Transport and Climate Change Week

Focus 2017: Urban Mobility

18 – 22 September 2017

Mobilise Your City

Transformative Urban Mobility INITIATIVE

On behalf of:

Federal Ministry
for the Environment, Nature Conservation,
Building and Nuclear Safety

Transport and
Climate Change Week

Focus 2017: Urban Mobility

18 - 22 September 2017

National Urban Mobility Policies and Programmes

Mobilise Your City

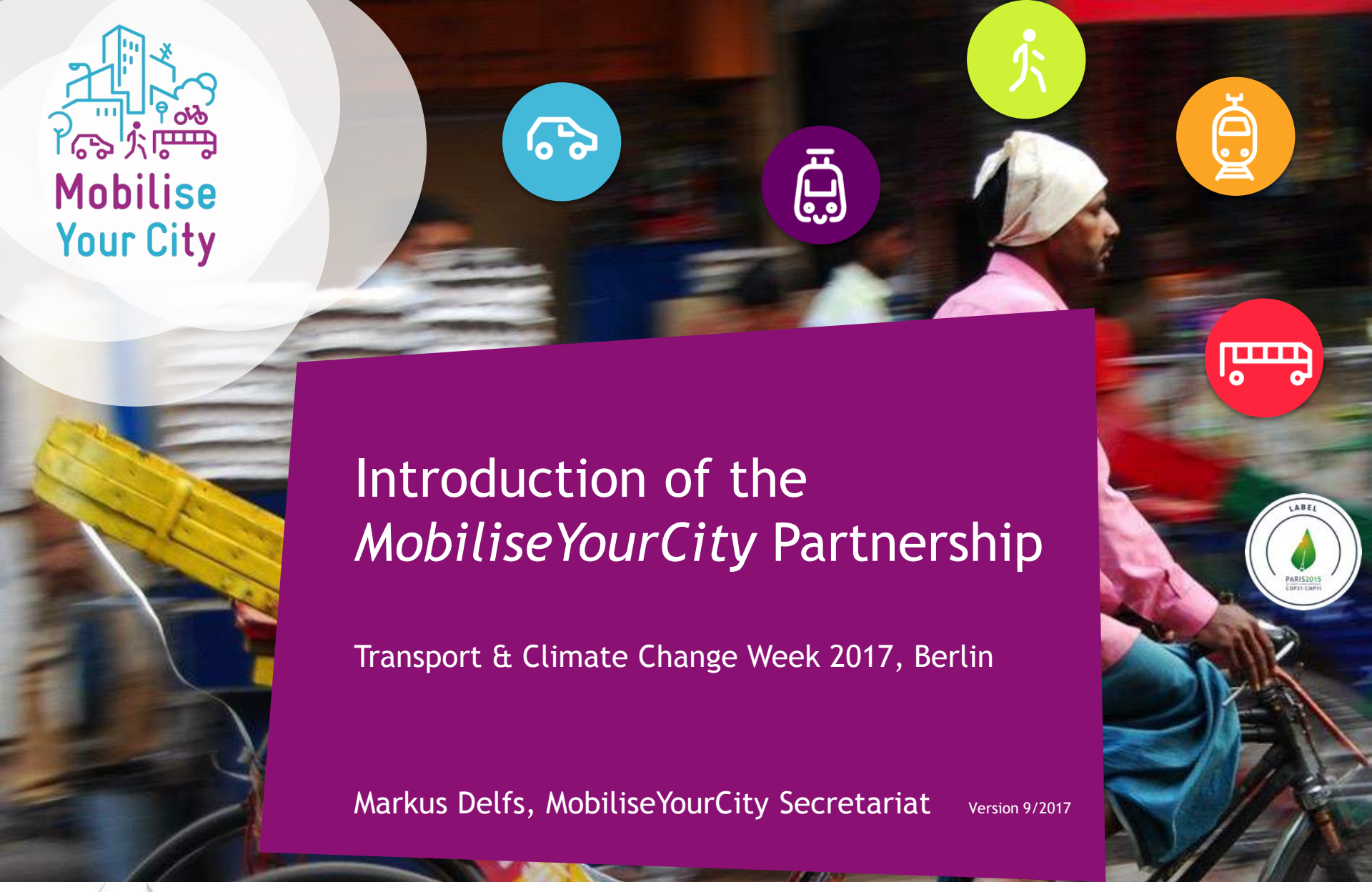
Transformative Urban Mobility INITIATIVE

Agenda

- Welcome and Backgrond
- Introduction to NUMPs
- Structure of the Political System – National and Local Competencies
- Institutional Set-up and Governance of NUMPs
- Financing Sustainable Urban Mobility
- Closing Session

Agenda

- **Welcome and Backgrond**
  - Welcome and introduction to MYC (MobiliseYourCity & TUMI) (Markus Delfs /Christian Mettke, GIZ)
  - Aim and objectives of the workshop (Holger Dalkmann & Dario Hidalgo)
  - Introduction participants



Mobilise Your City

Introduction of the *MobiliseYourCity* Partnership

Transport & Climate Change Week 2017, Berlin

Markus Delfs, MobiliseYourCity Secretariat

Version 9/2017

European Commission

Ministère de l'Environnement, de l'Énergie et de la Mer

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of the Federal Republic of Germany

ADEME

AFD

Cerema

CODATU

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MobiliseYourCity: Objectives and Goals

MobiliseYourCity focusses on Sustainable Urban Mobility Planning. It supports cities and national governments in emerging and developing countries to plan sustainable urban mobility.

MobiliseYourCity is a global partnership launched at COP21. It is one of 17 international transport initiatives under the **UNSG/UNFCCC action agenda** (GCAA). It assists beneficiaries in achieving their National Determined Contributions (**NDCs**).

MobiliseYourCity contributes to the **New Urban Agenda** and **UN's 2030 Agenda**, specifically Sustainable Development Goal (SDG) 11: Make cities inclusive, safe, resilient and sustainable.

Quantitative goals:

- **≥ 100 cities** acknowledged MobiliseYourCity and the need to implement ***Sustainable Urban Mobility Plans (SUMPs)*** targeting >50% CO2 until 2050
- **≥ 20 national governments** acknowledged MobiliseYourCity and the need to implement **National Urban Mobility Policies & Investment Programs (NUMPs)**

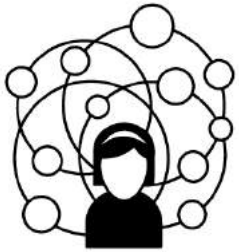
MYC Partners

Contributing Partners

are either direct donors (providing funds or technical assistance) or implementing agencies managing delegated funds;

Beneficiary Partners

are local authorities or national government from emerging or developing countries, benefiting from funding or technical assistance under the Initiative;



Knowledge and Networking Partners

support the initiative in various ways.

MobiliseYourCity Contributing Partners

Undertaken with support from:

European Commission

FFEM

Ministère de la Transition écologique et solidaire

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of the Federal Republic of Germany

Implementing Partners:

AFD

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Endorsed by:

PARIS2015 COP21·CMP11

Partnership on Sustainable Low Carbon Transport

Knowledge and Network Partners:

