.

The cash from the additional demand should not just lie where it falls but be part of a wider, independent analysis of all the costs and benefits arising from big bus routes boldly delivered with big investments in big priorities.

Local authorities and bus operators need to build big, bold, positive partnerships founded on sound economic analysis of their dynamics!

Productivity and Efficiency

Building core city arterial networks will open up big opportunities for operators to exploit technology to deliver a step change in operating costs.

Traditionally, bus operators deliver precisely the same timetable every day Monday to Friday.

They do that because, well, they have always done that and that is the way it is done!

Not any more!

Demand for core bus services varies by the day and by the season and varies again due to 'events' but, come what may, traditional bus operators stick to the same timetable virtually every day.

Responding flexibly to fluctuations in demand across the week or due to the season or due to events is only done in very exceptional circumstances because of the logistics involved in rescheduling and an employment culture wedded to five-day, 40 hour weeks and traditional rostering practices.

If Google or Apple or Uber ran buses...
...data would drive the schedule, tech would deal with the logistics and people would be employed more flexibly.

There are big cost savings for bus operators in labour, fuel and the capital cost of vehicles by using data and technology to deliver big urban bus routes to a different model.

Using data, they could allocate every one of the 365 days of each year to a specific demand pattern and flex frequencies on the busiest services within a 10-minute time band. Moving from a five-minute frequency on a busy Friday in November to a 10 minute frequency on a quiet Wednesday in August cuts fuel and labour costs in half and fuel and labour account for 65% of an operator's total expenditure!

Faster running speeds, too, on that quiet Wednesday in August would make the labour saving even more than half!

Flexing the frequencies on different days of the week would impact on vehicle requirements allowing routine servicing to be scheduled on quieter days cutting the total size of the fleet. >>>



Building big high frequency urban bus routes will open up a whole new frontier of cost savings.

Flexing frequencies by the day and by the season makes allocating work to drivers and servicing and maintenance support staff more complicated and wouldn't have been practical in the days of manual scheduling of buses, staff and fleet maintenance but technology has moved on and is now capable of much more dynamic and flexible scheduling.

Creating up to 365 different scheduling patterns, as opposed to the current three, is a technology challenge well within the capability of technology businesses to supply.

Cutting those unnecessary costs could fund cheaper fares delivering greater demand or, perhaps, justify a step increase in investment in technology and infrastructure.

Big choices which need to be made!

Big investments

Regardless of how buses are powered, their high load factors on major city corridors guarantee that their customers total impact on the city's air quality will always be less than if they drove their own petrol or diesel cars.

Even relatively old Euro 2 or 3 diesel buses will have a better effect on air quality per customer journey than a new petrol or Euro 6 diesel car through the ride sharing effect.

All new bus investments, as a minimum, are now Euro 6 and, therefore, switching commuters to bus will increasingly improve air quality. However, there is a powerful argument for an accelerated switch to full electric for all buses deployed on core high frequency urban routes. They will be ultra clean, ultra quiet, ultra smooth and cheaper and simpler to maintain.

In the short term, the capital cost will be materially higher and there will be operational challenges around vehicle range and charging.

We are now close enough to seeing capital costs fall, electric vehicle reliability improve and battery range increase to take the bold step of pressing the button on the transformation of core high frequency urban bus routes to all-electric operation over, say, a seven-year period by 2025.

Setting that target and calling a halt to investing in new diesel buses right now for core urban networks will act as a catalyst to make manufacturers focus even more on resolving the last barriers to electric conversion.

Setting that bold target should also reinforce the case for big bus priorities and the costs should be factored into the calculation of 'benefit sharing' within urban public/private sector partnerships for the delivery of core bus services.

Customer proposition

It has been over 50 years since using the bus in major provincial cities in the UK has been a core part of city lifestyle and bus travel a popular consumer product.

The above steps should be accompanied by a radically revised customer proposition.

Core urban bus corridors need to be marketed as a fashionable consumer product for better city living with a completely different approach to pricing, payment, ticketing, information and the integration of bus travel with all other essential mobility products.

