WORLD RESOURCES INSTITUTE | WRI ROSS CENTER FOR SUSTAINABLE CITIES

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

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Photo: Kasper Christensen

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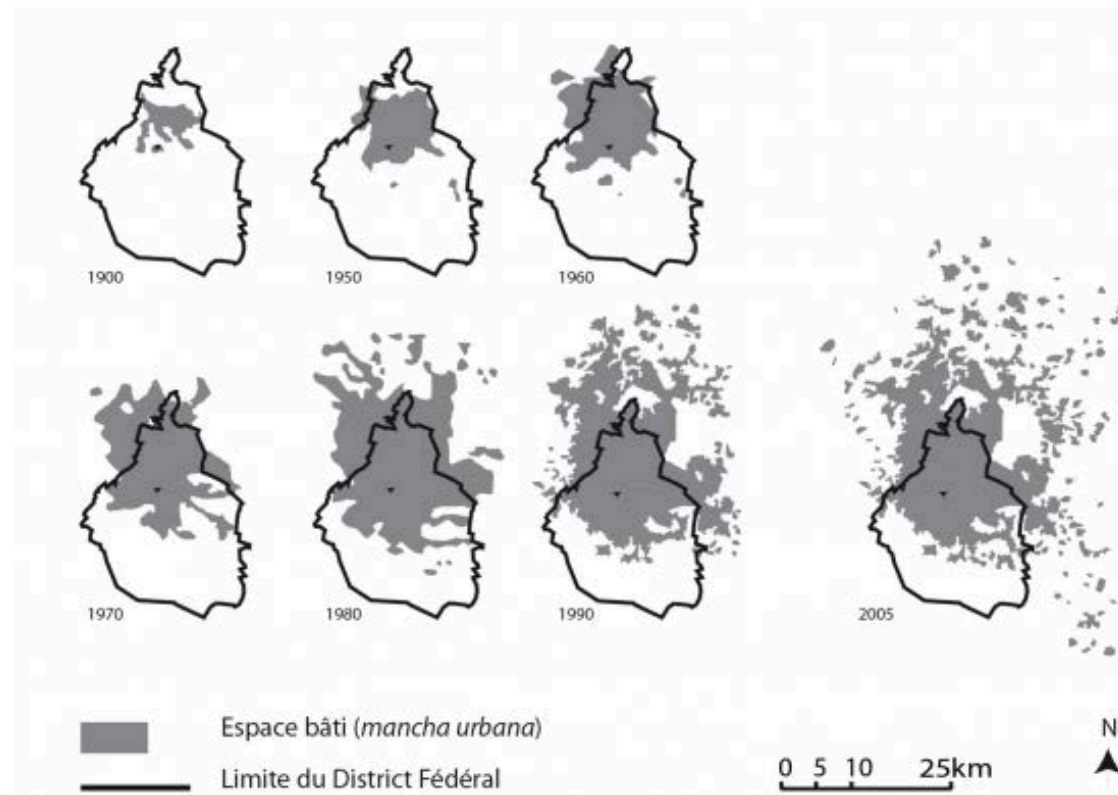- Planning
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Like in the US and Brazil, urban population in Mexico is:
- A majority (78% of population lives in cities)
- Growing at slower rates (1.2% annually) compared to cities in China and India
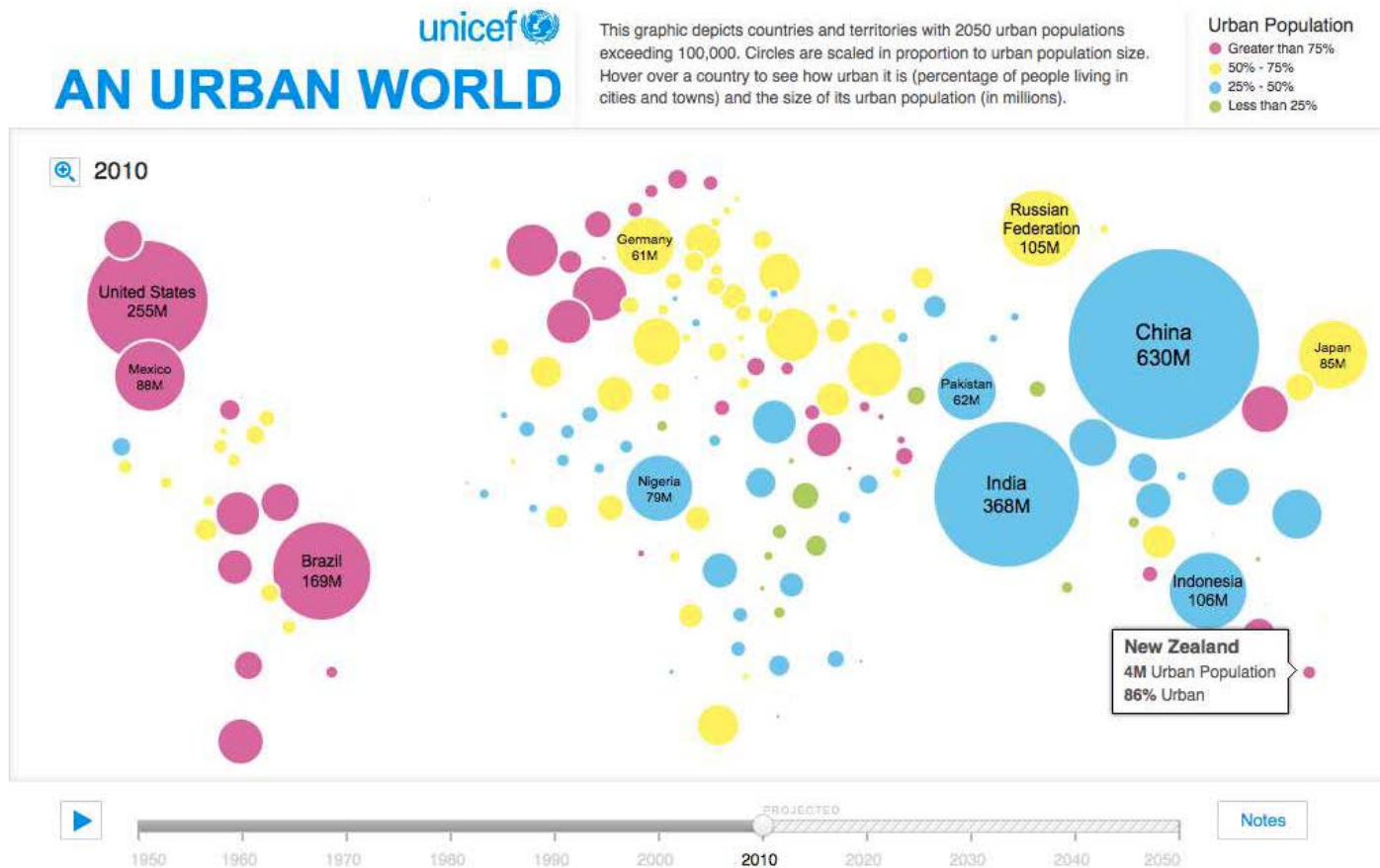
Periods of high growth without effective planning and increasing motorization, pushed Mexican cities towards a "3D" urban growth model: **distant, disperse, and disconnected**