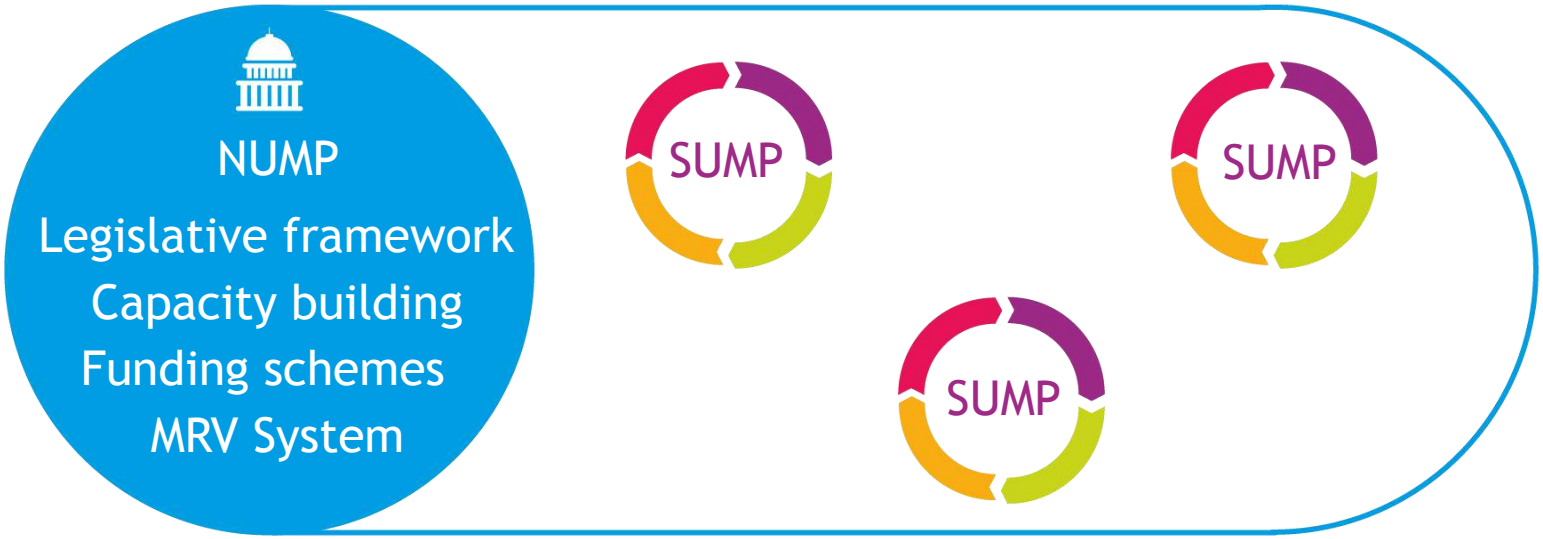
UN-HABITAT FOR A BETTER URBAN FUTURE

UCLG United Cities and Local Governments

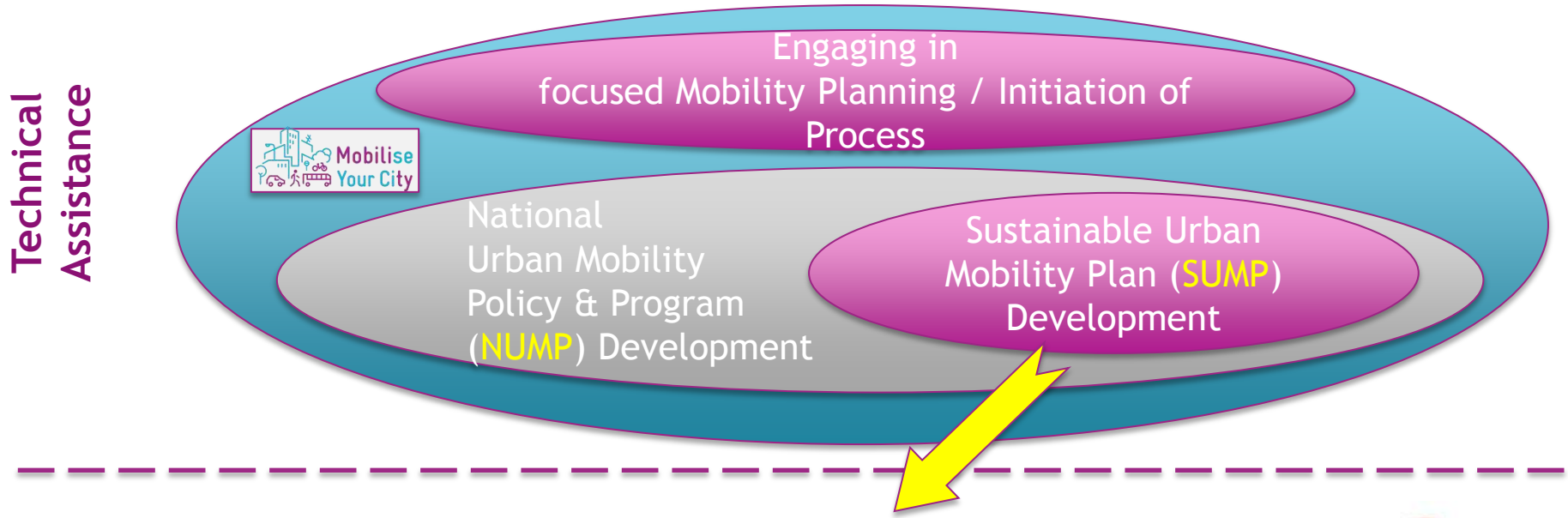
EUR MED TRANSPORT PROJECT

NUMPs:
National Urban Mobility Policies & Investment Programs

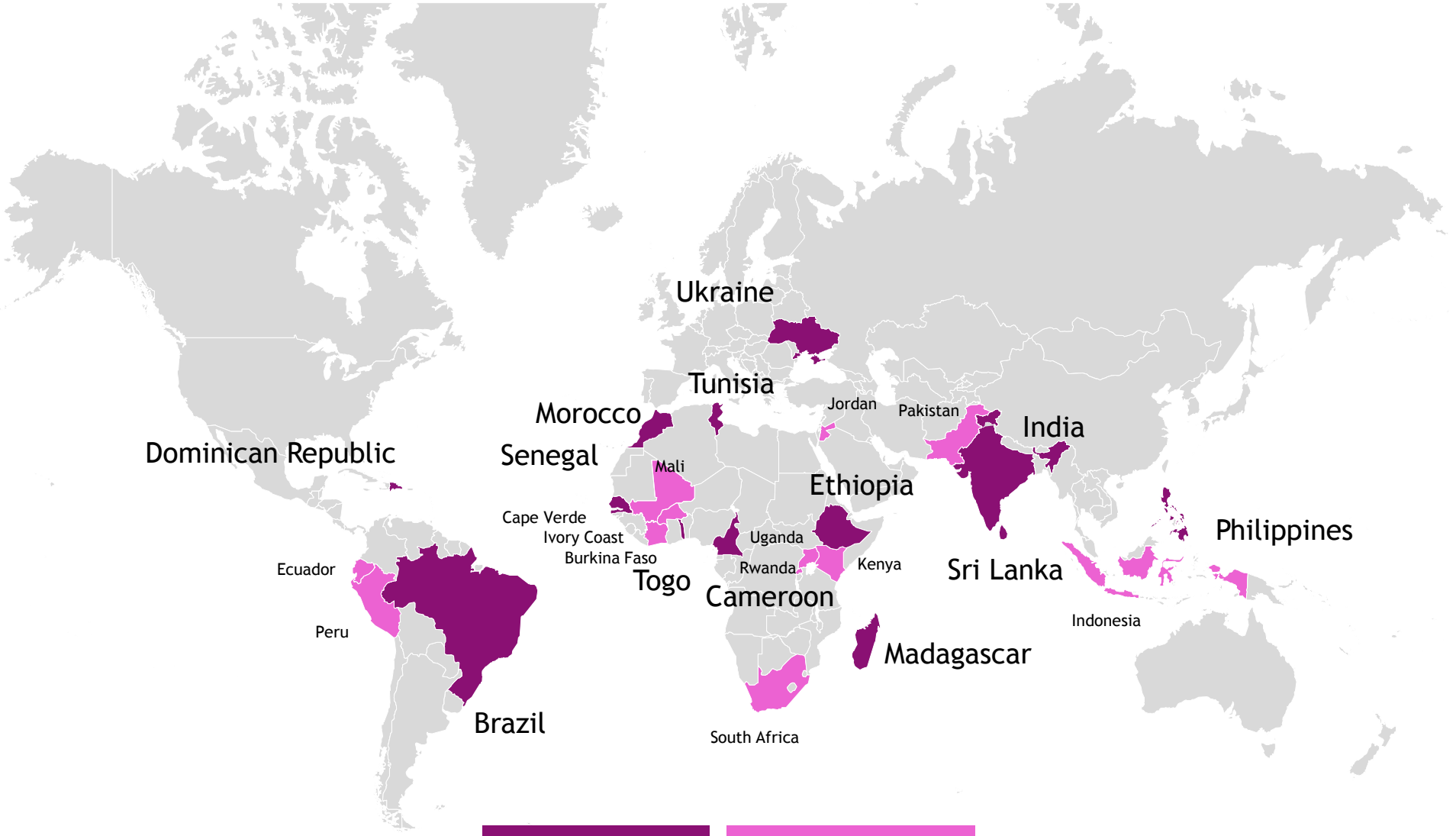
Frameworks for supporting SUMP elaboration at the local level



Interfacing with Financial Assistance



Beneficiary Partner Cities and Countries



Mobilise Your City

www.MobiliseYourCity.net

Visit us along the COP23 in Bonn!

Contact: Contact@MobiliseYourCity.net

Markus Delfs (Coordinator of the Secretariat)

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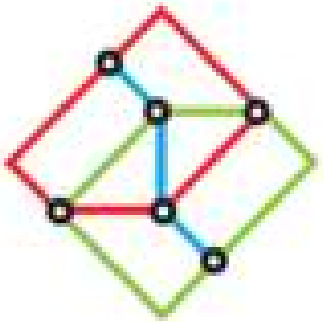
Reda Souirgi (AFD): souirgir@afd.fr

Follow us on Twitter:

- **@mobiliseCity**
- **#mobiliseyourcity**



Transformative Urban Mobility INITIATIVE

Dr. Christian Mettke (GIZ)
Email: christian.mettke@giz.de

11 Partners

Transformative Urban Mobility INITIATIVE

ADB · C40 CITIES · giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH · Federal Ministry for Economic Cooperation and Development · KFW · WORLD RESOURCES INSTITUTE

ITDP Institute for Transportation & Development Policy · ICLEI Local Governments for Sustainability · CAF · Partnership on Sustainable Low Carbon Transport · UN-HABITAT

http://transformative-mobility.org/

Targets

Transformative Urban Mobility INITIATIVE

(1) Accessible transport systems for economic growth and prosperity

Support our partner cities in reducing congestion and creating accessible environments for people and the economy

(2) Healthy and clean cities as livable places

Support our partner cities in reducing the number of traffic fatalities and transport-related air pollution

(3) Social inclusion for urban dwellers

Support our partner cities in providing affordable access to public transport services and safe walking infrastructures for all population groups

(4) Climate-sensitive urban transport development

Support our partner cities in building resilient structures and reducing greenhouse gas emissions in urban transport

How we promote sustainable Mobility

Transformative Urban Mobility INITIATIVE

1000 Game-changers

- Ambitious training initiative
- Supporting leaders in transformation processes
- Learning, networking, reflecting
- Promoting partnerships

Move Fast

- Promotion of pilot activities
- Promotion of development dynamics
- Make innovations visible

Financing

- Mobilization of a total of EUR 1 billion by KfW in cooperation with other donors

All 3 pillars are closely linked and support each other.

Pictures: © GIZ SUTP Photo Collection

Training objectives

- Be familiar with the basic principles and elements of NUMPs as well as the MobiliseYourCity (MYC) initiative;
- Have learnt different case studies and best practices in national urban transport policies, institutional frameworks and financing strategies including design options in investment support programmes;
- Be aware of options how to incentivise better urban mobility planning and stimulate investment via a NUMP.

Key Questions

- What are the **approaches around the world** with regard to national policies, programs and legislative frameworks that enable implementation of ambitious sustainable urban mobility actions?
- How to enhance **institutional coordination** between various national and local government institutions, private sector stakeholders and civil society, and strengthen human capacity?
- What can be done in the future in order to improve **financing sustainable urban mobility** to deliver positive results in climate change mitigation and quality of life?
- What are the **good practices** and where are they located?
- What are suitable options to enhance sustainable urban mobility in my **political economy** through NUMPs?

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- **Introduction to National Urban Transport Programmes NUMPs**
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Challenges in developing cities

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Humans love to move, travel, discover…

by different ways and modes…

Challenges in developing cities

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

In most cities, mobility is dominated by personal motorized transport.

Many people choose cars to move around…

Challenges in developing cities

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Road transport is a major contributor to air pollution and climate change.

Transport contributes to 23% of energy-related CO2 emissions and is still growing!

Challenges in developing cities

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Worldwide, 1.3 Million road deaths and up to 50 Million people injured per year

Challenges in developing cities

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

10-25% of urban areas are taken by road transportation infrastructure -
A lot of space for cars but…

Challenges in developing cities

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

…where is the space for people?

the silent pedestrian, the invisible cyclist must be seen… and heard


MONEY CHANGER
MANEY CHANGER


FAME


PLS. TURN ON HEADLIGHTS


BRERA

Status Quo in many parts of the world

- Weak or non-existing regulations for integrated urban mobility planning, limited guidance on state-of-the-art planning processes

→ infrastructure-oriented transport planning vs. mobility behaviour and needs

- Limited guidance for designing safe and convenient walkways, cycling infrastructure and public transport integration

→ Outdated road building norms favour high speeds of motorised transport

- Uncoordinated funding mechanisms due to incoherent national urban transport policies

→ Lack of priority-setting for sustainable urban transport measures

Paradigm shift of urban mobility planning

„If you plan for cars and traffic, you get cars and traffic."

„If you plan for people and places, you get people and places."

Traditional Transport Planning	⇔	Sustainable Urban Mobility Planning
Focus on traffic	⇔	Focus on people
Primary objective: Traffic flow capacity and speed	⇔	Primary objectives: Accessibility and quality of life
Political mandates and planning by experts	⇔	Important stakeholders are actively involved
Domain of traffic engineers	⇔	Interdisciplinary planning
Infrastructure as the main topic	⇔	Combination of infrastructure, market, services, information, and promotion
Investment-guided planning	⇔	Cost efficient achievement of goals
Focus on large and costly projects	⇔	Gradual efficiency increase and optimisation
Limited impact assessment	⇔	Intensive evaluation of impacts and shaping of a learning process

Source: Rupprecht Consult, quotations by Fred Kent, President of „Project for Public Space": www.pps.org

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Why National Urban Mobility Programmes?

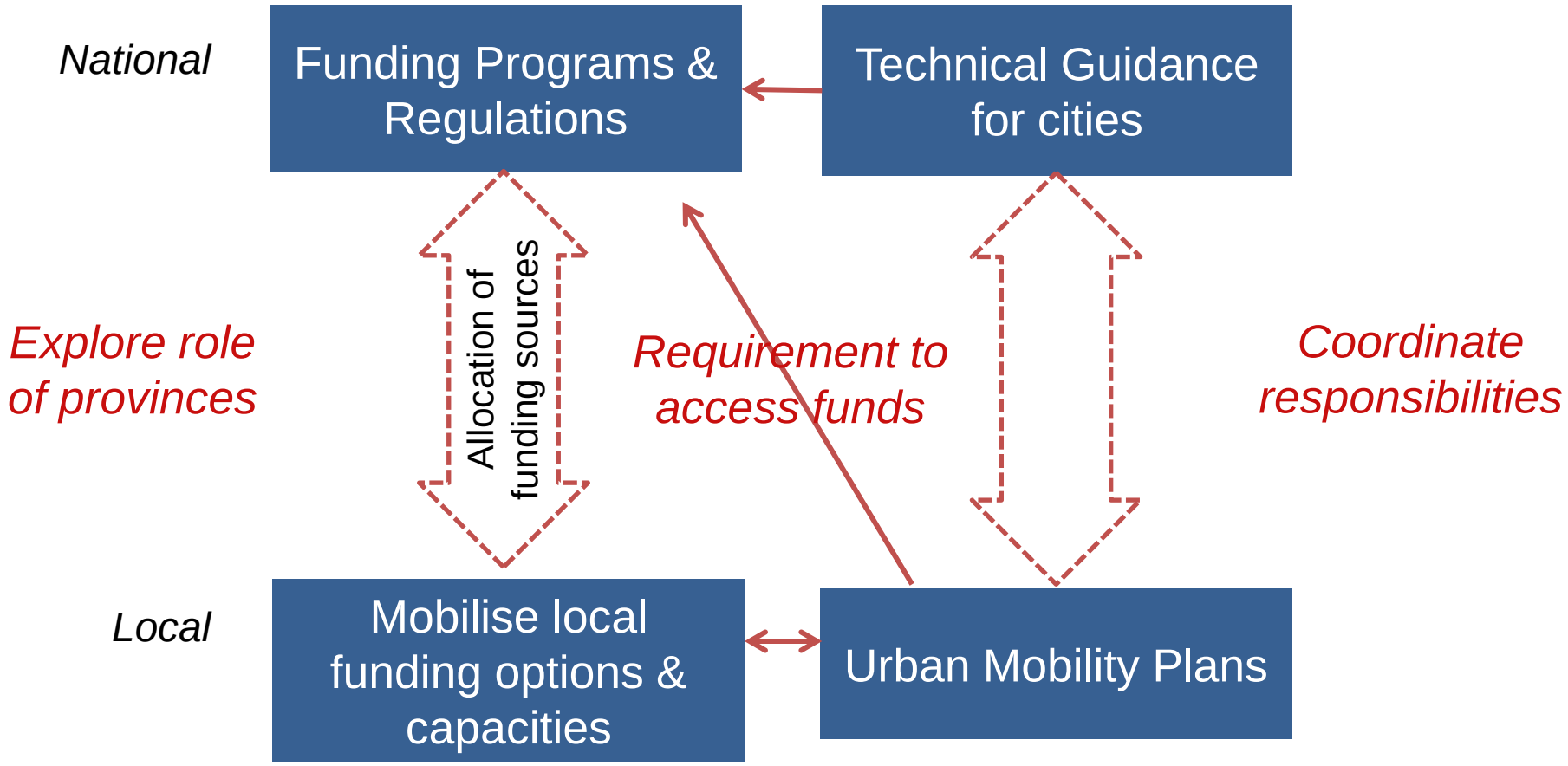
- **Urban areas are engines of national growth, and home of the majority of the population – including a large share of the poor**

- **Urban transport is a key part of the sustainable development package: it helps to achieve the national energy security, GHG emissions targets**

- **And helps solving growing urban problems: congestion, traffic fatalities, poor air quality, lack of physical activity and access to jobs and urban opportunities <u>for all</u>**

But it is not simply allocating money

NUMPs Building Blocks



What are National Urban Mobility Policies & Investment Programs (NUMPs)

Policy objective:

Agree on **targets**, establish a **framework** and **allocate authorities and means** to national institutions and/or city administrations to **regulate, plan, finance & implement** sustainable transport infrastructure and management projects in a **comprehensive and integrated** manner

Policy components:

- A sector vision, strategy, targets
- Institutional organization (interministerial + national versus local level)
- A comprehensive set of laws & regulations, tech. guidelines etc.
- Budgeting & financing (medium and long term)

What are National Urban Mobility Policies & Investment Programs (NUMPs)

Investment Program objective:

Agree and establish **regulatory and financial framework programs**, which **lead to significant transformation effects** in sustainable urban mobility through **development of selected transport modes** by the public and/or private sector.

