INTEGRATED TRANSPORT DEVELOPMENT EXPERIENCES OF GLOBAL CITY CLUSTERS – URBAN AND SUBURBAN TRANSPORT IN MEXICO CITY

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Photo: Kasper Christensen
INDEX

1) INTERNATIONAL AND NATIONAL CONTEXT

2) MEXICO CITY

3) THE CASE OF METROBUS

4) THE CASE OF LINEA 1 TREN SUBURBANO
   - Challenge & Vision of Success
   - Planning
   - Construction & Implementation
   - Operation

5) KEY LESSONS
INDEX

1) INTERNATIONAL AND NATIONAL CONTEXT

2) MEXICO CITY

3) THE CASE OF METROBUS

4) THE CASE OF LINEA 1 TREN SUBURBANO
   - Challenge & Vision of Success
   - Planning
   - Construction & Implementation
   - Operation

5) KEY LESSONS
Like in the US and Brazil, urban population in Mexico is:
- A majority (78% of population lives in cities)
- Growing at slower rates (1.2% annually) compared to cities in China and India
Periods of high growth without effective planning and increasing motorization, pushed Mexican cities towards a “3D” urban growth model: distant, disperse, and disconnected.

In the last 30 years, Mexico City’s population has doubled and its size has increased seven-fold.
In Mexican cities, urban sprawl raises the cost of providing infrastructure and public services by 10% to 40%.

The 3D model is currently leading to congestion and compromising productivity and equal access to services.
Sustainable transport is playing an increasing role in delivering solutions to problems triggered in the past.

Strategies like Mexico City´s BRT system (Metrobus) are supporting an alternative “3C” model: **compact, connected, and coordinated**.
INDEX

1) INTERNATIONAL AND NATIONAL CONTEXT

2) MEXICO CITY

3) THE CASE OF METROBUS

4) THE CASE OF LINEA 1 TREN SUBURBANO
   - Challenge & Vision of Success
   - Planning
   - Construction & Implementation
   - Operation

5) KEY LESSONS
MEXICO CITY - OVERVIEW

21.2 M people (20% of the national population).

Federal District + 60 municipalities in the State of Mexico.

The most populous metropolitan area in the western hemisphere.

57 km of massive transport for 11 M people

294 km of massive transport for 9 M people
MEXICO CITY - MOBILITY

**Demand**
- *More and longer trips* -
  - 2.5 trips per day per person - 53 M trips per day.
  - Urban sprawl between 1980-2010 increased 7-fold.
  - Sustained population growth.

**Supply**
- *More cars and low capacity public transport* -
  - Annual motorization rates of 3.1%.
  - 6.5 million vehicles projected for 2030.
  - High capacity buses were almost entirely replaced by low capacity buses between 1986 and 2007.
3 services and 7 lines

150,000 daily users

Up to 1.5 km (15-20 min walk) for modal interchange
INDEX

1) INTERNATIONAL AND NATIONAL CONTEXT

2) MEXICO CITY

3) THE CASE OF METROBUS

4) THE CASE OF LINEA 1 TREN SUBURBANO
   - Challenge & Vision of Success
   - Planning
   - Construction & Implementation
   - Operation

5) KEY LESSONS
METROBUS – KEY TAKEAWAYS

- BRT systems require a high level of institutional development to work properly.

- Governments implementing BRTs need for a group of competent and qualified professionals.

- The system has leveraged information technology, well defined rules and clear contracts to promote trust among stakeholders.
STRATEGIC MODEL FOR GOOD GOVERNANCE IN PUBLIC TRANSPORT (ADAPTED FROM MARK H. MOORE¹).

Financial sustainability

Legitimacy and support

Public value

Rolling stock

ROW & Road network

Transport hubs

Operational capacity

Institutional capabilities

Support technologies

Integrated services

¹John F. Kennedy School of Government at Harvard University
METROBUS – MEXICO CITY’S FIRST BRT SYSTEM

Key Lessons:

- **Financial sustainability**
- **Negotiations with existing operators**
- **Regulations**
- **PPPs for infra. and operations**
- **Institutional development**
- **Integrated transport system**
- **Rolling stock**
- **Transport hubs**
- **Land acquisition**
- **Segregated lanes**
- **Overall accessibility**
- **Bus operations**
- **Fleet control system & signage**

Legend:
- **Public Value**
- **Operational capacity**
- **Legitimacy and support**
INDEX

