

|Integrated Transport: The potential of Bus Rapid Transit

Emerging Trends, Model Cities and Major Challenges: Answering BRT's Biggest Questions

Early this year, the BRT Center of Excellence launched a new book called “Restructuring Public Transport through Bus Rapid Transit.” The new resource provides researchers, students and decision makers an overview of how cities can effectively implement BRT in a variety of contexts to solve local transport challenges. “The goal of this book is to illustrate the opportunities BRT provides along with our research, addressing the challenges of meeting this potential,” said Laurel Paget-Seekins, Director of Strategic Initiatives of the Massachusetts Bay Transportation Authority. To learn more about BRT trends, model cities and challenges, TheCityFix talked with the editors of the book, Juan Carlos Munoz and Laurel Paget-Seekins. Drawing on their work, the two offered us their insights on some of the major questions facing BRT moving forward.

What are some of the emerging trends in BRT across the globe?

In this book we are not making the case for BRT; instead we are exploring its potential. Bus Rapid Transit can play a significant role as part of integrated public transport systems and is gaining support around the world in both developing and developed cities. BRT has shown its ability to carry large passenger

volumes, while retaining the flexibility of bus service, with low capital costs, fairly short implementation times, and significant greenhouse gas emission reductions.

Initially BRT was conceptualized as Metro operation with buses. The goal was to achieve the great level of service usually offered by Metro, but on the surface. This service is often characterized by being fast, frequent, high capacity and reliable. And this takes us to the Metro versus BRT question. Is BRT a substitute of Metro? Sometimes yes, but most of the time not. These are modes that can complement each other really well. While Metro can provide fast long distance travel due to very limited stops to serve high demand volumes, BRT can exploit the flexibility of buses that can shift between corridors providing non-stop multi corridor trips. Buses can also overpass providing express services. Buses can enter and leave local neighborhoods and freeways, and so on. We need to be more innovative when thinking about buses. Fare integration involving multiple modes (which we see as a growing trend worldwide) provides much more opportunities for network design that we would have if passengers were expected to reach their destinations through a direct service.

So BRT offers the potential to create an efficient network design, with room for flexible service options like express services and inter-corridor services. Recently, some cities have been experimenting with open BRT corridors in which buses enter and leave the corridor into local neighborhoods providing a direct trip and avoiding transfers. However, open BRTs are much more difficult to coordinate and operate less efficiently than a closed corridor in which buses never leave it. Even

though open BRT corridors are gaining momentum, the question regarding under which conditions they are preferable is still arguable.

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A third trend we would highlight is the need for BRT to add value to the urban context. In many cities BRT is seen as an urban scar dividing neighborhoods which contradicts its mission of improving accessibility and mobility. Recently, BRT corridors have been part of international architecture contests, which should lead to more attractive stations, fewer conflicts with built heritage and more space for non-motorized transport modes and social activities.

**What’s an example of a city that has used BRT effectively?
What can we learn from it?**

We tend to look at Curitiba, Bogota and more recently Guangzhou as the iconic and symbolic Bus Rapid Transit systems. They have been pioneers of this new way of thinking and structuring urban buses. But this is a young industry and as such still has much to improve on and learn. We think that Rio de Janeiro is an interesting example to learn from. They are building a network of four corridors that interact with bikes and Metro. And these corridors show the flexibility of the BRT concept in action. While Transoeste was built in the middle of

an expressway, therefore providing fast trips with few interruptions, Transcarioca sneaks into local neighborhoods displaying a more subtle intervention, adding overpassing lanes only next to stations. Buses in this corridor enjoy not only segregated paths, but also specific infrastructure which has been built to overcome particularly congested areas. Soon we should also learn from the inauguration of Transolimpica which should be ready for the 2016 Olympics in Brazil. Finally Transbrasil, built in the middle of a highly congested freeway, is expected to provide an unheard capacity of 60,000 passengers per hour in each direction. BRT in Rio has received very high approval ratings from its users and its level of service should improve once the network is ready to provide a more complete connectivity.

Finally, this month Yichang received the 2016 Sustainable Transport Award because of its impressive new BRT corridor. It is good to know that the BRT concept is still evolving to meet users and cities expectations about its capacity to provide high quality mobility and accessibility showing high safety records and reduced urban impact.

What are some of the unique challenges facing BRT in developing countries?

Funding and affordability are always a problem in developing countries. And we know we will not attract car drivers towards public transport through low fares, but through high quality of service instead. To provide this service, the funds gathered through fares will be insufficient to provide such service. Thus,

subsidies are needed. The developing world must realize that these subsidies are needed not just for equitable reasons, but because it is efficient to do so. In the developing world we should try to allocate some of the funding into low income people that would consider high quality public transport systems unaffordable otherwise.

Another important challenge is to avoid a disconnection between the architecture projects that define where each of the stations will be built and their associated design, and the operational plan that will give life to this corridor. This is a big mistake when the corridor is expected to handle a large volume of passengers and buses as is often the case in developing countries. In this case the operational plan should consider a mix of different limited stop services and regular services visiting all stops. This scheme is used mainly to increase the capacity of the corridor, otherwise limited by the capacity of stations. But this operational scheme will therefore determine the rate at which buses will visit the stops and the number of passengers boarding and alighting at every station. So it is the operational plan defining how large each station should be and how many passengers should fit in each of them.

Another key aspect that needs to be addressed to improve the quality of service is comfort. The developing world must stop designing service based on 6 passengers for every square meter. This figure is the average across many buses and many areas inside buses. This is the best recipe for long term failure.

Finally, the developing world lacks capacity in the public sector with the knowledge to design and operate, while at the same time manage contracts with private operators. And very often in

these cities the government has not played this regulatory role before, so they face a high chance of making important and expensive mistakes.

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