1900   1950   1960

1970   1980   1990   2005

Espace bâti (*mancha urbana*)

Limite du District Fédéral

0 5 10   25km

N

In the last 30 years, Mexico City's population has doubled and its size has increased seven-fold.

The 3D model is currently leading to **congestion and compromising productivity** and equal access to services.

In Mexican cities, urban sprawl raises the cost of providing infrastructure and public services by 10% to 40%.

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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**.

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MEXICO CITY - OVERVIEW
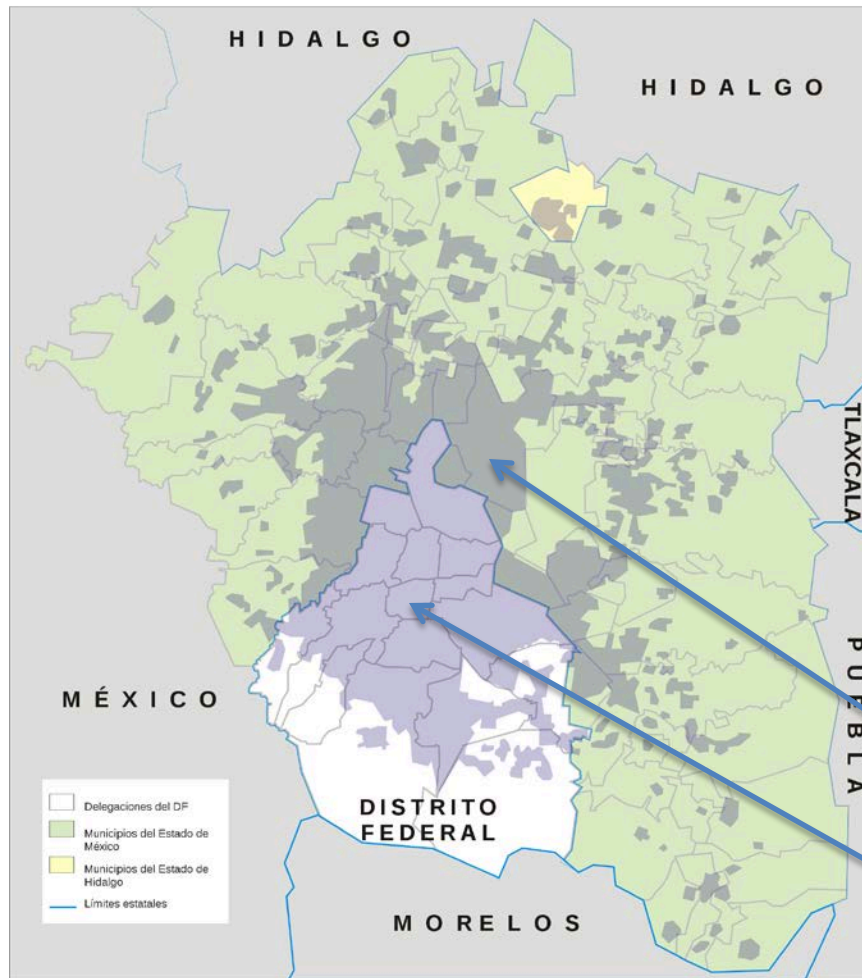
21.2 M people (20% of the national population).

