

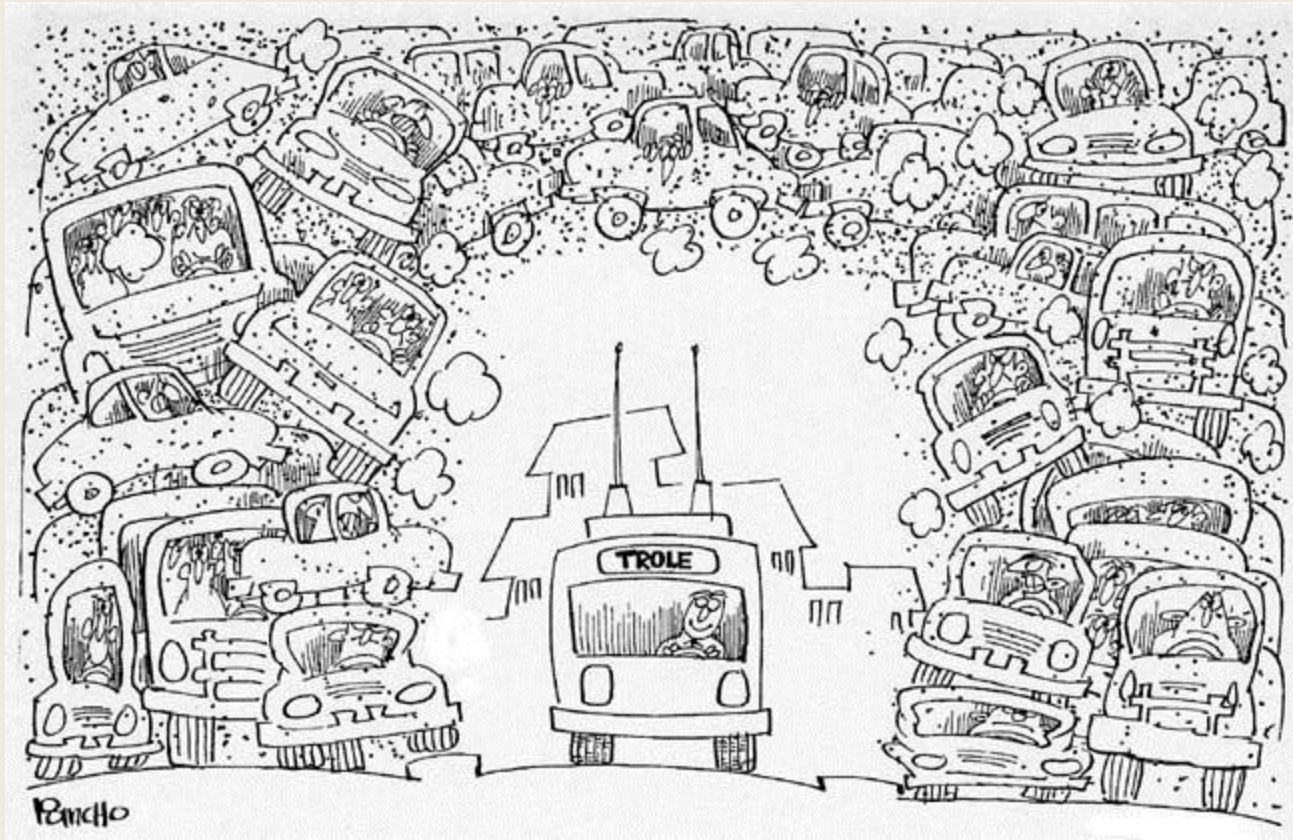
# BRT: From vision to promise to delivery

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# BRT is often portrayed as a “model”



*El Comercio, Quito, Ecuador, 26/12/1995*

**“A solution ready to go, already softened up, already worked out”  
(Kingdon, 2003:142).**

# Background: Motivations

- BRT undoubtedly transformative, globally
  - and, disruptive
- Project proponents must respond to context-dependent political tensions
  - emerge via implementation
  - require compromise.
- Our aim:
  - identify such implementation choices and tradeoffs,
  - assess some of their consequences.