1) INTERNATIONAL AND NATIONAL CONTEXT

2) MEXICO CITY

3) THE CASE OF METROBUS

4) THE CASE OF LINEA 1 TREN SUBURBANO
   - Challenge & Vision of Success
   - Planning
   - Construction & Implementation
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5) KEY LESSONS
Challenge & Vision of Success

Challenge
- 60% of the population to live on the outskirts of the city by 2020
- Transport services provided by low capacity, inefficient and high polluting microbuses
- Up to 5 hours per day of commuting

Vision of Success
- Provide a massive suburban transport network at the Metropolitan level for users spending 1/3 of their income in transport.

27.5 M trips between the State of Mexico and the Federal District.
**PLANNING – NETWORK**

**Main components**
246 km of suburban railways
- Phase I: 79 km (red),
- Phase II: 90 km (blue), and
- Phase III: 77 km (green)

5 terminals, 7 transfer hubs, 10 inter-modal hubs (coordinated with metro), and 42 stations.

**Main assumptions**
- Direct alignment with development plans
- Financial risk is reduced by using a preexisting 246 km railway network and ROW.
**Main components**
- 27 km and 6 stations
- 17 pedestrian bridges,
- Improvement of preexisting terminal (Buenavista)

**Main assumptions**
- 30-year concession
- 298,000 pas-day
  - 65% to be fed by minibuses
  - 35% to be served directly
- Concessionaire and local authorities would coordinate to implement a feeder system
- Regulatory attributions, agreements, and incentives were not aligned to provide a reliable feeder system.

- The integration of fares between minibuses and the rail system was simply not considered.

Many routes did not get into terminals to avoid a 3 pesos fee.
CONSTRUCTION & IMPLEMENTATION

- Residential areas were difficult to connect without any major urban renovation.

- Accessibility proved to be a big challenge in the context of preexisting industrial use.
OPERATIONS

- Lack of integration between the train and its feeder system at many levels (infrastructure, operations, and fare).

- Parallel transport routes kept providing a cheaper service.

- Low demand and financial sustainability at risk.

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**Context**
Mexico City
Metrobus
Line 1
Key Lessons

**Planned demand**
298,000 pas-day

- Direct: 35%
- Fed: 65%

**Demand after 1 year**
140,000 pas-day

- Direct: 78%
- Fed: 22%
STRATEGIC MODEL FOR GOOD GOVERNANCE IN PUBLIC TRANSPORT (ADAPTED FROM MARK H. MOORE¹).

Key Lessons

¹John F. Kennedy School of Government at Harvard University
LINE 1 – MEXICO CITY’S FIRST SUBURBAN RAIL SYSTEM

- **Context**: Mexico City
- **Metrobus Line 1**
- **Key Lessons**

![Radial Chart]

- **Financial sustainability**
- **Transport hubs**
- **ROW & land acquisition**
- **Road network & rail system**
- **Overall accessibility**

**Legend**:
- **Public Value**
- **Operational capacity**
- **Legitimacy and support**
LINE 1 – KEY TAKEAWAYS

Political leadership and effective institutions should:

- Define responsibilities and establish a framework promoting cooperation.

- Link funds with quality standards of accessibility and integration.

- Provide guidance on integrated planning and performance criteria.

- Build capacity to avoid negative outcomes under PPPs.
INDEX

1) INTERNATIONAL AND NATIONAL CONTEXT

2) MEXICO CITY

3) THE CASE OF METROBUS

4) THE CASE OF LINEA 1 TREN SUBURBANO
   - Challenge & Vision of Success
   - Planning
   - Construction & Implementation
   - Operation

5) KEY LESSONS
- Cities growing beyond administrative boundaries impose challenges existing institutions are not prepared to face without incurring in unexpected costs.
- Institutional fragmentation need to be addressed.
- Finance focusing only on infrastructure is not enough.
- Institutional development and capacity building are key.
PLANNING LINE 1 – ACCOUNTABILITY

30-YR CONCESSION
- Rail operation
- Rolling stock & support systems
- Stations

SECRETARY OF TRANSPORT (Federal Level)
- ROW & Land acquisition
- Accessibility for users (by foot or minibus)

STATE OF MEXICO – FEDERAL DISTRICT (State Level)
- Mobility plan and feeder system based on minibuses

35% of projected demand: Contracts
65% of projected demand: Agreements