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 -

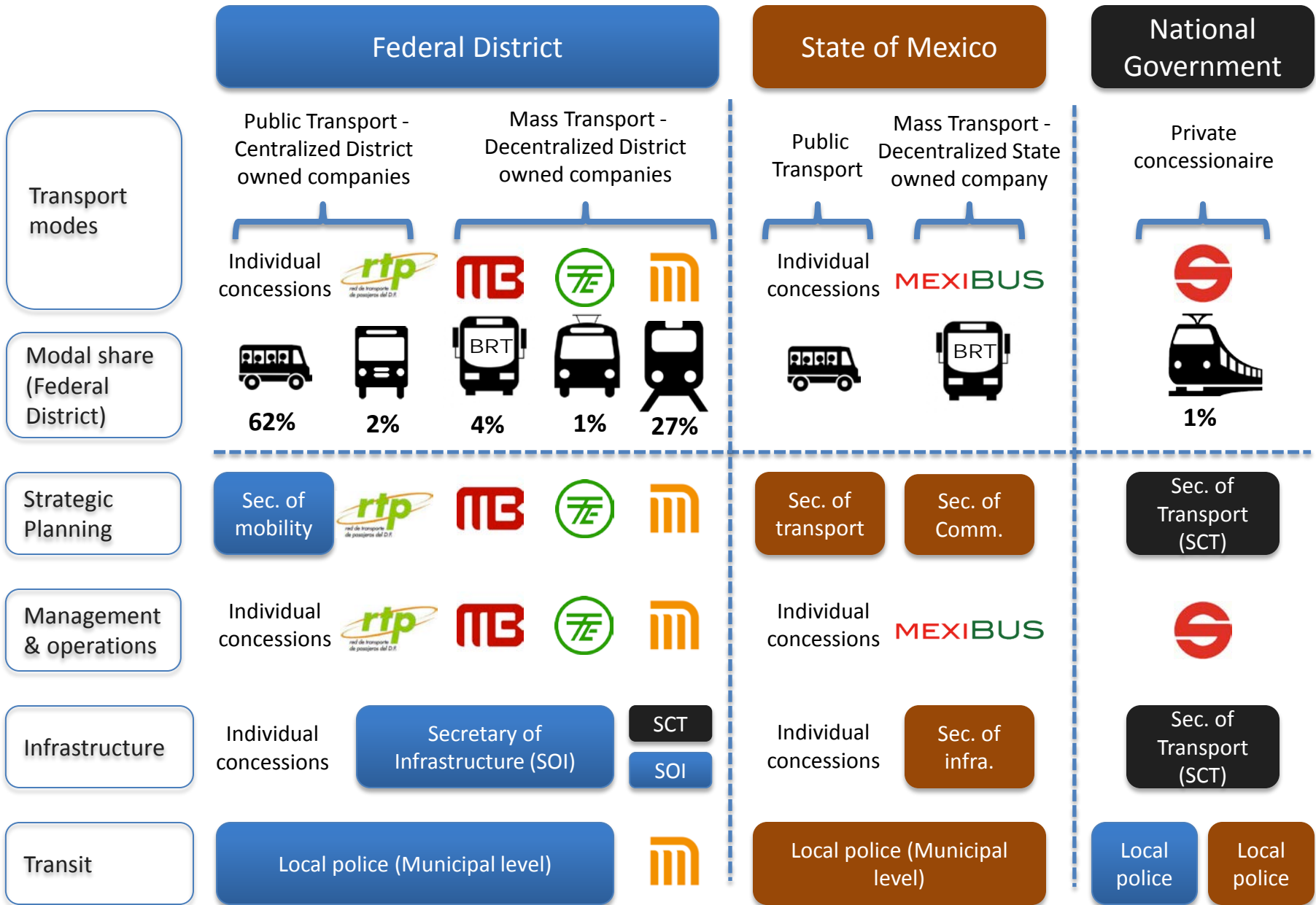- 2.5 trips per day per person - 53 M trips per day.

- 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.
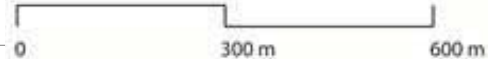
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	Federal District					State of Mexico		National Government
Transport modes	Public Transport - Centralized District owned companies		Mass Transport - Decentralized District owned companies			Public Transport	Mass Transport - Decentralized State owned company	Private concessionaire
	Individual concessions	rtp (red de transporte de pasajeros del D.F.)	MB	TE	M (Metro)	Individual concessions	MEXIBUS	S
Modal share (Federal District)	62%	2%	4% (BRT)	1%	27%			1%
Strategic Planning	Sec. of mobility	rtp	MB	TE	M	Sec. of transport	Sec. of Comm.	Sec. of Transport (SCT)
Management & operations	Individual concessions	rtp	MB	TE	M	Individual concessions	MEXIBUS	S
Infrastructure	Individual concessions	Secretary of Infrastructure (SOI)			SCT / SOI	Individual concessions	Sec. of infra.	Sec. of Transport (SCT)
Transit	Local police (Municipal level)				M	Local police (Municipal level)		Local police / Local police