Investment Program examples:

- National scrapping program of polluting vehicles
- Subsidy program to cities for construction of mass-rapid-transit systems
- Subsidy program to private sector to develop and maintain e-mobility infrastructure

Further NUMP examples

Policy component examples:

- Regulations and recommendations on urban mobility planning
- Regulations on road and street design (obligatory requirements / standards and/or facultative guidelines)
- Public transport regulations and service standards
- Parking management regulations
- General traffic rules
- Data management regulations
- Regulations on government borrowing
- Regulations on concessions and the role of the private sector

Further NUMP examples

Investment Program examples:

- Municipal Transport Sustainable Infrastructure Financing Programme (all modes)
- Cycling/NMT Infrastructure Investment Programme
- Road Safety Programme
- Access Enhancement Programme
- Traffic Management and ITS Programme
- Public Transport Service Subsidies
- Compensation Payments for discounted services for certain groups
- Capacity-Building Programmes
- Awareness-raising campaigns

What are National Urban Mobility Policies & Investment Programs (NUMPs) continued

Why a NUMP?

- **Agree** on vision & targets
- **Enable** relevant national and local institutions with knowledge, resources and required authorities to act and progress sector transformation
- **Ensure participation**, support and self-motivated follow-up by civil society and private sector
- **Connect** with technical and financial support at national and local level
- **Link** to international policies and targets (NDCs, New Urban Agenda etc.)

What are National Urban Mobility Policies & Investment Programs (NUMPs) continued

Key MYC Advisory Modules

- Initiation
- Status Quo Analysis
- Vision & Goal Setting
- Institutional Framework
- Budgeting & Finance
- Capacity Development
- Transport Technologies
- Monitoring & Reporting Coordination & Management

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NUMP Examples

Colombia
Mexico
Brazil
China
India

http://www.sustainabletransport.org/archives/1487

Example: Colombia

Fig. 6: *Integration of transport systems in accordance with local urban development plans is a key point of Colombian policies. A BRT system in Peretra, Colombia, offers fast boarding.*
©Carlos Felippe Pardo, Pereira/Colombia 2007

- National mass transit policy
- Up to 70% support for infrastructure
- USD 2.5 billion for BRT in seven cities
- Integrated public transport in intermediate cities
- Technical assistance
- Encourages private participation
- Metro in Bogotá (expected)

Example: México

- Mass transit program (PROTRAM) USD 2.4 billion
- 50% of project capital cost for Rail and BRT
- 5 Cities in operation/final construction; 34 cities identified
- Requires private participation

Fig. 13: *Suburban Train Mexico City financed by PROTRAM.* ©EMBARQ, Mexico

Example: Brazil

- National Urban Policy
- Comprehensive Mobility Plan (1,600 cities 20,000+)
- Growth Acceleration Program (PAC) USD 9.5 billion for BRT, LRT, Metro Infrastructure – co-funding from state and local levels
- Up to 50% national grants
- Additional loans for vehicles and rolling stock BNDES

Fig. 5: *Bus of the Rio de Janeiro BRT System.*
©Mariana Gil, Rio de Janeiro/Brazil

Example: China

- "Transit City" project 30 cities
- Requires co-finance of provincial governments
- In 2012 Beijing Metro reached 16-lines 442km - 1,050km expected by 2020
- Other 16 Chinese cities expanding Metro; 18 cities with Metro and LRT systems under construction; 22 cities with construction planned.
- 15 cities with BRT; 11 under construction or planning

Example: India

- National Renewal Mission JnNURM USD 20 billion
- Requires comprehensive mobility plan and co-funding from the state and local levels
- Resulted in implementation of Metro in 6 cities and BRT in 7 cities
- Encourgaes private participation

Bhopal BRTS Mybus
http://sustainablecitiescollective.com/sites/sustainablecitiescollective.com/files/Picture3.jpg

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Political System

Financing

Institutional Set-Up

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Political System

Financing

Institutional Set-Up

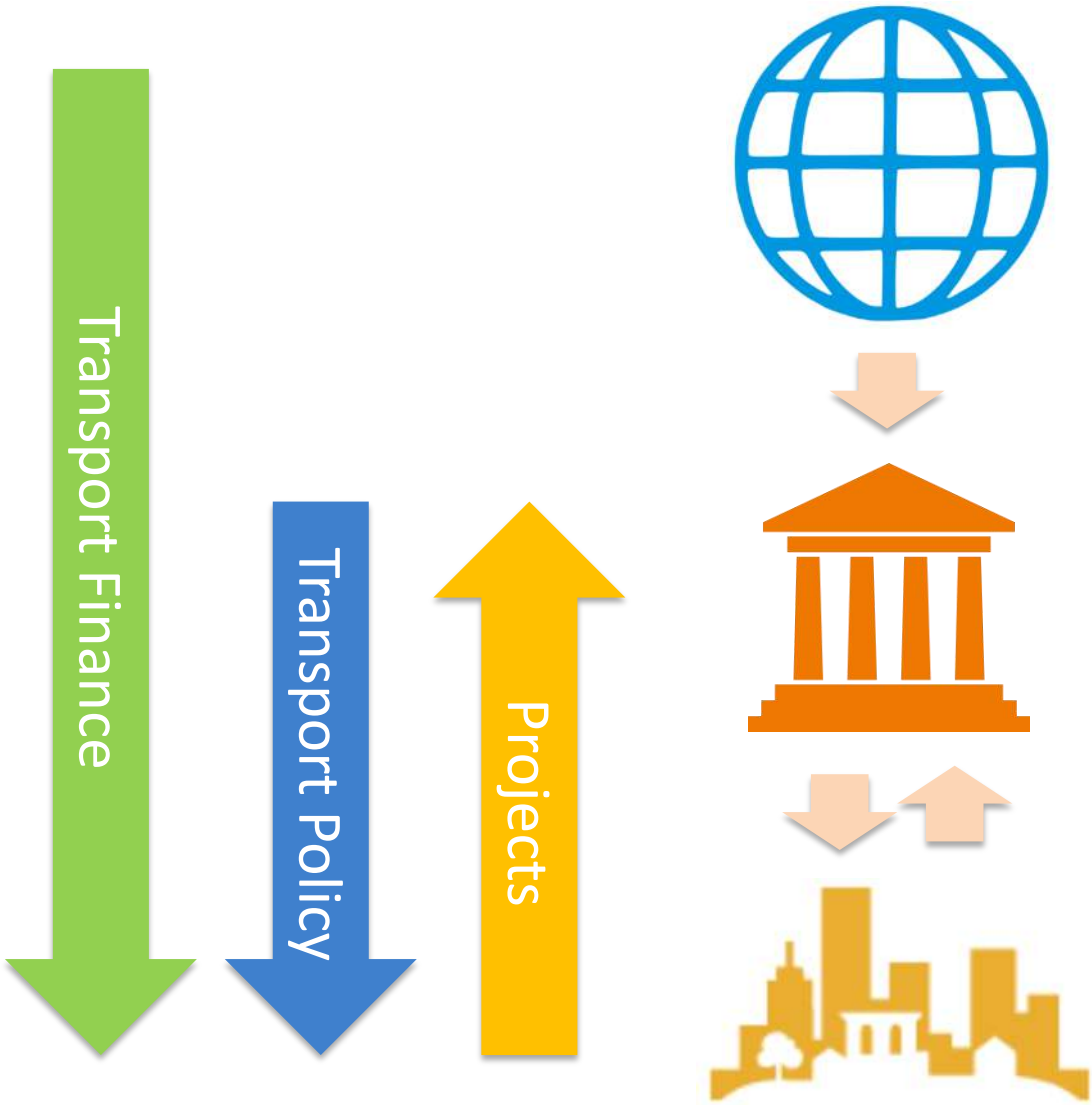
Session 1 National and local competencies

- Initial lecture (Dario Hidalgo) + OP Agarwal (India) – 30 minutes
- Q&A and introduction to group exercise
- 45 minutes group exercise
- Create good practice principles towards efficient and sustainable national policies / programmes (3-4 groups pending on size of participants) – each group with one facilitator

The importance of the political economy

How political forces affect the choice of policies, especially as to distributional conflicts and political institutions

(Alesina. A.F. (2007) Program Report: Political Economy NBER Reporter OnLine: 2007 Number 3 http://www.nber.org/reporter/2007number3/)


Transport Finance
Transport Policy
Projects
International Organizations
National Governments
City and Local Projects

Decision Making

- National to local (Colombia)
- National competition for funding – Project by Project (Mexico, Brazil, India, China)
- Co-funding requirement (30%-50%)
- Additional funding from national development Banks (Brazil BNDS, Mexico Banobras)

Example on the NUMP process - Colombia

- 1980's Decision on Metro de Medellín – Debt to be paid by Region and City, but project costs escalated and project took 13 years to be complete
- 1989 A national law was required to complete Metro de Medellin funding and create local sources (fuel tax)
- 1996 Law is modified to create the opportunity for other projects – mainly Metro in Bogotá, up to 70% funding from the national budget – funding process defined, inclusive of socio-economic evaluation
- 2000 Funding is approved for TransMilenio BRT system in Bogotá
- 2003 National Framework Created for Seven Large Cities in Colombia – Funding for BRT based integrated systems

Example of NUMP Process - México

- 2008 Interest by the Ministry of Finance for supporting mass transit using national road concessions surplus
- 2009 inclusion of mass transit as eligible destination of funding from the National Infrastructure Fund managed by Banobras (second floor national development bank)
- 2010 funding framework defined, up to 50% funding national – 50% state and local – additional funding made available for lending to states and cities and for the private operators
- Cities started applying to the funds – Pipeline 43 cities, 11 projects in operation

Example of NUMP Process - India

- Amendment of the constitution, transferring responsibilities to the Urban Local Bodies (including transport)
- Jawaharlal Nehru National Urban Renewal Mission (JnNURM) massive city-modernisation scheme launched by the Government of India
- Guidance developed for reform and investment – National Urban Transport Policy NUTP
  - Cities required to advance urban mobility plans – moving people not cars
  - Co-funding up to 50% urban transport projects
  - Foster public private partnerships
  - Create Special Purpose Vehicle SPV for Project development

Creation of NUMPs – Lessons learnt

- No single approach fits all contexts
- Different stakeholders, laws, regulations, preferences
- International organizations, consultants, academia, provide a key role in catalyzing transformations
- A local champion and capable institutions are instrumental
- Policy guidance, capacity building, financing mechanisms are core elements of NUMPs

NUMP Implementation Approaches

National Selection (Centralized)	National Selection (Competitive)	Local Imitative (mobilize national support)
Faster execution	Uncertain time table	Slow execution
Opportunity of mobilizing international finance		Difficult to get international funding
Difficult to get local commitment	Higher local commitment	
Project may be detached from local needs	Best projects get funded	Project may be well adapted to local context
May include diverse cities with varied capacities	Bigger cities with larger capacity get funding first	Need to develop local capacity as part of the project cycle
May not get much public participation	Uncertain local participation	May be able to mobilize large local participation
Some projects may not be cost effective	Cost – effectiveness may be an important criterion	May not be cost-effective

Policy Guidance – Recommended Approach

- **Strategic:** not inputs (money -projects) but outputs (impacts: economic, social, environment)
- **Integrated:** land use and multimodal transport
- **Effective:** maximize impact, ensure deliverability, manage risks

Example: Brazil

- Strategic guidance: requirement of comprehensive mobility plans to seek national funding

http://www.wrirosscities.org/news/seven-steps-creating-sustainable-urban-mobility-plans-across-brazil