# Focus and methods

- **Focus:** How projects adapt as a result of conflicts between project proponents and
  - A) Civil society, particularly neighborhood and environmental groups (*the focus of our PUC team, coordinated by Manuel Tironi*)
  - B) Incumbent (traditional) transport operators (*the focus of our MIT team, coordinated by Chris Zegras*).
- **Approach:** Structured case studies

# Dimensioning case typologies

## A) Strategic approach to conflict with incumbent operators

Fostering  
Institutional  
Change



Forcing  
Institutional  
Change

Automatic  
grandfathering  
to  
existing  
companies



Tiered  
approach  
with  
advantages  
to existing  
firms



Competitive  
tendering  
with  
advantages  
to existing  
firms



Full  
competitive  
tendering



Arbitrarily  
awarding of  
contracts to  
new  
entrants



Takeover  
and public  
provision of  
service

Mexico City (Line 1)  
Leon  
Quito-Ecovia

Guayaquil

Bogota

Santiago

Mexico City (Line 3)

Quito-Trolebus

# Dimensioning case typologies:

## B) Strategic approach to system expansion

### Evolutionary Strategy

- Gradual expansion
- **corridor-by-corridor sequence**
- New, perhaps different conditions at each stage.
- Low integration with other modes
- Feeder and other public transit services continue to operating without change

### Revolutionary Strategy

- **Simultaneous transformation** of all (or most) public transit
- Several trunk lines established at the same time
- Feeder and other public transit services redesigned
- **Physical, operational, fare, and regulatory integration**



# Fostering change

## **Type A:** eg. Mexico City

Incorporate operators that previously served the selected corridor, no competitive pressures.

Gradual system expansion, corridor-by-corridor, new and different conditions at each stage. No integration with rest of system.

## **Type B:** eg. Leon

Incorporate operators that previously served the selected corridor, no competitive pressures.

All (most) public transit in city simultaneously transformed. Several trunk lines established. Redesign of feeder services/routes. Integration to enhance trunk system. "Universal" application of new rules.

Evolution ←

→ Revolution

## **Type C:** Eg. Quito

Permanence of incumbent operators not critical objective. Explicit objective may be replacing incumbents.

Gradual system expansion, corridor-by-corridor, new and different conditions at each stage. No integration with rest of system.

## **Type D:** Eg. Santiago

Permanence of incumbent operators not critical objective. Explicit objective may be replacing incumbents.

All (most) public transit in city simultaneously transformed. Several trunk lines established. Redesign of feeder services/routes. Integration to enhance trunk system. "Universal" application of new rules.

# Forcing change

# Case Summary

	Mexico City	Leon, Mexico	Quito, Ecuador	Santiago de Chile
<b>Initial year</b>	2005	2003	1995	2007
<b>Metro Area Population</b>	19,240,000	1,470,000	1,550,000	5,700,000
<b>General Description</b>	3 corridors; 67 km median busway; 114 stations, six terminals; centralized control, non-integrated feeder services	Five BRT trunk corridors with 30 km median busways (60% segregated); five terminals; 61 stations; integrated feeder services; centralized control.	Three BRT corridors (37 km, mostly median busways); 68 stations, 9 terminals; integrated feeder services; centralized control (separately for each corridor)	18.8 km of segregated corridors, 70 large bus shelters along the main corridors, and three intermodal stations.
<b>Commercial Speed (km/h)</b>	19	18	18.5	18
<b>Supply/Demand</b>	271 articulated buses; 13 bi-articulated buses; electronic fare collection system. 463,000 passengers/day. Rest of the system: organized in 96 <i>asociaciones civiles</i> and 9 firms, operating 29,949 buses, minibuses and vans	84 articulated buses; 500 auxiliary and feeder buses; electronic fare collection system. 417,000 passengers/day.	189 articulated buses (113 trolley buses); 185 feeder buses; coin-based fare collection. 560,000 passengers/day Rest of the system N.A..	1,200 new low floor articulated buses, 1,500 conventional trunk buses (to be gradually replaced by new low floor buses), and 2,300 feeder buses. Integrated electronic fare collection system. 5.7 million passengers/day.
<b>Comments</b>	Eight BRT operators, (six private companies owned by the pre-existing operators, one private company controlled by a new entrant to the market and one public company); two fare collection contractors; physical integration with regional buses, regional rail and Metro.	13 existing private concessionaries formed four new operators for trunk-ways and continue the operation of feeder services. 65% of the traditional routes in the city are fare integrated with the system.	Public operator/ owner (Trolebús and Ecovía corridors); Private Operator (North corridor); no fare integration among corridors.	Buses privately operated through 14 concession contracts (5 trunk units and 9 feeder units) one private operator for financial management, one private operator for system integration (control and user information), and one public operator (Metro).

Sources: Hidalgo and Carrigan (2010); CAF (2010). Updated information taken from Sheffield Padilla (2009), Metrobus (<http://www.metrobus.df.gob.mx>); Dirección General de Movilidad (<http://oruga-sit.leon.gob.mx>)

# Narrative: Mexico City, “success”; Santiago, “failure”

## Mexico City

Home » Featured, Positive Action

### Harvard award to Mexico City bus system

24 NOVEMBER 2009 2 COMMENTS



The Metrobus Project, an innovative and first-rate bus system that has considerably reduced traffic congestion and pollution in Mexico City, recently received Harvard University's Roy Family Award for Environmental Partnerships.