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3 services and 7 lines

150,000 daily users

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

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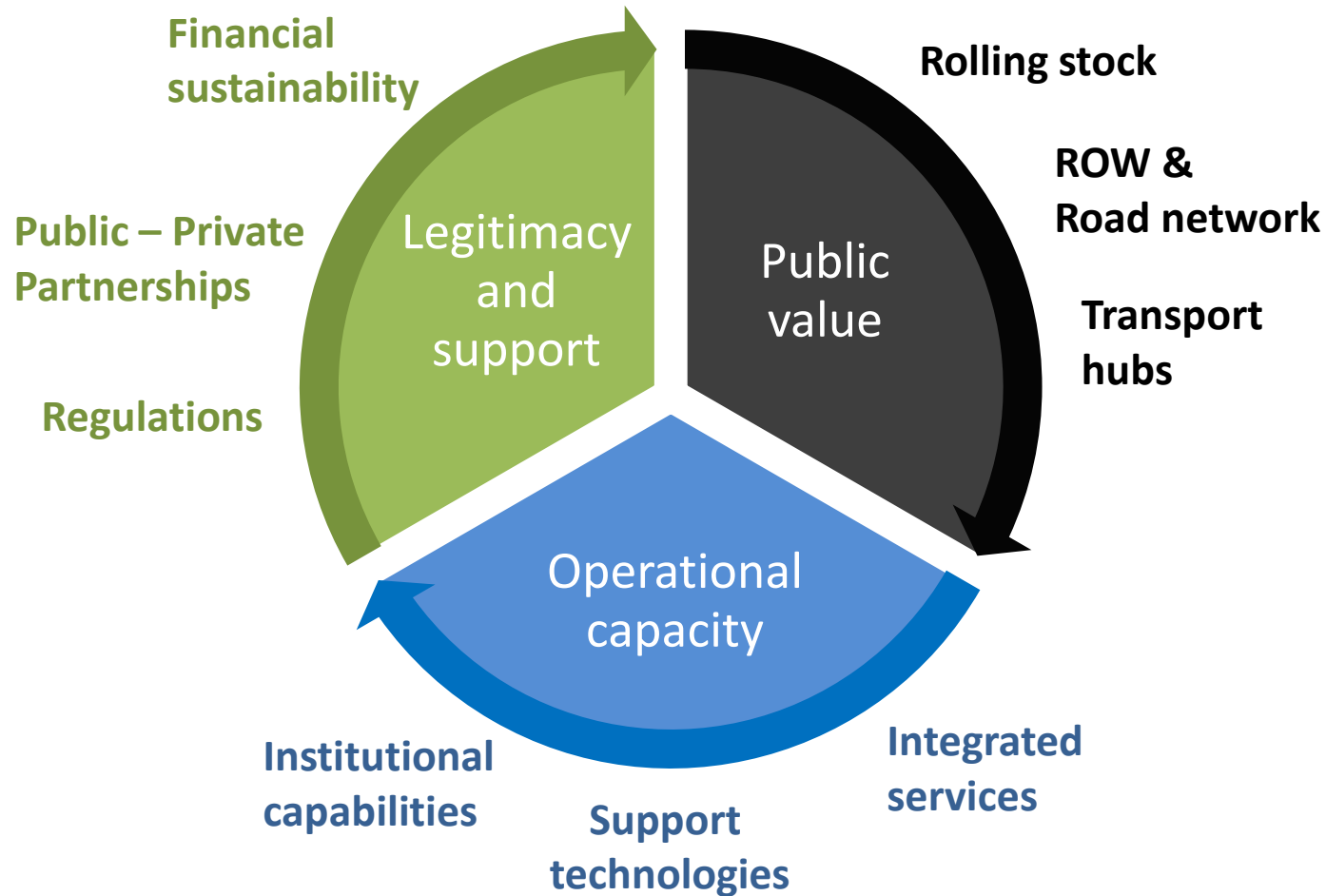- Construction & Implementation
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METROBUS – KEY TAKEAWAYS