Example: Colombia

TransMilenio empieza a cambiarle la cara al municipio de Soacha

Por: REDACCIÓN CUNDINAMARCA | 6:57 p.m. | 28 de Diciembre del 2013

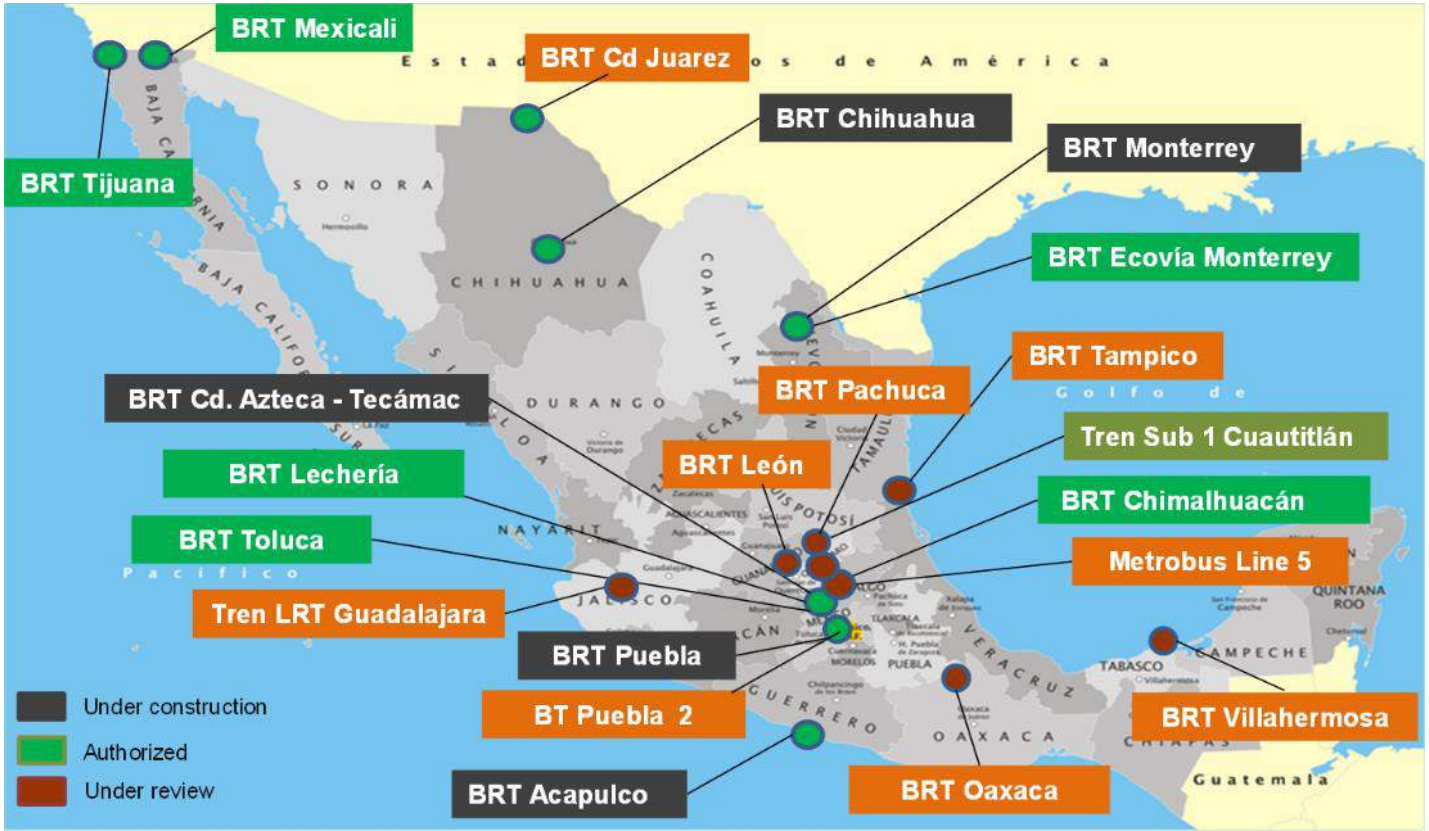
Trancones monumentales se viven en la autopista Sur. Foto: Abel Cárdenas / EL TIEMPO

http://www.eltiempo.com/colombia/bogota/ARTICULO-WEB-NEW_NOTA_INTERIOR-13322977.html

- Strategic Guidance: Requirement of Comprehensive Mobility Plan and Project Evaluation

Example: México

- Strategic guidance: urban mobility plan and Project Evaluation



Example: India

- Strategic Guidance: National Urban Transport Policy (NUTP)
  - Urban Mobility Plan
  - Creation of Unified Metropolitan Transit Authority (UMTA)
  - Constitution of Special Purpose Vehicle (SPV)
- Bus financing

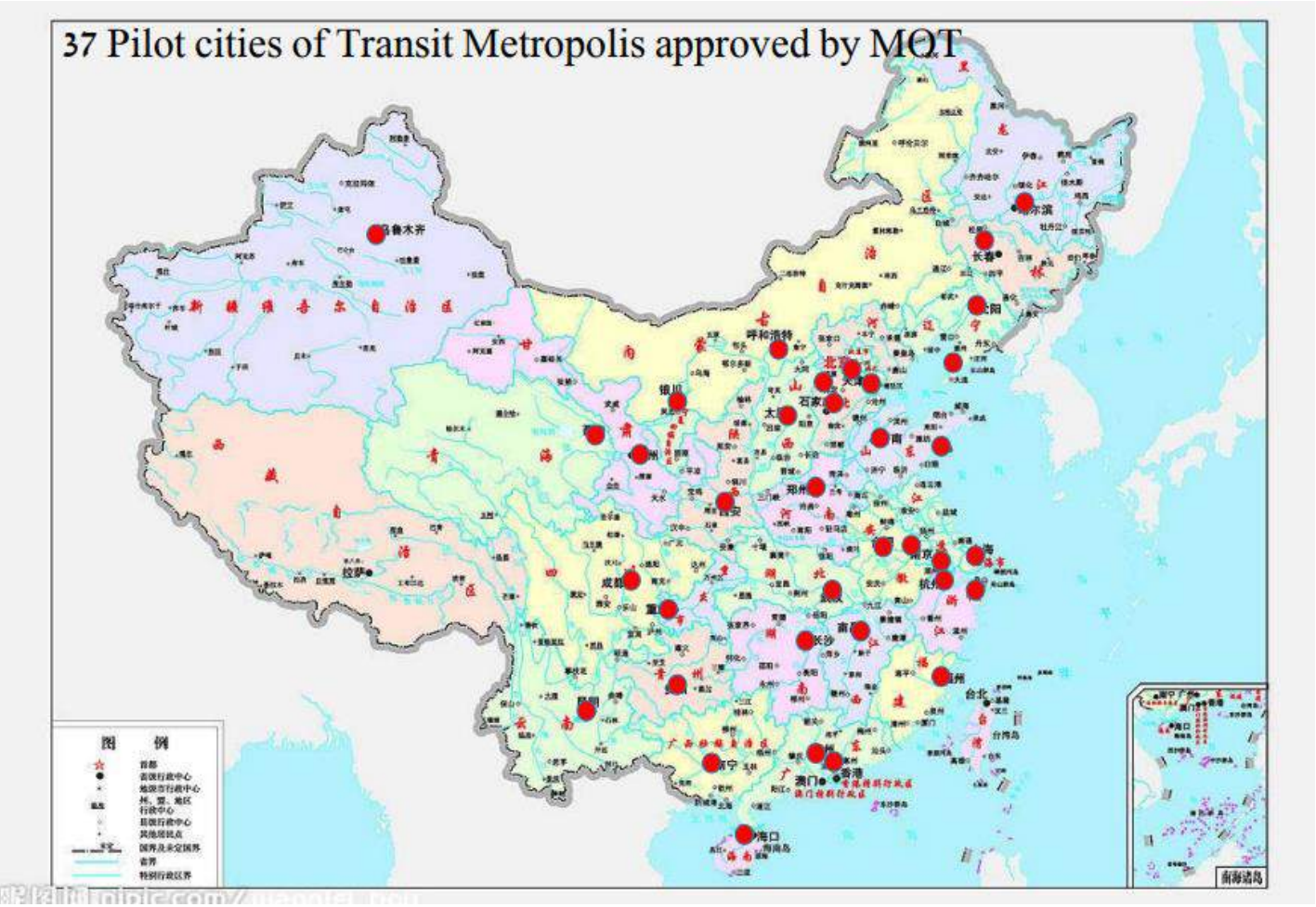
Example: China

Strategic Guidance

- From priority of public transport to Transit Metropolis
- From transport sector to multi-sector, city government
- Indicators in 5-year plan
- Motorized mode share in public transport (more than 60%)
- Coverage of public transport station in central areas (100%)
- Bus operation speed in peak time (more than 18 km per h)
- Green bus percentage (more than 50%)
- Mortality rate (less than 0.04/million vehicle km)

http://19343a27nxyv1ifure2nq0aw.wpengine.netdna-cdn.com/wp-content/uploads/sites/4/2014/09/03.-Haoran-Chu.pdf

Example: China



http://19343a27nxyv1ifure2nq0aw.wpengine.netdna-cdn.com/wp-content/uploads/sites/4/2014/09/03.-Haoran-Chu.pdf

Policy Guidance – Review of Examples

- **Strategic:** requirement of planning and some institutional development 
- **Integrated:** land use and multimodal transport – mostly just transport, some cases just transit corridors 
- **Effective:** diverse impacts, delays in delivery, operational risks not solved 

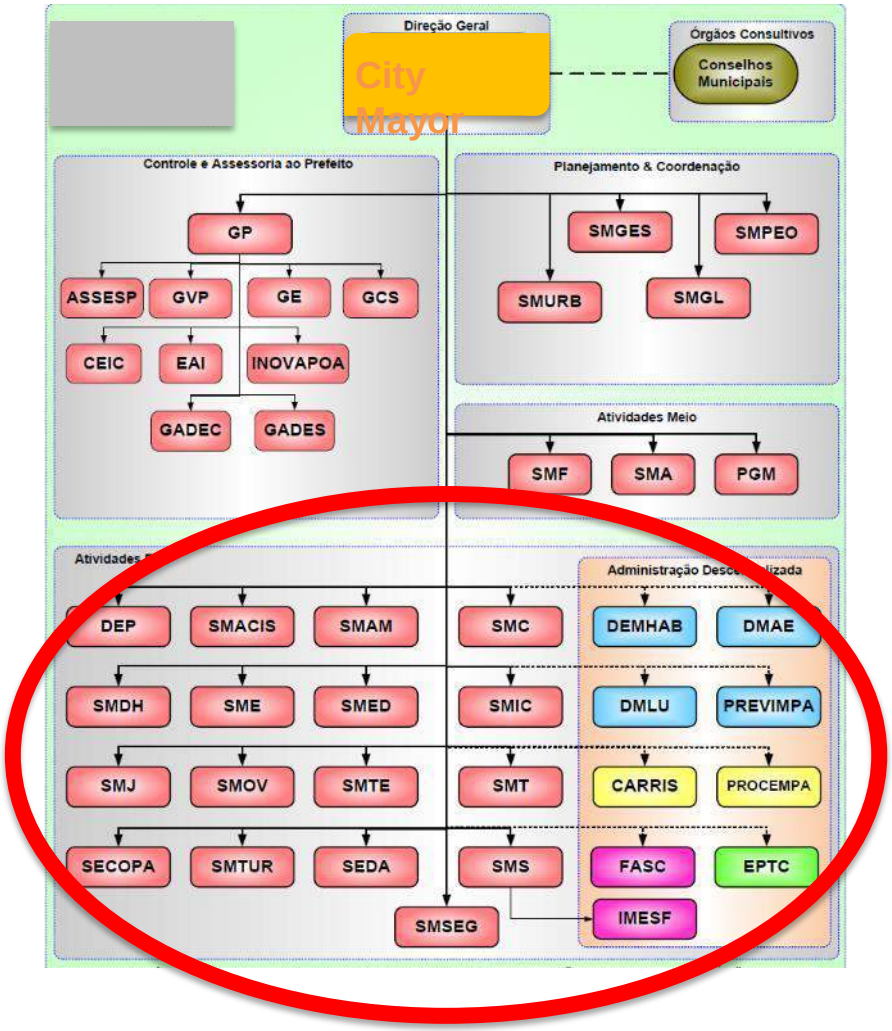
Lessons learned from NUMP processes

- No national support → very little progress in sustainable urban mobility
- Not just money: capacity building, institutional development – need to go beyond "compliance in paper"
- Relatively easy to fund infrastructure – very difficult to advance operations reform
- Clear procedures and decision making processes: guidelines and evaluation criteria for project funding
- Co-funding mobilizes local financial effort, increases commitment and selection of more cost-effective processes
- Continuous process of adaptation, improvement, revision

