

Bus-Rapid Transit Systems as Cost-Effective Transportation Alternatives: The Case of TransMilenio, Bogotá

Context

Driven by economic growth and rural displacement, the population of the city of Bogotá, the capital of Colombia, grew dramatically throughout the 1990s. This rapid growth put a strain on existing transportation services, resulting in heavy congestion, excessive travel times, and elevated levels of noise and air pollution. Inner city trips—averaging an hour and 10 minutes—took place mainly by private vehicles that used 95 percent of available road space and were involved in over 52,764 accidents in 1998. Bus systems were privately owned and poorly run, with lax safety standards and uneven service routes, which discouraged the use of mass transportation. Furthermore, competition between different bus operators resulted in an oversupply of bus seats that further contributed to issues of congestion and air pollution.

Development Challenge

The challenge for the city of Bogotá was developing a public transportation system capable of providing accessible, affordable, and environmentally friendly services in order to combat congestion, reduce pollution, and meet the needs of its growing population.

The Intervention

In 1999, the city of Bogotá created a new public company called TransMilenio S.A., tasked with the implementation its transportation strategy and the creation and management of a new bus rapid transit system (BRT) of the same name. The system was designed to improve travel times, reduce congestion, and lower pollutions levels across the city. Learning from the implementation lessons of other BRT lines in the region (notably in Quito, Curitiba, and Mexico City) the city commissioned feasibility studies that created buy-in for the new bus system and positioned TransMilenio as a financially viable component of its new mobility strategy. They argued strongly in favor of this option due to its lower capital investment and maintenance cost in comparison to light rail or metro systems. Working with the existing Instituto de Desarrollo Urbano (the Institute of Urban Development—IDU), the national Ministry of Transportation, and local bus operators, the Mayor's Office of the city of Bogotá launched a public-private partnership designed to modernize and improve its mass transit systems. Now, over a decade in operation, TransMilenio covers 112 kilometers throughout the city, servicing over 2.2 million passengers a day. It is credited with a reduction of 92 percent of traffic deaths in areas where it operates and a decrease of 40 percent of air pollutants across the city.

PROJECT DATA

SECTOR:

Transportation

DEVELOPMENT CHALLENGE:

High congestion and poor public transportation systems in Bogotá, Colombia

DELIVERY CHALLENGES:

Stakeholder engagement, Financing mechanisms, Overambitious objectives

COUNTRY:

Colombia

PROJECT DURATION:

1999 to 2006

PROJECT AMOUNT:

US\$340 million

REGION:

Latin America

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Delivery Challenges

This delivery note analyzes the key challenges the project faced during implementation and examines how they were overcome.

1. **Challenges creating stakeholder consensus:** Satisfying the needs of all stakeholders was a complicated proposition for the mayor's office. Aligning the expectations of the urban planning department, national regulators, and the bus company owners and bus drivers who rented from these companies was politically fraught and time consuming. Obtaining buy-in from existing local transit providers was particularly challenging due to their distrust of fellow operators, whom they regarded as competitors, and to instinctual opposition to any regulation that could impact their profits. In addition, local government officials were unfamiliar with, or skeptical of, BRT systems and expressed interest in more traditional heavy rail systems, which were viewed as more modern and signifiers of a "world class" city.
2. **Lack of operational funding mechanisms:** Despite a lower price tag compared to other transportation systems, Bogotá did not have the capital to fund the creation of TransMilenio. Like many other cities in the developing world, the mayor's office had to contend with the national government local elected bodies to obtain funds through taxes and loans to finance sizable infrastructure costs. In addition, there was no regulatory framework for a bidding and contracting system to regulate the concession of operating contracts for ticketing and route management.
3. **Overambitious objectives:** Providing service quality at high capacity is an ongoing challenge for TransMilenio. Numerous protests, some violent, have taken place since 2002 due to increases in fares and complaints of poor service.

Addressing Delivery Challenges

The following steps were undertaken to mitigate the delivery challenges:

- **Stakeholder engagement:** Reaching out early in the planning stages to the different transportation stakeholders in the city (bus operators, Urban Planning Office, Ministry of Transport, Municipal Governments) enabled the mayor's office to create strong buy-in for the creation of the TransMilenio BRT system. International cooperation and knowledge exchange activities with regulators from cities that had successfully implemented BRT systems were key to explaining the advantages vis-à-vis other systems. An objective cost-analysis and timeline for the project also provided political incentives for local officials eager to show new projects in one election cycle. The inclusion of local bus operators proved to be particularly critical in preventing protests, creating a fair pricing system, and connecting underserved routes. In addition, strong coordination with the different actors was crucial in raising awareness of the program to the larger public, complementing extensive media campaigns, and creating momentum for its implementation and use.
- **Financing mechanisms:** Unlike many public transportation systems around the world, the TransMilenio system is run without any operational subsidies. Operating as a public-private partnership, it created an efficient organizational arrangement, in which the public sector provided infrastructure investments financed by fuel and local taxes, while the private sector managed its bus fleets, fares, and ticketing systems within an agreed upon framework. Having a shared vision with all government stakeholders helped the mayor's office pass new fuel taxes that provided over a third of the early capital requirements for the BRT infrastructure. In addition, the implementation of a competitive and open bidding system prevented favoritism and encouraged competition. The arrangement provided an incentive for private sector operators to expand services, while moving the bus market from small independent operators to larger, more formal enterprises competing for concessions. The result has been a financially sustainable, safer, and more efficient public transportation system at a fraction of the cost of similar systems.
- **Overambitious Objectives:** Despite the TransMilenio's many achievements, in recent years the system has become a victim of its own success. Population growth for the city of Bogotá has outpaced the creation of new routes and stations, while low frequency of connecting peripheral buses has increased wait times during rush hour. In the first months of operation, over 90 percent of surveyed city residents expressed praise for the system, but more recent surveys show approval by much lower margins. The government of Bogotá is aware of these challenges and has begun adding extra buses along its busiest routes. The national government has also expressed support for the disbursement of additional grants to continue the expansion and upkeep of the system.

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