- 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.
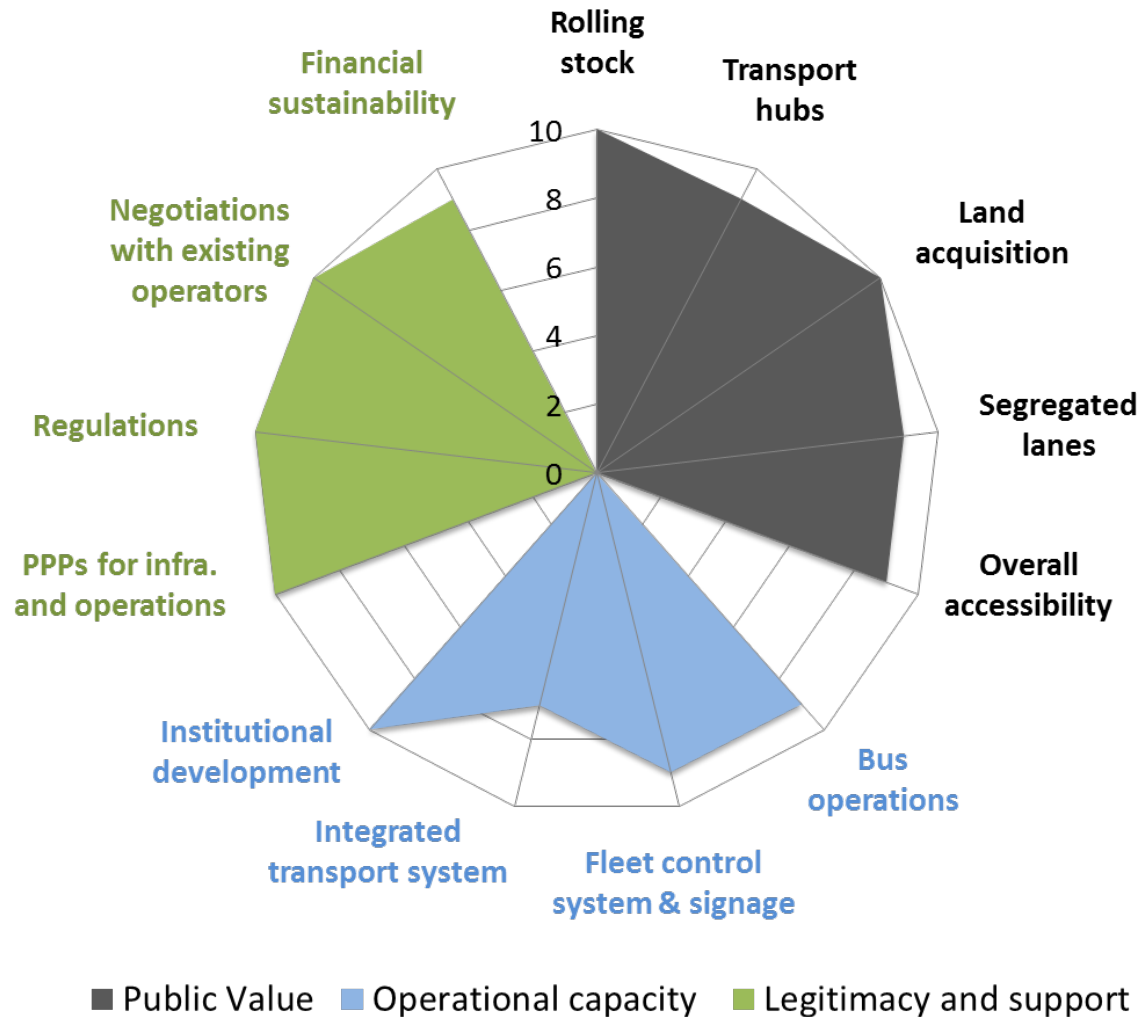
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STRATEGIC MODEL FOR GOOD GOVERNANCE IN PUBLIC TRANSPORT (ADAPTED FROM MARK H. MOORE[1]).

Financial sustainability

Public – Private Partnerships

Regulations

Legitimacy and support

Public value

Operational capacity

Rolling stock

ROW & Road network

Transport hubs

Institutional capabilities

Support technologies

Integrated services

[1]John F. Kennedy School of Government at Harvard University

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METROBUS – MEXICO CITY'S FIRST BRT SYSTEM

Radar chart with axes: Rolling stock, Transport hubs, Land acquisition, Segregated lanes, Overall accessibility, Bus operations, Fleet control system & signage, Integrated transport system, Institutional development, PPPs for infra. and operations, Regulations, Negotiations with existing operators, Financial sustainability. Scale 0 to 10.

Legend: ■ Public Value ■ Operational capacity ■ Legitimacy and support

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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.

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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.

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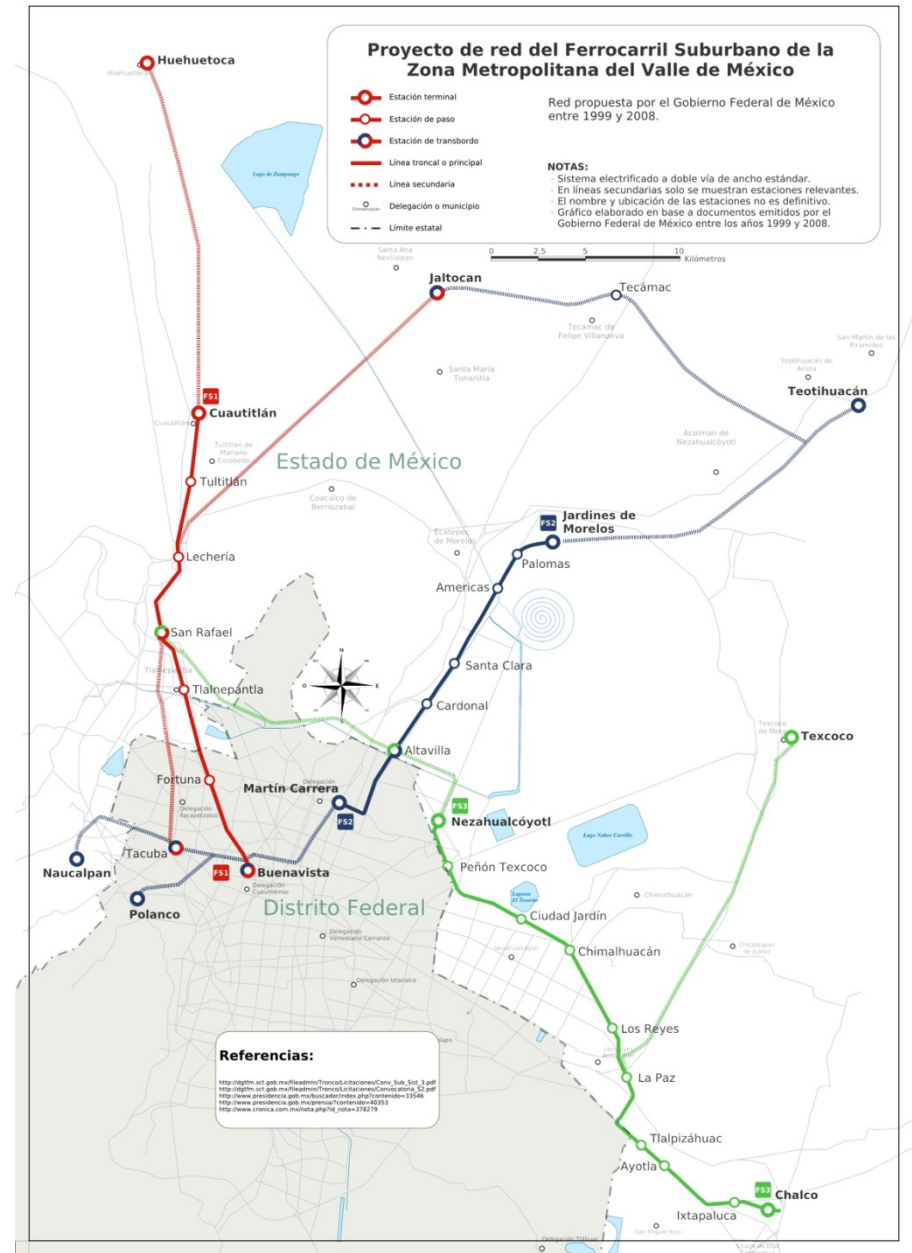
PLANNING – LINE 1