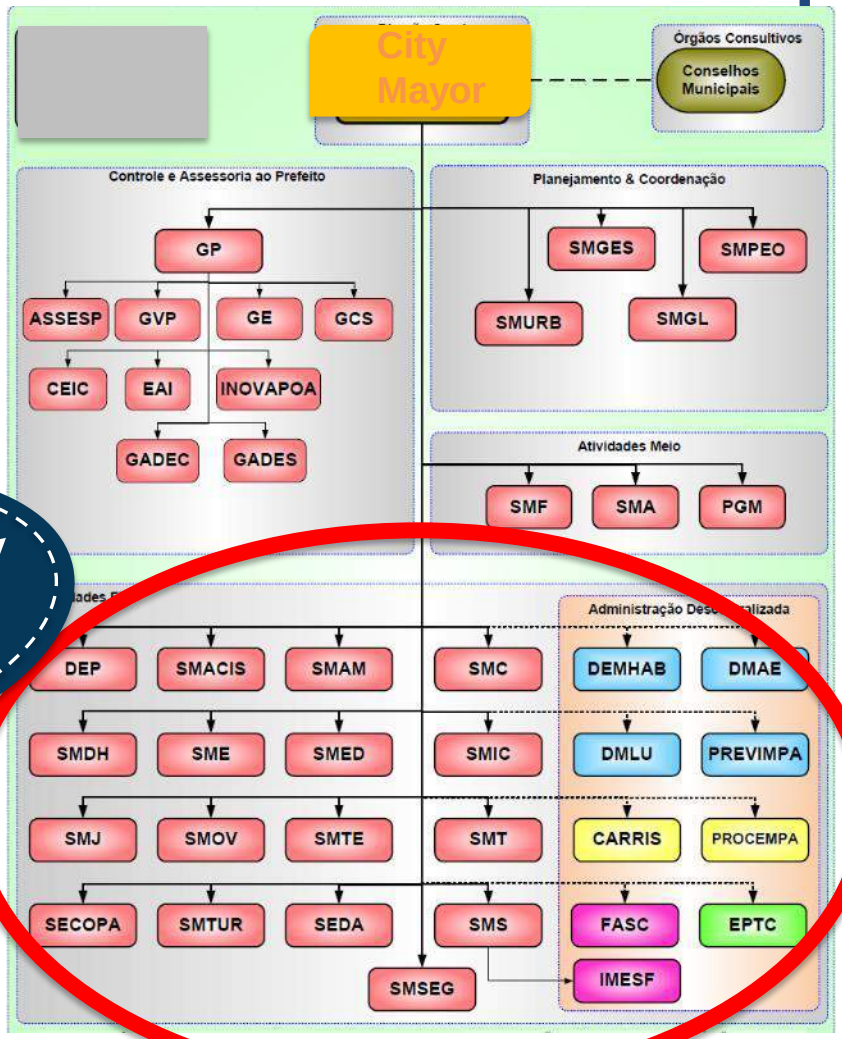
Barriers of Implementation

Source: Luis Antonio Lindau, Dario Hidalgo and Adriana de Almeida Lobo (2013) Barriers to planning and implementing BRT systems, THREDBO 13

Institutional complexity

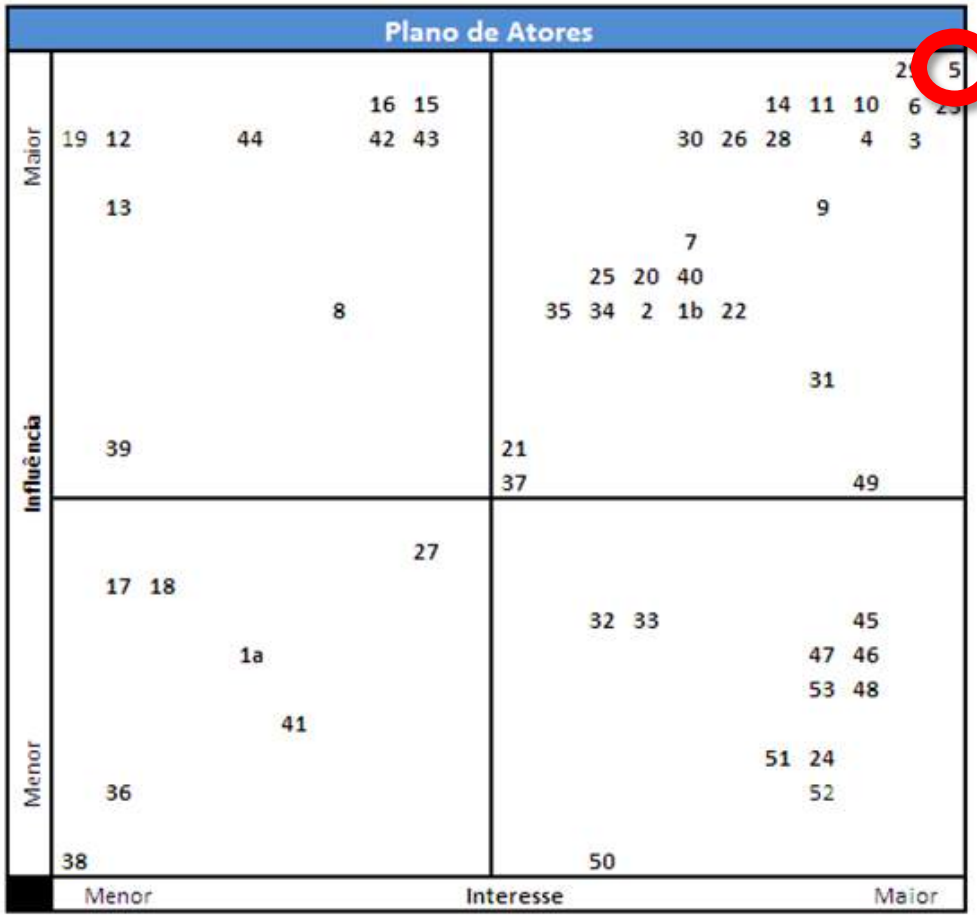


Lack of technical capacity



CONSULTANCY SERVICES

Many stakeholders with conflicting interests



Atores envolvidos			
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3	concessionários municipais	30	BNDES/Finame
4	concessionários metropolitanos	31	Sindicatos dos rodoviários
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21	Sindicato dos taxistas (depois)	48	consultoria de projeto
22	CBTU	49	PRODABEL
23	SETOP	50	Associacao de moradores Pampulha
24	SEDRU	51	CRTTs
25	Assembleia legislativa MG	52	agencia metropolitana
26	Ministerio das cidades	53	empreendedores (terminais)
27	DNIT		

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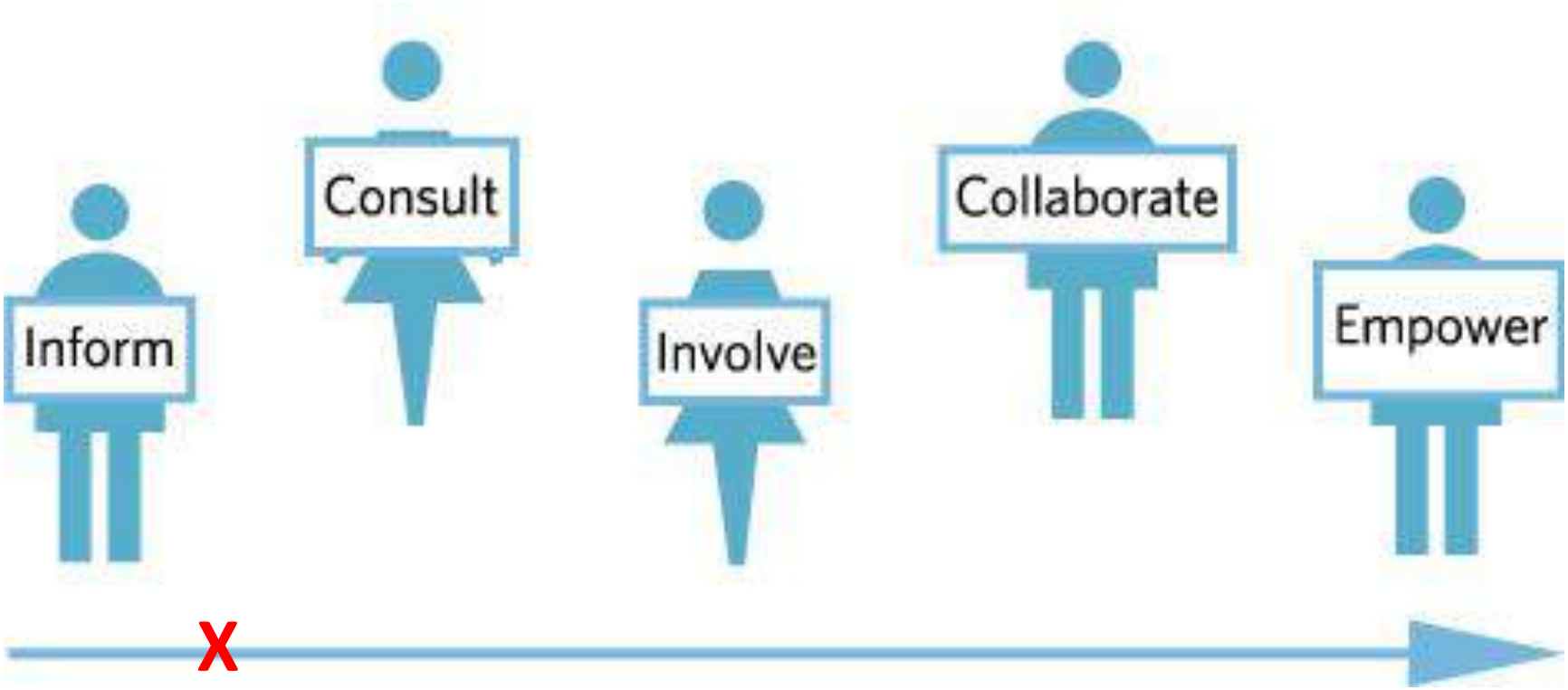
National Government´s perspective

Traditional bias towards road capacity expansion

Opposition from existing operators

Need to leapfrog



Lack of effective mechanisms for real stakeholder participation

User protests

Discontinuities due to political cycles

Insufficient funding: unfinished projects

Barrier Analysis

Barrier	Solution
Institutional complexity	Organize metropolitan public transport authorities
Lack of technical capacity	Work with universities and research institutions to advance continuous training programs
Many stakeholders with conflicting interests	Find common ground through effective participation mechanisms (consensus may not be achievable)
National economic perspective favorable to cars (industry, jobs, banking, taxation)	Work with appropriate ministries to advance a sustainable agenda (show the numbers)

Barrier Analysis

Barrier	Solution
Traditional bias towards road capacity expansion	Show overall impacts of sustainable mobility, inclusive of job creation and contribution to overall economic growth, not just the positive externalities
Opposition from existing operators	Find mechanisms to make them part of the new process (or mitigate their exit). Recognize that this has a cost
Lack of effective mechanisms for real stakeholder participation	Foster mechanisms for more community involvement
User protests	Focus on quality and affordability
Discontinuities of the political cycles	National and international cooperation help mitigate
Insufficient funding	Good project preparation

45 minutes group exercise: Create good practice principles towards efficient and sustainable national policies / programmes (3-4 groups pending on size of participants) – each group with one facilitator

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Political System

Financing

Institutional Set-Up

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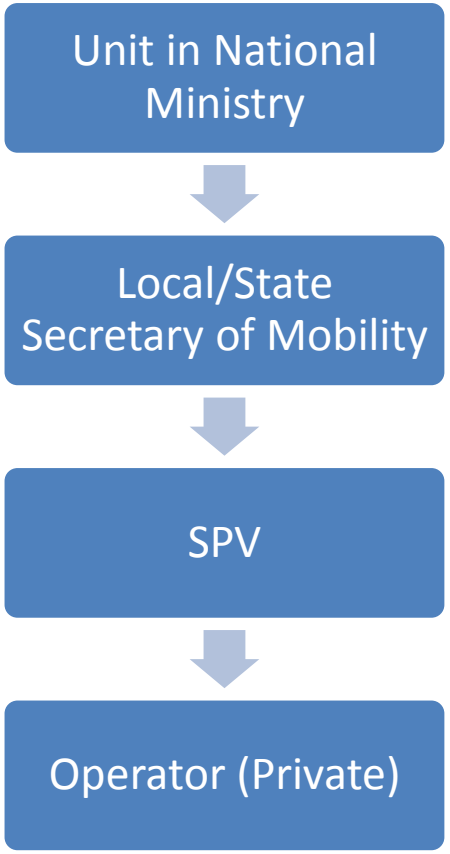
Institutions

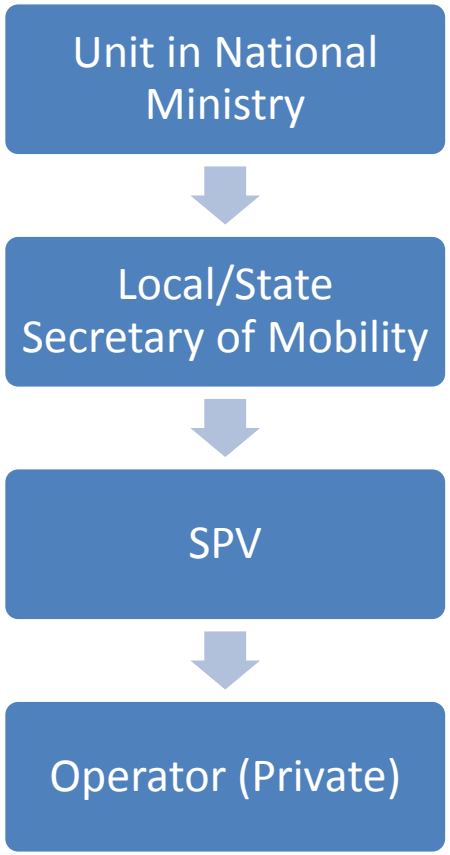
- **Coordination**
- **Capacity**
  - Technical
  - Financial
  - Managerial
- **Participation**