The Metrobus transportation system, which is already being considered a possible model for similar implementations in other countries, was launched in 2005 along a 19 kilometers stretch (12 miles) of one of Mexico City's busiest avenues. It complements the metropolis' very busy subway.

More than 30 projects competed for the award. According to Harvard's statement referring to the announcement of the winner: "Metrobus has reduced carbon dioxide emissions from Mexico City traffic by an estimated 80,000 tons a year. The new buses, which operate on clean-burning ultra-low-sulfur diesel fuel, make more than 450,000 trips per day."

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#### The slow lane

##### Fallout from a botched transport reform

Feb 7th 2008 | SANTIAGO | from the print edition

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A FREE hand to redesign a city's bus services from scratch may be a transport planner's dream. But the overhaul of Santiago's public-transport system, launched in February 2007, has turned into a nightmare for commuters in Chile's capital. A year on, the multitude of flaws and glitches in the new scheme, called Transantiago, are gradually being fixed. The political damage to Michelle Bachelet, the country's president, and her predecessor, Ricardo Lagos, looks harder to repair.

The new scheme was the most ambitious transport reform ever tried by a developing country, says Darío Hidalgo of the World Resources Institute, a think-tank in Washington, DC. It involved some 200km (125 miles) of dedicated bus lanes, and the wholesale reorganisation of bus routes to integrate them with the city's metro. But Transantiago has become a model of how not to reform public transport. It brought misery for commuters: more changes to complete typical journeys, long queues for full buses and gross overcrowding of the metro.

But is it?



# One example: Industry transition in Mexico City's Metrobus

- “To make the operation of the transport corridors **feasible**, the overseeing authority **may consider the participation of the concessionaires operating on the road declared as a transport corridor**, as long as these concessionaires adapt to the new norms of operation to deliver service”

- Aviso por el que se aprueba el establecimiento del Sistema de Transporte Publico denominado “Corredores De Transporte Público De Pasajeros Del Distrito Federal. *Gaceta Oficial del Distrito Federal, No 98 Bis, September 24, 2004.*

- *“Look, all issues got resolved when I told them: ‘we will seek that you earn the same amount you are earning now’”*

- Claudia Sheimbaum, Project champion.

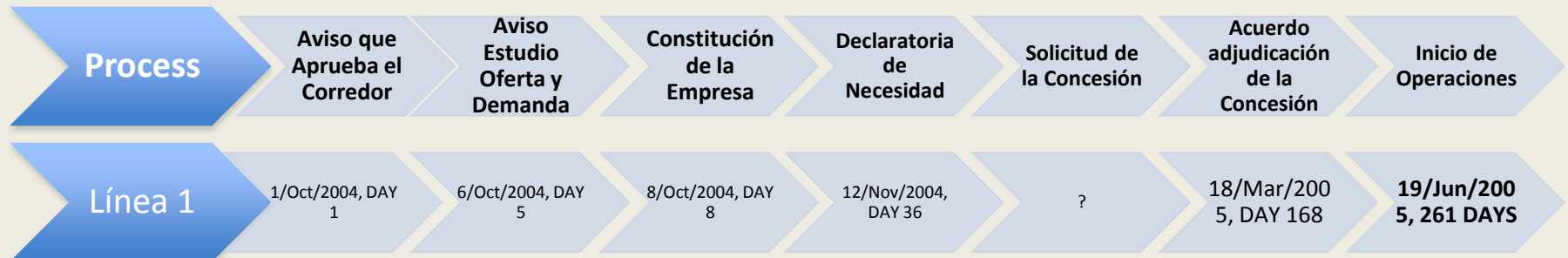
# Pre-existing situation in the Insurgentes corridor (2005)