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

CONSTRUCTION & IMPLEMENTATION

- 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.
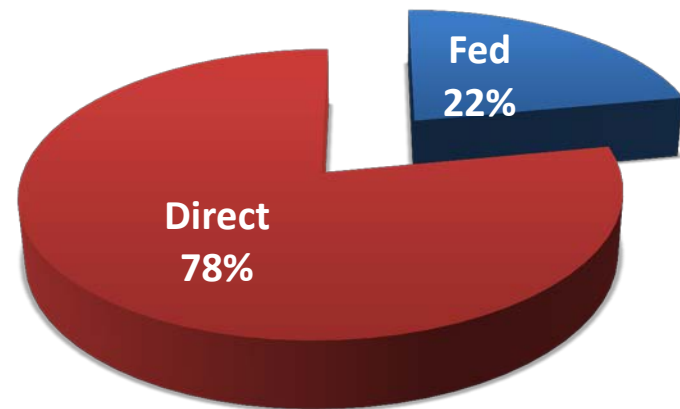
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OPERATIONS

- 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.

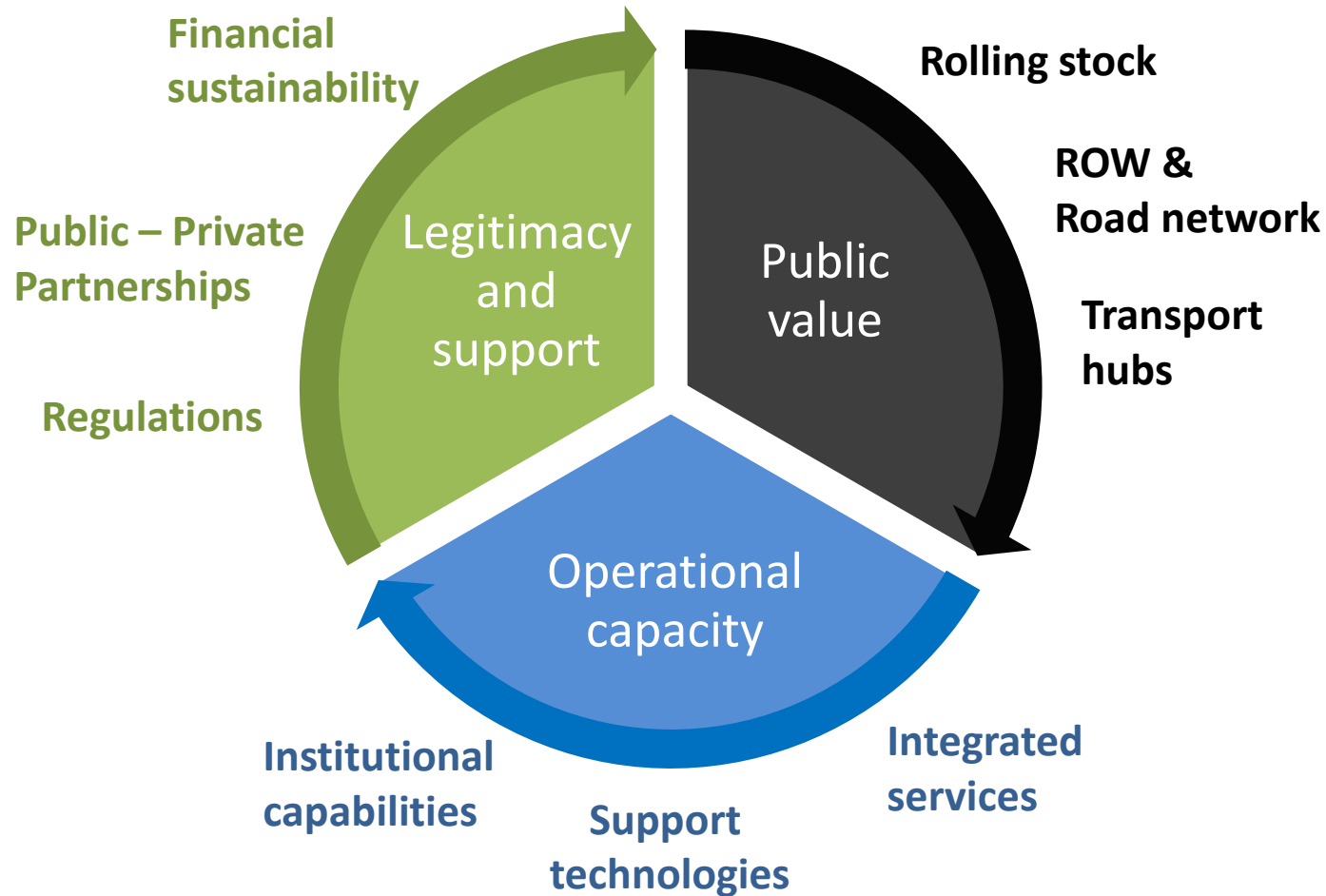- Low demand and financial sustainability at risk.
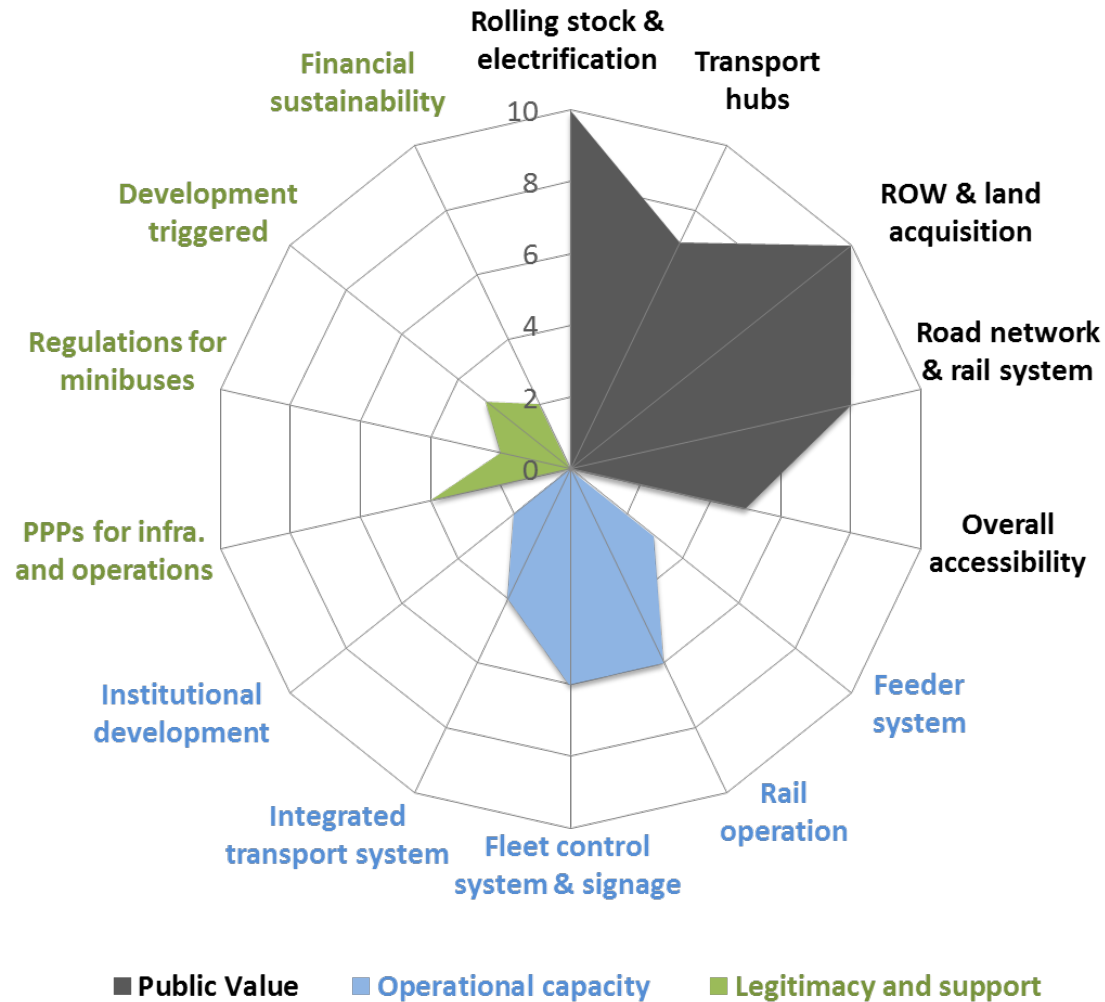
Planned demand
298,000 pas-day