Typical Institutional Arrangements

- National Programme Unit
- Local transportation authority (need for metropolitan coordination)
- Special Purpose Vehicle for Project delivery and operation
- Private Operation under PPP Scheme



Typical Institutional Arrangements



- Programme supervision – compliance with process – capacity building
- Approval plans - coordination
- Planning-Construction-Contracting Operations – Control Contracts
- Service delivery

	Goal setting	Planning and Supervision	Construction	Operation
Colombia	President and Cabinet (Conpes)	Natl. Planning Dept + M of Transport + M of Finance	Municipality (Roads Dept or SPv)	Private (public) operators contracted by SPV
Mexico	President and Cabinet (National Plan)	S of Transport, S of Finance, Banobras	State or Local Body	Private (public) operators contracted by state or local body
Brazil	President and Cabinet	Ministry of Cities	State or Local Body	
China	Five year plan	Ministry of Transport	Local body	Public transport agency
India	Prime minister and cabinet	Ministry of Housing and Urban Dev.	State or Local body	Public Transport Undertaking or Private

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Establishing Unified Metropolitan Transport Authorities (UMTA)

Presentation by

O.P. Agarwal

Outline

- Why UMTA
- Functional framework
- Key issues in setting up UMTAs
  - Legal basis
  - Jurisdiction
  - Functions
  - Manpower
  - Management structure
  - Financing
- Evolution
- Important lessons
- The Indian context and way forward

Why UMTA

- People choose travel modes based on origin to destination convenience - Typically this involves multiple modes
- Good integration between modes – easy transfer - allows them to leave their cars/motorbikes at home
- Hence, need for a holistic approach
- Needs to balance supply side measures with demand side measures
- This requires many actions to happen in an integrated manner
- These actions are required to be taken by multiple agencies – often cutting across different levels of govt.
- Institutional fragmentation needs to be unified
- This is the case for an UMTA

Agencies responsible for transport in Delhi

Name of the Agency	Major Functions	Level of Govt.
Transport Department	Overall planning, regulation, oversight of the bus services, management of driver licensing, vehicle registration, route licensing and road transport fare fixation	State
DTC	Operate publicly owned buses in the city	State
DMRC	Operate metro rail services in the city	State + Central
DIMTS	Management of the BRT and contracted bus services	State
Indian Railways	Operate sub-urban rail services	Central
PWD	Construction of Roads and bridges	State
Environment Department	Prescribe emission standards	State
Delhi Police	Traffic management and enforcement of traffic laws	Central
MCD / NDMC	Approving building plans, managing public spaces, provision of water and sanitation, providing parking	Local
DDA	Master planning, land allocation, removal of encroachments, parking facilities, etc	Central
Delhi Cantt Board	Management of cantonment areas	Central

Policy Formulation
Establishing a vision
Long term planning
Capital Financing

Strategic Level

Strategic Functions

Infrastructure Planning

Planning for roads, bridges, and other infrastructure

Regulation

Functions Under Law
Issue of permits for public tpt
Fare fixation
Driver license & Vehicle registn
Traffic Management
Enforcement

Service Planning

Planning functions
Demand assessment
Network & route design
Service planning
Inter-modal coordination

Infrastructure Construction / Maintenance

Construction & maintenance of Roads/bridges, etc

Terminals, Bus stops, Control systems, Database, Ticketing, Accident recovery

Common Facilities

Public Transport Operations

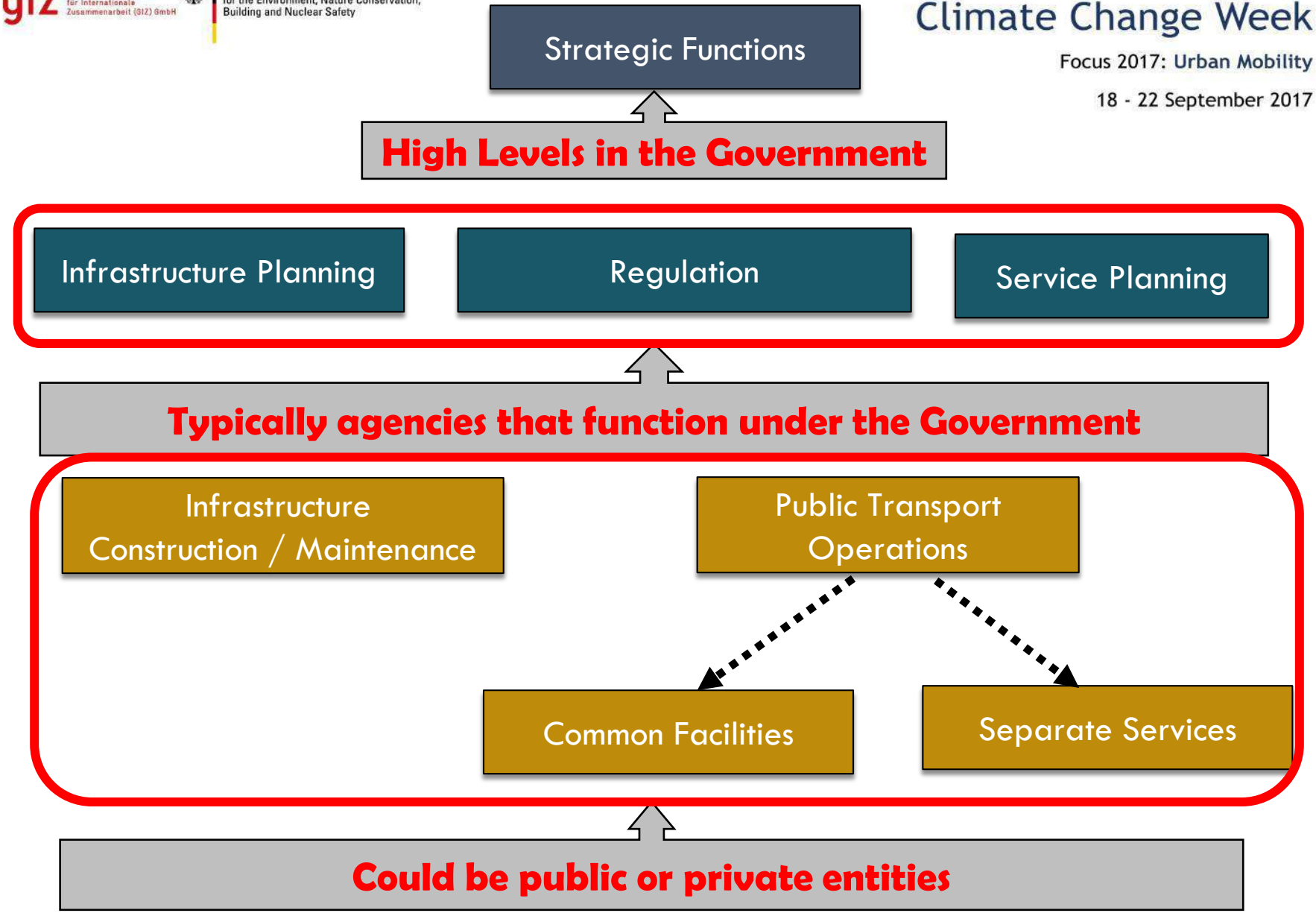
Metro

BRT

Buses

Separate Services

Para Transit


Strategic Functions
High Levels in the Government
Infrastructure Planning
Regulation
Service Planning
Typically agencies that function under the Government
Infrastructure Construction / Maintenance
Public Transport Operations
Common Facilities
Separate Services
Could be public or private entities

Key issues in setting up UMTA

- Legal basis
- Jurisdiction
- Functions
- Manpower profile and size
- Management structure and accountability
- Financing

Legal basis

- Under Own legislation
- Under Generic legislation
- Under Executive orders
- Under Mutual Agreement

City	Option adopted
Paris	Framework Law for such organizing authorities for public transport
London	Greater London Authority Act, 1999 Subsidiaries - under a generic Companies Act
Vancouver	TransLink – South Coast British Colombia Authority Act - Subsidiaries – Generic legislation
Singapore	Land Transport Authority Act
Lagos	LAMATA Act
Cairo	Presidential Decree
Most Cities in India	**Executive Order**

Jurisdiction

- Single city
- 2 or more cities
- Several contiguous cities
- Entire metropolitan region

Authority	Jurisdiction
LTA Singapore	Single city
AMCO, Pereira	3 cities
STIF, Paris	1284 municipalities
TfL, London	Greater London
TransLink	Greater Vancouver
LAMATA	Lagos Metropolitan Area

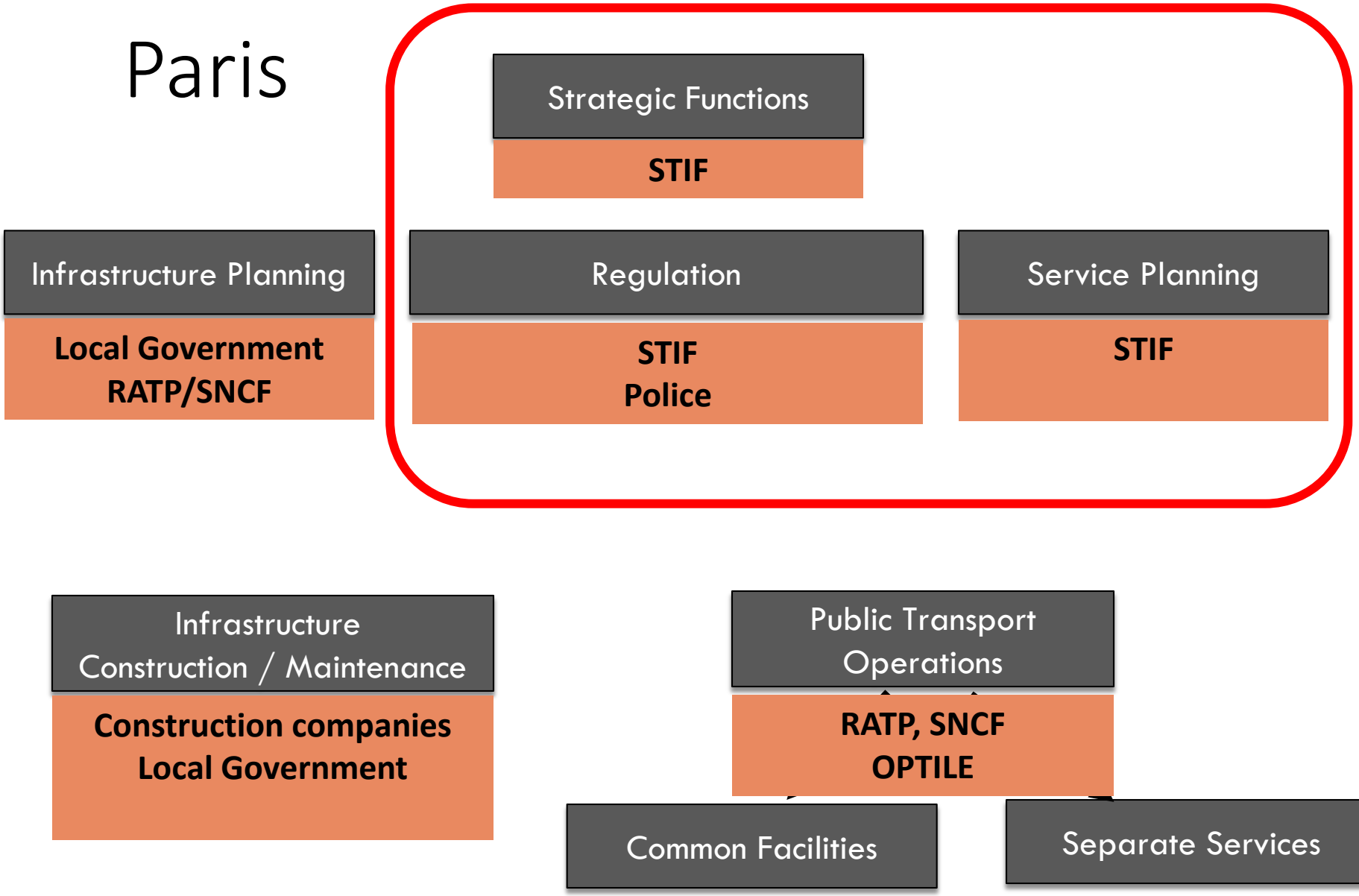
- **Depends on people's travel patterns - need for cross jurisdictional transport systems**
- **Increasing recognition of city clusters**

