



CASE STUDY

Shifting people out of cars *Curitiba, Brazil's transport and zoning policies*

Key points

- *The bus rapid transit system, first introduced in the Curitiba, has been replicated across the world as a successful mode of public transport.*
- *Transport systems can be used to direct where city growth takes place rather than reacting to unmanaged growth.*

There was a problem...

From the 1950s to the 1980s, cities across Brazil experienced rapid growth with the migration of people from rural to urban areas as a result of agricultural mechanization. Curitiba, the capital of Paraná State, experienced some of the largest growth, with its population increasing at an estimated 5.7 per cent per year. The uncontrolled population growth provoked the need for more effective city planning.

What was done?

The city constructed a consolidated public transportation system to move people easily throughout the metropolitan area and its surrounding municipalities. The city planners recognized that a transportation system would serve as the foundation for development and growth of the city. The city planned the transit system with the intent of dictating growth in the city rather than allowing the rapidly growing population to create inefficient growth.

Progress over the decades started with:

- **Master plan allowing for integrated urban planning with transport:** In 1966, the city planners developed a master plan that established guidelines to restructure the city's development to accommodate urban expansion. The Curitiba Master Plan, adopted in 1968, focused on strict controls on urban sprawl, a reduction of downtown traffic, preservation of the city's historic district and a convenient and affordable public transit system. The plan included new road design to minimize traffic and a series of landscaped parks. In the 1970s, the city implemented zoning laws to direct linear growth by attracting residential and commercial density along a mass transit system.
- **Good quality mass transit system:** Curitiba became the first city to implement the bus rapid transit system.
 - 1) Extensive networks of routes serving varying purposes:** Curitiba's transportation system is made up of three complementary levels of service that include feeder lines, express lines and inter-district routes. The feeder lines pass through outlying neighbourhoods, making the system easily accessible to lower-density areas. The feeder lines connect with the express system along the structural corridors. The express system operates like a surface subway system, transporting large numbers of passengers to locations along the structural corridors. Finally, the inter-district routes allow passengers to connect to the axis of the express lines without going into the city.
 - 2) Fare system:** The Integrated Transport Network allows transit between any points in the city by paying just one fare. A single fare covers the whole city, encouraging the use of public transportation.
 - 3) Quality infrastructure:** The physical stocks, such as buses and stations, are designed for users' convenience; for instance, by setting up shelters in conjunction to the bus stations and by upgrading to extra-wide doors of the buses for speedy loading.

- **Support for social welfare programmes:** Curitiba also faced dilemmas with what to do with the buses that could no longer run on the transit system. Because the system relies heavily on buses, their average life is only about 3.5 years. Today, “retired” buses are used as mobile job training centres, schools, health clinics, soup kitchens and food markets.

Results

Today, Curitiba is considered one of the best examples of urban planning worldwide.

- **Increased modal share of public transport:** An effective and well-planned bus transit system has helped to significantly decrease the dependence of residents on driving, resulting in lower carbon emissions. About 85 per cent of Curitiba's population uses the BRT system.
- **Financial viability of the operation:** The BRT operates without financial support from the government. Revenue from the relatively high ridership is sufficient to cover the operation and maintenance costs.

Success factors

- **Leadership of a mayor with a clear vision:** The Curitiba mayor at the time of the over-urbanizing crisis of the late 1960s was Jaime Lerner, an urban planner as well as an architect, who had a vision and commitment for the sustainable future of the city. He pushed forward policy packages that promoted the BRT system and incorporated other measures such as car-free districts. With his zeal, the benefits of those policies were vastly communicated to win over public support.
- **Financial support from the central Government for the initial capital investment:** Upfront investments were partly covered through a 15-year loan from the central Government; the local budget and revenues from a local fuel tax and road-use pricing were channelled to cover the remainder.
- **Clearly divided role between government and the private sector:** The BRT operation system in Curitiba is based on an innovative public-private partnership model. Although the city government decides the routes, plans the schedule, constructs the roads and provides the infrastructure, such as bus ways and stations, private companies take responsibility for the operation, daily maintenance and fare collection.
- **The operation is monitored and regulated by the city government to maintain a certain quality:** The bus performances are monitored by a public entity; if they fail to meet the service requirements, which are shown by parameters in the contract, they are fined. In addition, the private bus operators are paid by the kilometres they serve or the type of service they offer rather than by the number of passengers. This ensures that all routes, which are socially and ecologically desirable, are evenly operated.

Further reading

Eco2 Cities: Ecological Cities as Economic Cities, by Hiroaki Suzuki and others (Washington D.C., World Bank, 2010). Available from http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1270074782769/Eco2_Cities_Book.pdf