Direct 35%

Fed 65%
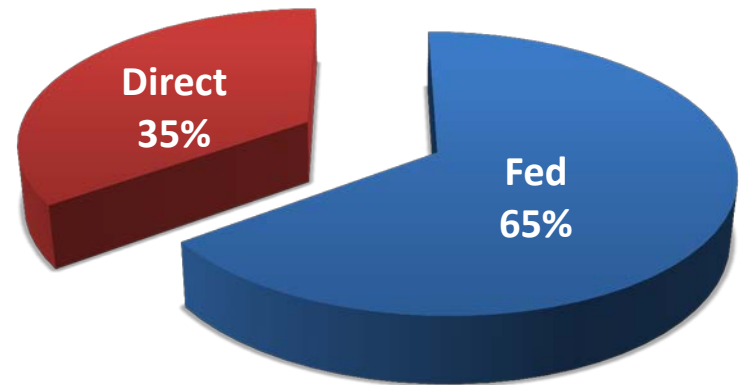
Demand after 1 year
140,000 pas-day

Fed 22%

Direct 78%

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LINE 1 – MEXICO CITY'S FIRST SUBURBAN RAIL SYSTEM

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.

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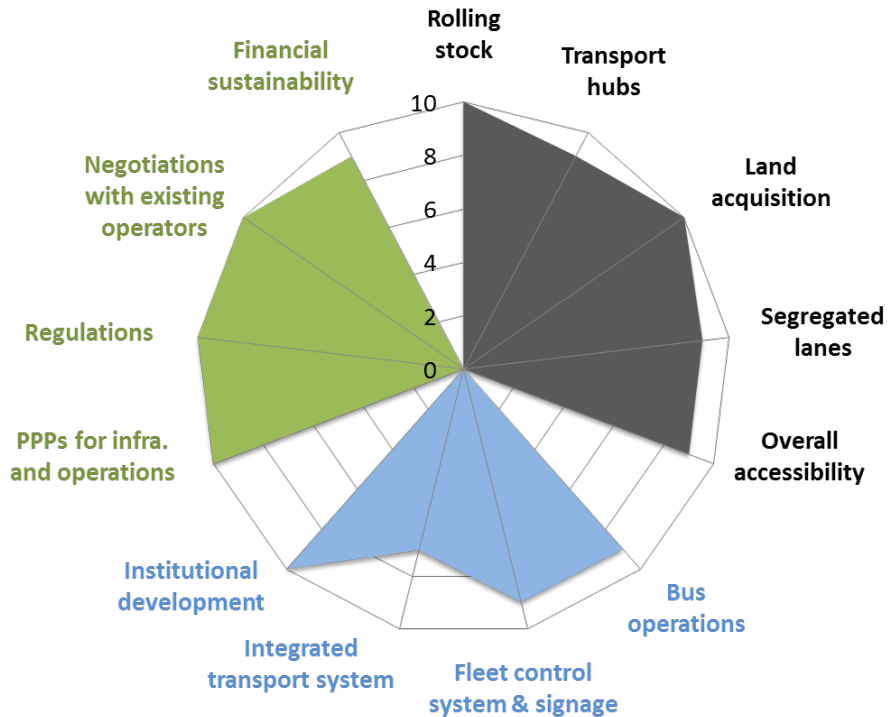1) INTERNATIONAL AND NATIONAL CONTEXT

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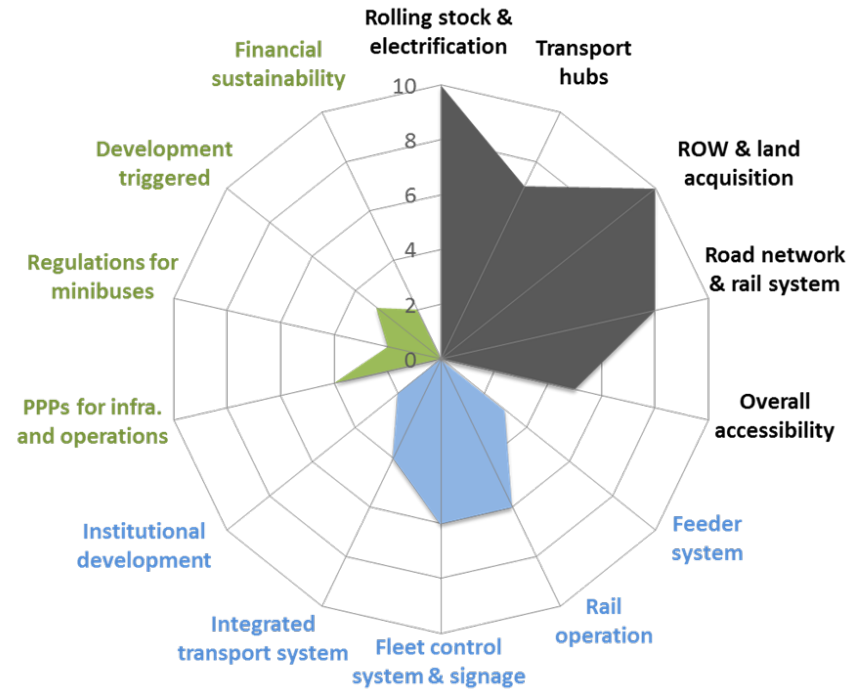4) THE CASE OF LINEA 1 TREN SUBURBANO
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METROBUS

LINE 1 SUBURBAN RAIL

- 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.

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PLANNING LINE 1 – ACCOUNTABILITY

35% of projected demand

65% of projected demand

Contracts

Agreements

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

| infrastructure | Technology | ROW | Operations |

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