Functions

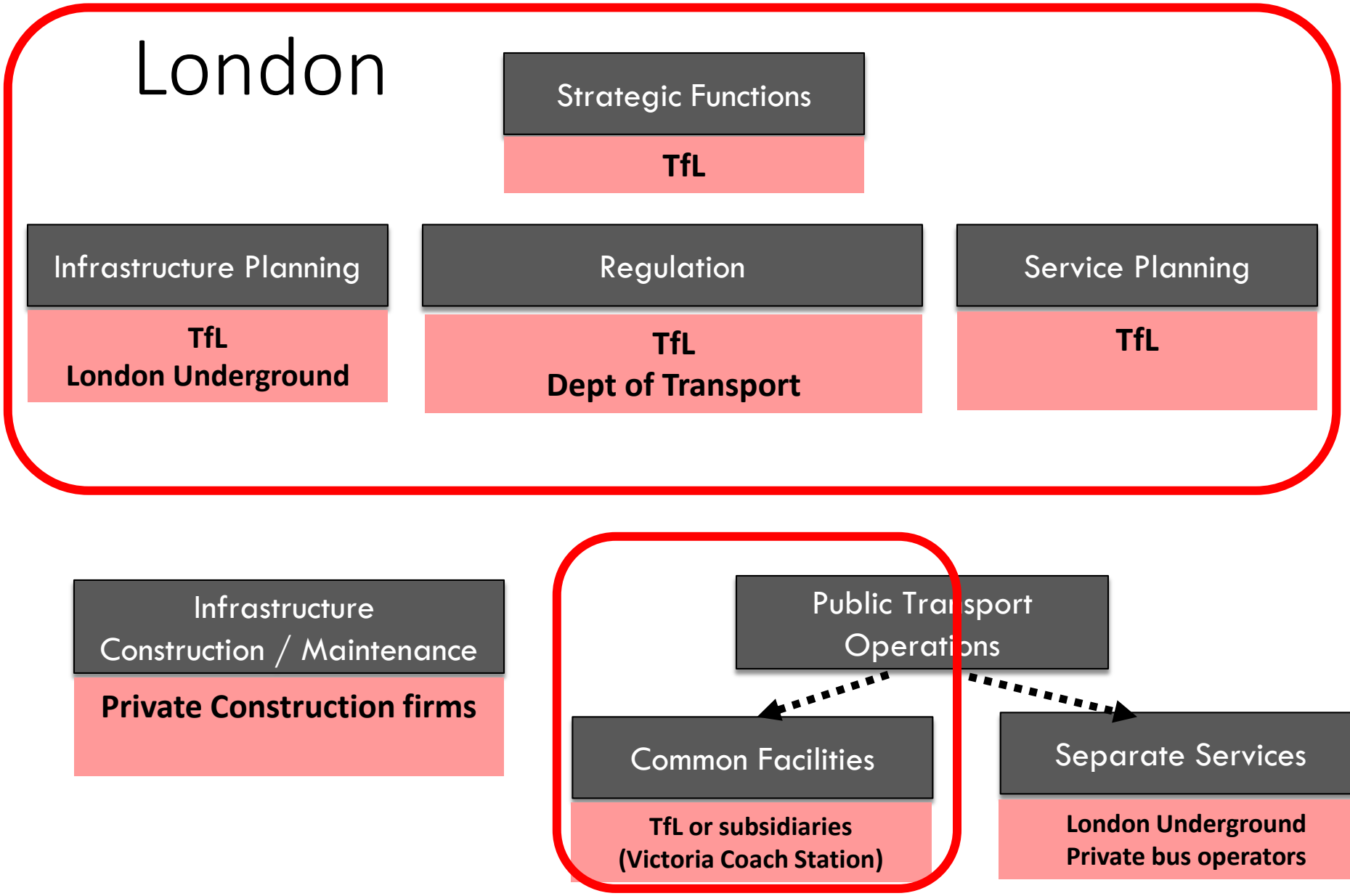
- Only public transport or a more comprehensive responsibility
- Only planning, and regulation or also operating
- If operating – on its own or through subsidiaries

Agency	Responsibility
STIF, Paris	Only public transport – only planning and regulation. Operations by RATP (public sector) and Optile (private sector)
TfL, London	Comprehensive – Planning and regulation. Operates metro through subsidiary, plans for bus system and concessions to private operators
LTA, Singapore	Comprehensive – only planning and regulation, Operations by private operators
TransLink, Vancouver	Comprehensive – planning, regulation and operations – operations through subsidiaries
LAMATA, Lagos	Comprehensive – only planning – operations contracted

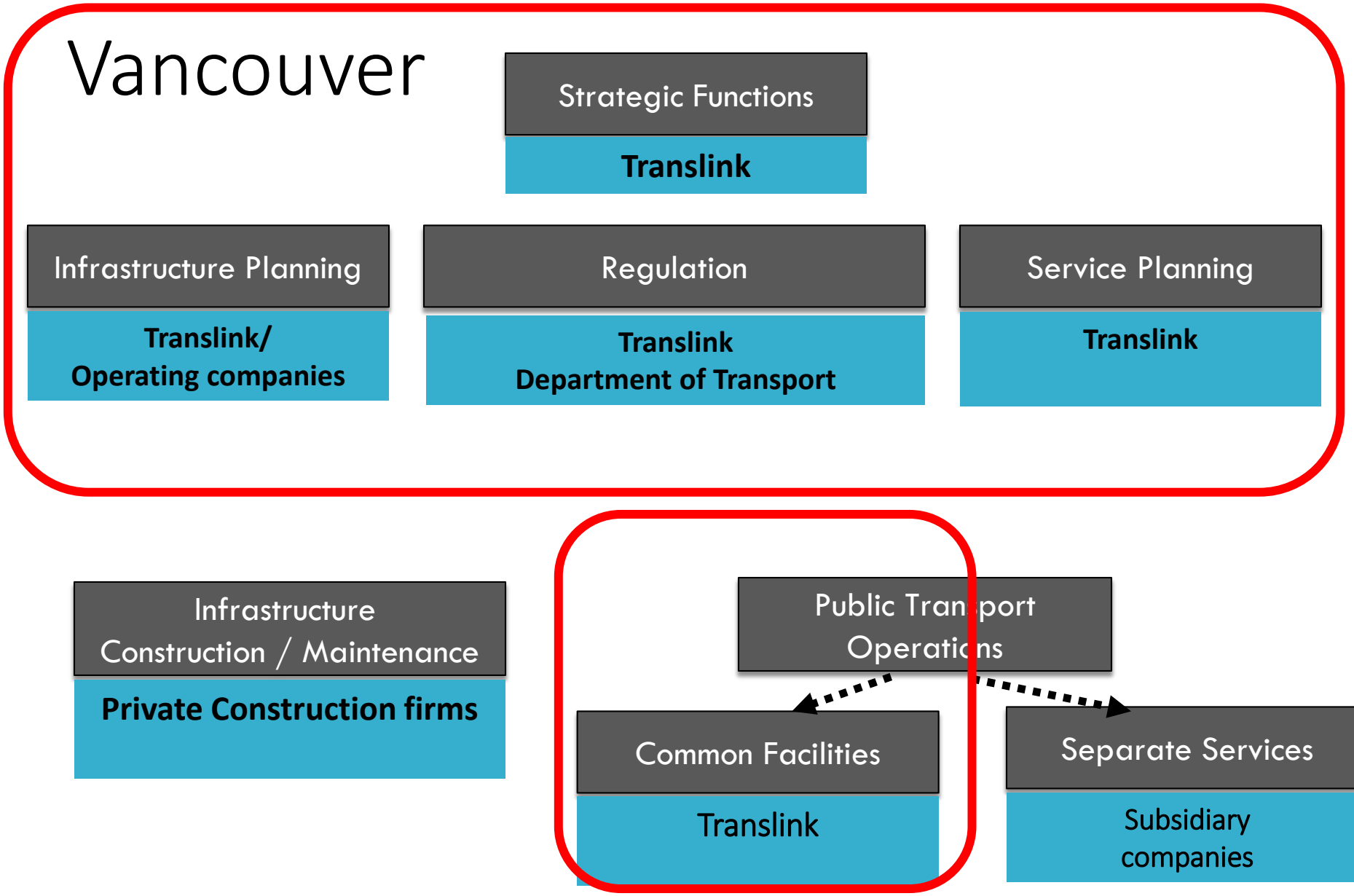
Paris


Strategic Functions
STIF
Infrastructure Planning
Local Government
RATP/SNCF
Regulation
STIF
Police
Service Planning
STIF
Infrastructure
Construction / Maintenance
Construction companies
Local Government
Public Transport
Operations
RATP, SNCF
OPTILE
Common Facilities
Separate Services

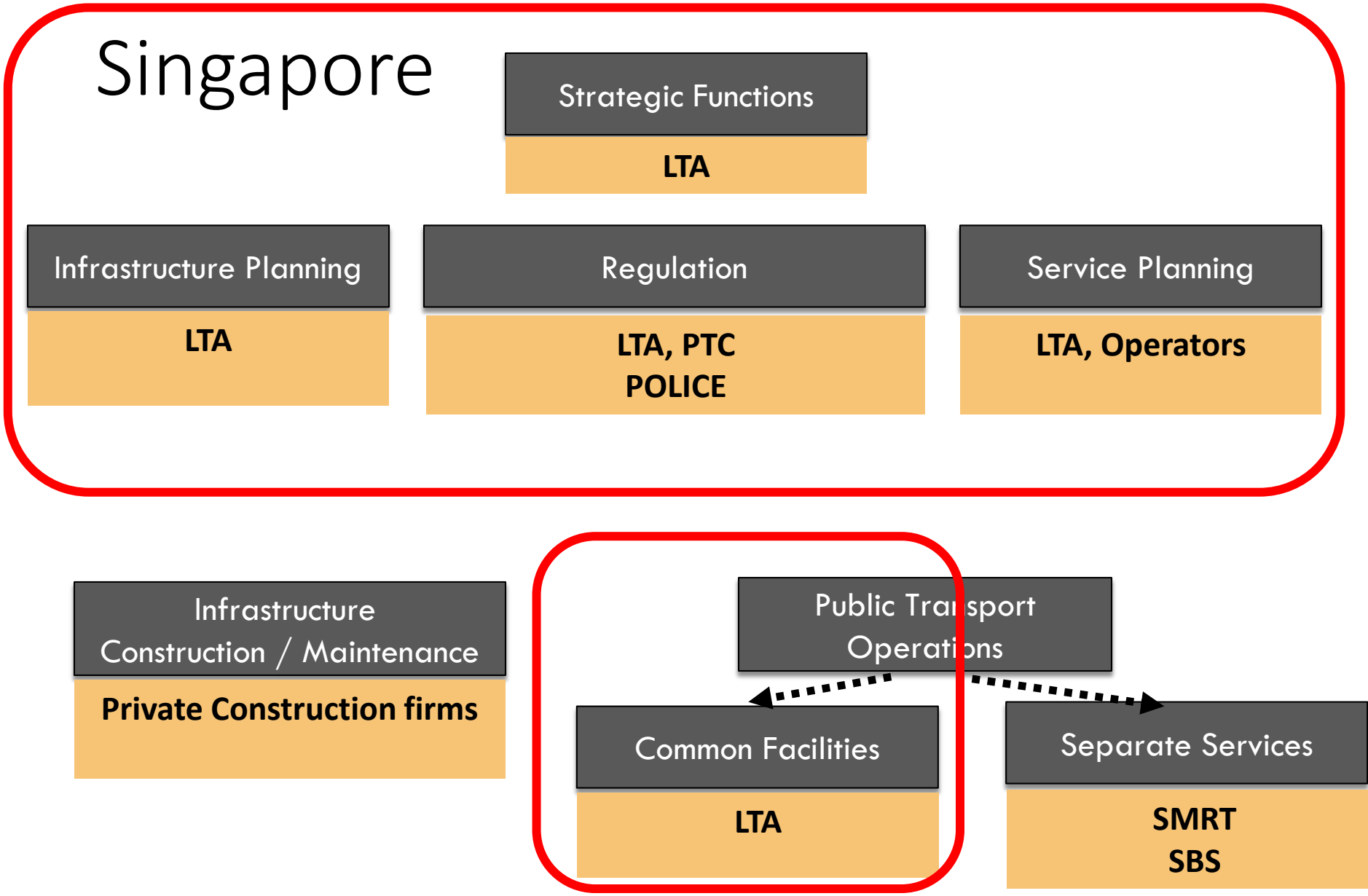
London


Strategic Functions
TfL
Infrastructure Planning
TfL
London Underground
Regulation
TfL
Dept of Transport
Service Planning
TfL
Infrastructure
Construction / Maintenance
Private Construction firms
Public Transport
Operations
Common Facilities
TfL or subsidiaries
(Victoria Coach Station)
Separate Services
London Underground
Private bus operators