Those big, bold public/private sector partnerships in the major cities need to embrace more than just buses but bring in suburban trains, trams, cycle hire, car clubs, taxis and private hire cars into bigger city mobility partnerships offering integrated information, ticketing and payment options designed to reduce dependence on private cars.

On payment, it is time to take all cash and retailing transactions away from the driver on core, high frequency urban corridors.

Journey speed is critical to deliver serious modal shift and, even if only 15% of bus boardings on those corridors involve a ticket purchase from the driver, that still slows the journey for everyone.

That is simply a bold management decision for operators to take.

On pricing, it is time to radically simplify the options with a single flat charge for an internal city journey coupled with prices for a day, a week or a month's unlimited travel on packages of urban mobility products including those of one bus operator, all bus operators, all bus and tram travel, all bus rail and tram travel and wider subscription packages including

"It is time to take all cash and retailing transactions away from the driver on core, urban corridors"

A fast, high quality service. The success of the Vantage-branded routes in Greater Manchester could be replicated elsewhere



cycle hire and taxi use etc.

That is another bold management decision for operators to take and then work in partnership with the wider mobility industry and public sector to create the necessary packages and products and commercial arrangements around them.

On ticketing, customers need to be able to buy the product, package or subscription they choose from a wide range of convenient retailing outlets, websites, Apps or machines, have it loaded onto a mobile phone, smartcard or other device and present that to a reader or flash to the driver on boarding.

With a flat single fare in place on the branded core high frequency arterial network, there is no need to touch off.

Providing the commercial decisions on payment, pricing and partnership have been taken, ticketing becomes simply a matter of



“Only radical thinking and bold action will bring it to fruition”

routes and for the local authorities to deliver appropriate priorities and infrastructure through those partnerships.

Operators already use extensive technology to plan routes, schedule buses and crews and allocate buses and drivers on a daily basis alongside separate fleet maintenance scheduling technology. Enhancing those technologies and linking them with other technology applications and data sources will facilitate major improvements in productivity and efficiency.

Operators can sensibly review their internal labour practices and agree more flexible arrangements with their employees compatible with the more flexible service delivery arrangements particularly since they will generate greater future security of employment.

Making the move to all electric operation is clearly an operational and commercial decision for the bus operators but, within the context of radical, long term partnership agreements, innovative funding and risk sharing methods could play a part.

All of the customer proposition issues can be dealt with through a deep, enduring partnership between local authorities, private sector bus operators and other private sector parties.

This is not about the mechanics, the commercial agreements or the technology but about the willingness of private sector bus operators and local authorities to work constructively together to truly transform and grow urban bus use. ■

ABOUT THE AUTHOR

▶ Robert Montgomery has worked in the bus industry in the UK and Ireland for 47 years, the last 34 years in senior management roles, the most recent as Managing Director of Stagecoach Group's UK Bus Division. He is currently working with partners on developing public/private sector partnerships in urban areas and with technology suppliers on enhancing the technology support available to operators. robert.montgomery@busreinvented.com

technology.

Information needs to be clear, simple, dynamic and integrated and becomes an issue for the Mobility Partnership in each city, ideally through a dynamic website, App and other communication materials but with data open to other commercial information providers under license to ensure responsible use.

That requires collaboration, creativity and technology to deliver.

The challenges

There is no doubt this is a challenging agenda but the prize for communities, local authorities and private sector bus operators is huge.

Only radical thinking and bold action will bring it to fruition.

Everything on that agenda is simply there to be done - none of those challenges are impossible if the will is there to make them

happen.

Delivering each of the steps outlined above can be achieved as follows...

It is entirely within the power of the existing private sector bus operators to restructure their networks in major cities to create direct, fast, high frequency routes along core arterial roads into city centres.

This will involve ‘taking a brick out of the wall’ of their wider urban networks but this will challenge them to be more innovative in how those lower frequency, lower demand routes are delivered since they, too, have growth potential if radical change of a different type is considered.

It is within the power of those operators to enter into partnership agreements with local authorities to develop common branding and joint promotion of consolidated networks of direct, fast, high frequency