250,900 passengers

Served by 2 organizations

With 352 vehicles

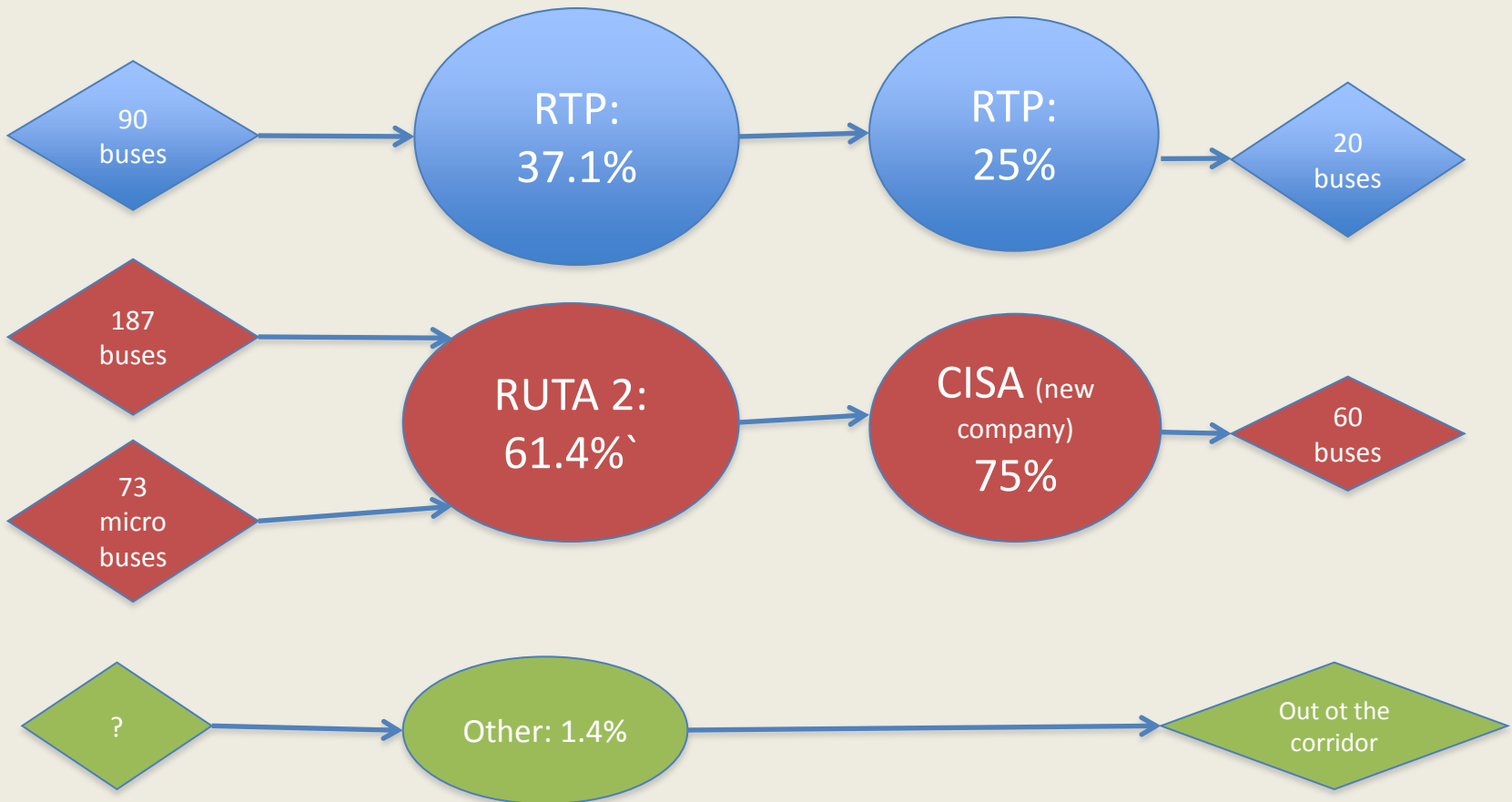
- Proposed BRT corridor: 19.2 kms, 32 stations, 2 terminals.
- Demand:
  - “Significant demand” estimated at: 250,900/weekday
- Incumbent Supply:
  - RTP →
    - Public company
    - 90 buses (avg 8.3 years old)
  - Ruta 2 →
    - Individual concessions, grouped as a single *asociación civil*
    - 262 vehicles (67% older than 6 years old)
- Oversupply: 55% of available capacity occupied



# Line 1: Insurgentes

**BEFORE BRT: 352 VEHICLES**

**AFTER BRT: 80 VEHICLES**







# Where are we?

- MIT team
  - Finished fieldwork in Mexico.
  - Santiago fieldwork in April-May 2012
- PUC team
  - Santiago fieldwork recently begun
  - Mexico City fieldwork in June-July 2012.
- Workshop with city stakeholders – April, 2012
  - Partial support from a recent grant from MIT-Chile
- Initial Conclusions expected late Fall 2012.

# Where might we go?

- Data/modeling links with LS2
- Additional cities viewed through same methodological lens
  - Including, theoretically, cities moving in the opposite direction (e.g., privatization).



Thank you.