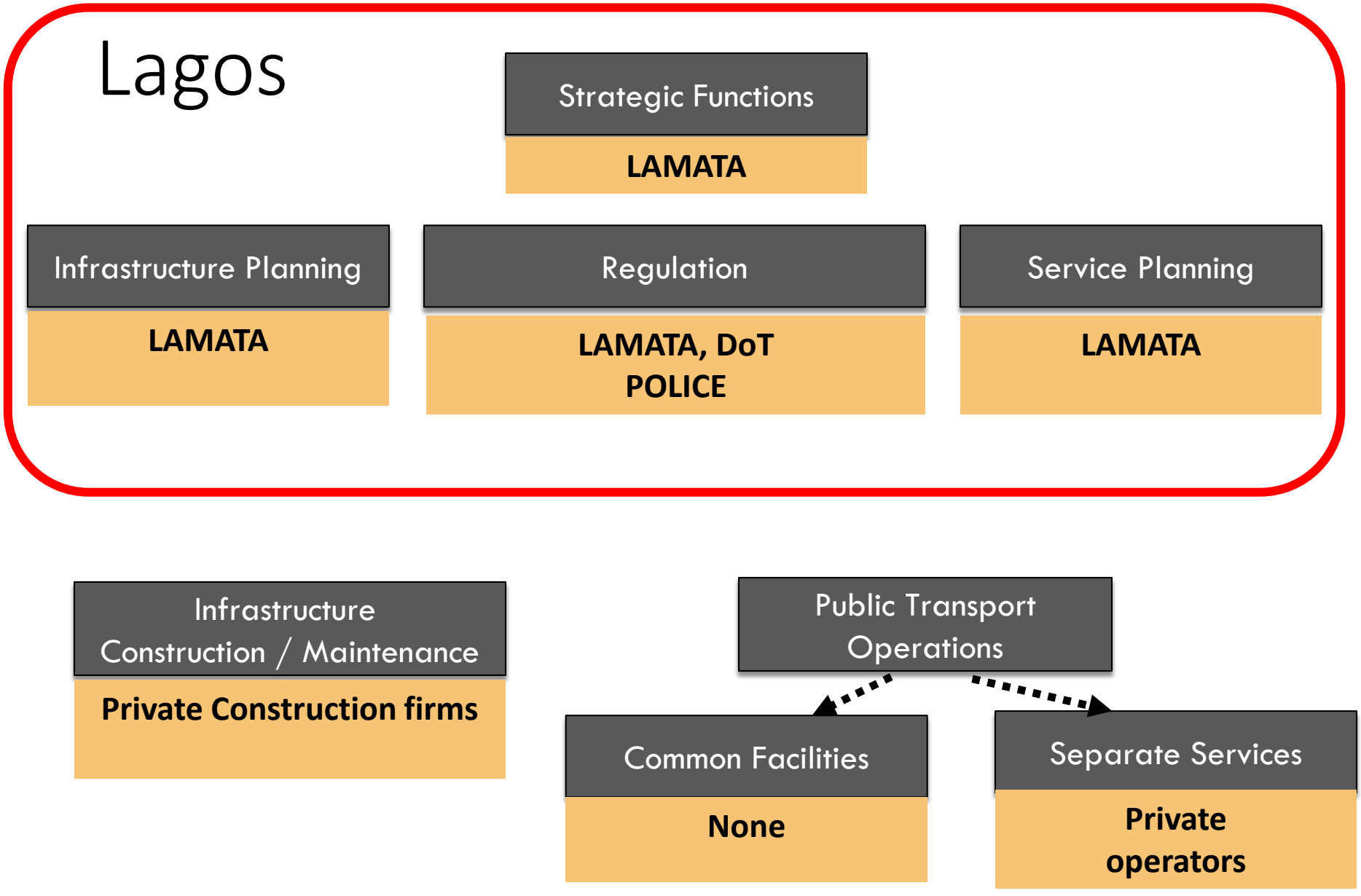
Vancouver


Strategic Functions
Translink
Infrastructure Planning
Translink/
Operating companies
Regulation
Translink
Department of Transport
Service Planning
Translink
Infrastructure
Construction / Maintenance
Private Construction firms
Public Transport
Operations
Common Facilities
Translink
Separate Services
Subsidiary
companies

Singapore


Strategic Functions
LTA
Infrastructure Planning
LTA
Regulation
LTA, PTC
POLICE
Service Planning
LTA, Operators
Infrastructure
Construction / Maintenance
Private Construction firms
Public Transport
Operations
Common Facilities
LTA
Separate Services
SMRT
SBS

Lagos


Strategic Functions
LAMATA
Infrastructure Planning
LAMATA
Regulation
LAMATA, DoT
POLICE
Service Planning
LAMATA
Infrastructure
Construction / Maintenance
Private Construction firms
Public Transport
Operations
Common Facilities
None
Separate Services
Private
operators

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Transport Authorities – 6 Global Examples

Authority Tasks

City	Autho-rity	Roads, Traffic, Parking, Non-Motorised Transport			Public Transport						Freight Transport			
					Infrastructure			Services			Infrastructure			Services
		Plan	Design & construct	Manage	Plan	Design	Construct	Plan	Regulate	Operate	Plan	Design	Construct	Regulate
Singapore	LTA	X		X	X	X	X	X	X		X	X		
Hong Kong	TD	X		X	X	X	X	X	X		X			
Bangkok	BMTA				X	X		X	X	X				
New York	NYTA				X	X	X	X	X	X				
Manila	LTD								X					
Munich	MVV				X			X	X					
Paris	STP				X	X		X	X					
London	London Transport				X	X		X	X					

Source: GIZ. 1b. Urban Transport Institutions (Richard Meakin)
http://www.sutp.org/files/contents/documents/resources/A_Sourcebook/SB1_Institutional-and-Policy-Orientation/GIZ_SUTP_SB1b_Urban-Transport-Institutions_EN.pdf

Effective Public Transport Management

- Coherent policies and implementation strategies
- Public transport industry open to competition and regulatory control
- Regulatory frameworks with solid legal basis, mixing commitments and incentives
- Control institutions with adequate capacity and Independence (planning, regulation, guidance for industry development)
- NUMPs shall encourage the creation of unified metropolitan transport authorities – beyond paper

Singapore – Land Transport Authority

- Integrated policy
- Planning, design, development and control of ALL the land transport infrastructure
- Controls, but does not operate MRT, buses and taxis
- Builds and maintains roads, manages traffic and enforcement
- Licenses vehicles, quota, congestion pricing and parking
- Board: 15 representatives from industries, academia, labor unionons and community organizations

Hong Kong - MTR

- Public corporation organized for future privatization
- Has launched stocks successfully
- 186% cost recovery through user fares and collateral activities (land development)
- Policy Continuity over 30+ years
- Adequate professional experience supported by consultants (not everything in house all the time)
- Financial discipline
- Regulation and coordination

Paris - STIF

- Regional association (Ile de France), City of Paris, 7 départements (counties) and others
- Gradual evolution since 1959
- Organizes, coordinates, modernizes and finances public transport
- Prepares the Urban Mobility Plan (PDU), defines routes, selects operators, defines operational, administrative and financial guidelines, ensures coherence of the investment programs
- Defines the level of transport tax (VT), defines fare policies, supervises students transport, on-demand services and boats

New York–Metropolitan Transit Authority MTA

- Plans, builds, operates the most extensive network in North America: 15 million people from NYC to Long Island, South of New York State and Connecticut.
- Multimodal: subway, buses, commuter rail
- 2,622 million trips every year (1 out of 3 transit users in USA, 2/3 rail users)
- 4 out of every 5 trips to the CBD

http://web.mta.info/mta/network.htm

MTA Totals at a Glance*	
2014 operating budget	$13.6 billion
Annual ridership	2,621,866,180
Average weekday ridership	8,552,646
Rail and subway lines, and bus routes	345
Rail and subway cars	8,778
Buses	5,701
Track miles	2,047
Bus route miles	2,858
Rail and subway stations	736
Employees	65,150

* Financial data as of January 1, 2014;
statistical data for year ending December 31, 2012.

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MTA

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New York City Transit

Metro & Buses

New York City Transit at a Glance*
Subway in four boroughs, buses and paratransit in five boroughs.

2014 operating budget	$10.1 billion
Annual ridership	2,331,836,169
Average weekday passengers	7,579,555
Subway lines	24
Bus routes	224
Subway cars	6,311
Buses	4,431
Track miles	659
Bus route miles	1,968
Subway stations	468
Employees	45,537

*Financial data as of January 1, 2014; statistical data for the year ending December 31, 2012.

MTA Bus Company

Buses (took over 7 franchises)

MTA Bus at a Glance*
Buses in four boroughs

2014 operating budget	$678.8 million
Annual ridership	120,877,799
Average weekday ridership	390,685
Bus routes	79
Buses	1,264
Bus route miles	927
Employees	3,629

*Financial Data as of January 1, 2014; statistical data for the year ending December 31, 2012.

Long Island Railroad

Long Island Rail Road at a Glance*
Rail lines in Nassau and Suffolk counties and in New York City

2014 operating budget	$1.8 billion
Annual ridership	81,753,411
Average weekday ridership	285,082
Rail lines	11
Rail cars	1,165
Track miles	594
Rail stations	124
Employees	6,414

* Financial data as of January 1, 2014; statistical data for the year ending December 31, 2012.

Metro North Railroad

Metro-North Railroad at a Glance*
Rail lines in Westchester, Putnam, Dutchess, Orange, and Rockland counties and in Connecticut and New York City.

2014 operating budget	$1.4 billion
Annual ridership	82,953,628
Average weekday passengers	281,331
Rail lines	6**
Rail cars	1,239
Track miles	795
Rail stations	122
Employees	6,002

* Financial data as of January 1, 2014; statistical data for the year ending December 31, 2012
** Includes a line not in service

Munich – MVV „1 network 1 schedule 1 ticket“

- Regional Railway (DB-Nacional)
- Suburban Railway (S-Bahn Region 442 km, 150 stations)
- Underground Railway (U-Bahn MVG 100 km, 100 stations)
- Light Rail (City Tram MVG 13 lines, 79 km)
- Buses (11 metropolitan lines, 50 urban lines)
- Regional Buses (40 companies, 500 buses, 200 lines)

MVV Munich - Goals

- Full integration public transport in the city and the region
- Common user interface – common branding
- Dynamic supply according to demand changes
- Integrate multiple modes: pedestrians, bicyclists and car users (parking)
- Catalyze technical and planning innovations
- Oriented towards sustainability

http://www.mvv-muenchen.de/fileadmin/media/Dateien/7_Der_MVV/dokumente/

Transport for London - TfL

- All public transport services, traffic management on arterial streets and planning new infrastructure
- Coordinates buses, taxis, underground, light rail, cable, boats, public bikes, and a museum
- 24 million daily trips: reliable, safe, sustainable
- Controls 580km arterial roadways and 6,000 signalized intersections, regulates taxis and congestion pricing scheme
  Invests in user information and control technology; open data, apps and maps

Table 2: Typology of metropolitan transport authorities

City	Name of Authority	Governing Body	Constituent Local Government Units	Public Transport Functions								
				Planning		Regulation		Fares/ Marketing		Infrastructure		
				Strategic Planning	Service Planning, Bus/Rail, Integration	Procuring and Regulating Services	Fare Setting	Managing Fare Collection System	Marketing PT Services	Planning PT Infrastructure	Funding PT Infrastructure	Managing Construction of PT Infrastructure
London	Transport for London	Appointed Expert Governing Board	Boroughs	✔	✔	✔	✔	✔	✔	By Boroughs		
Manchester (Model for 7 UK Metropolitan Counties)	Greater Manchester Passenger Transport Authority	Elected Representatives of constituent Councils	10 District Councils	✔	✔	✔	✔	✔	✔	By District Councils		
Paris region	Syndicat des Transports d'Ile de France	Council of representatives of central, department and region gov't	Departments and Region	✔	✔	✔	✔	✔	✔	✔	✔	✔
Lyon (French provincial model)	Urban Transport Perimeter (PTU)	Association of constituent town councils	25 town councils	✔	✔	✔	✔	✔	✔	✔	✔	✔
Frankfurt (German Model)	Rhein-Main-Verkehrsverbund GmbH	Supervisory Board Representatives of constituent cities districts and state	11 cities, 15 districts, State of Hessen	✔	✔	✔	✔	✔	✔	By Municipalities		
Singapore	Singapore Land Transport Authority	Appointed Board of Directors	No local governments	✔	✔	✔	By PTC	By Opera-tors	✔	✔	✔	✔
Metro Manila	Metro Manila Development Authority	Metro Manila Council of constituent Mayors	13 cities, 4 municipalities	✔	✔	By LTFRB	By LTFRB	✔	Oper-ators	✔	✔	✔
Hong Kong	Transport Bureau and Transport Department	Appointed Transport Advisory Committee	No local governments	✔	✔	✔	By TAC	By Operators		✔	By Works Dept	

LTFRB Land Transportation Franchising and Regulatory Board
PTC Public Transport Council
TAC Transport Advisory Committee and Chief Executive-in-Council

1b. Urban Transport Institutions (Richard Meakin)
http://www.sutp.org/files/contents/documents/resources/A_Sourcebook/SB1_Institutional-and-Policy-Orientation/GIZ_SUTP_SB1b_Urban-Transport-Institutions_EN.pdf

Review International Experiences

- Evolution according to local conditions
- The more advanced, the greater geographic coverage and modal integration
- Planning and regulatory functions kept at the highest level; construction and operation are sometimes integrated
- Values include service quality and sustainability
- Common branding and simplified user information systems
- Supported by advanced technologies; permanent improvement and innovation
- Combination of public and private sectors (operation only)
- There is no bias towards a particular mode or technology

60 minutes group exercise: Create good practice principles towards efficient and sustainable institutional set-up (3-4 groups pending on size of participants) – each group with one facilitator

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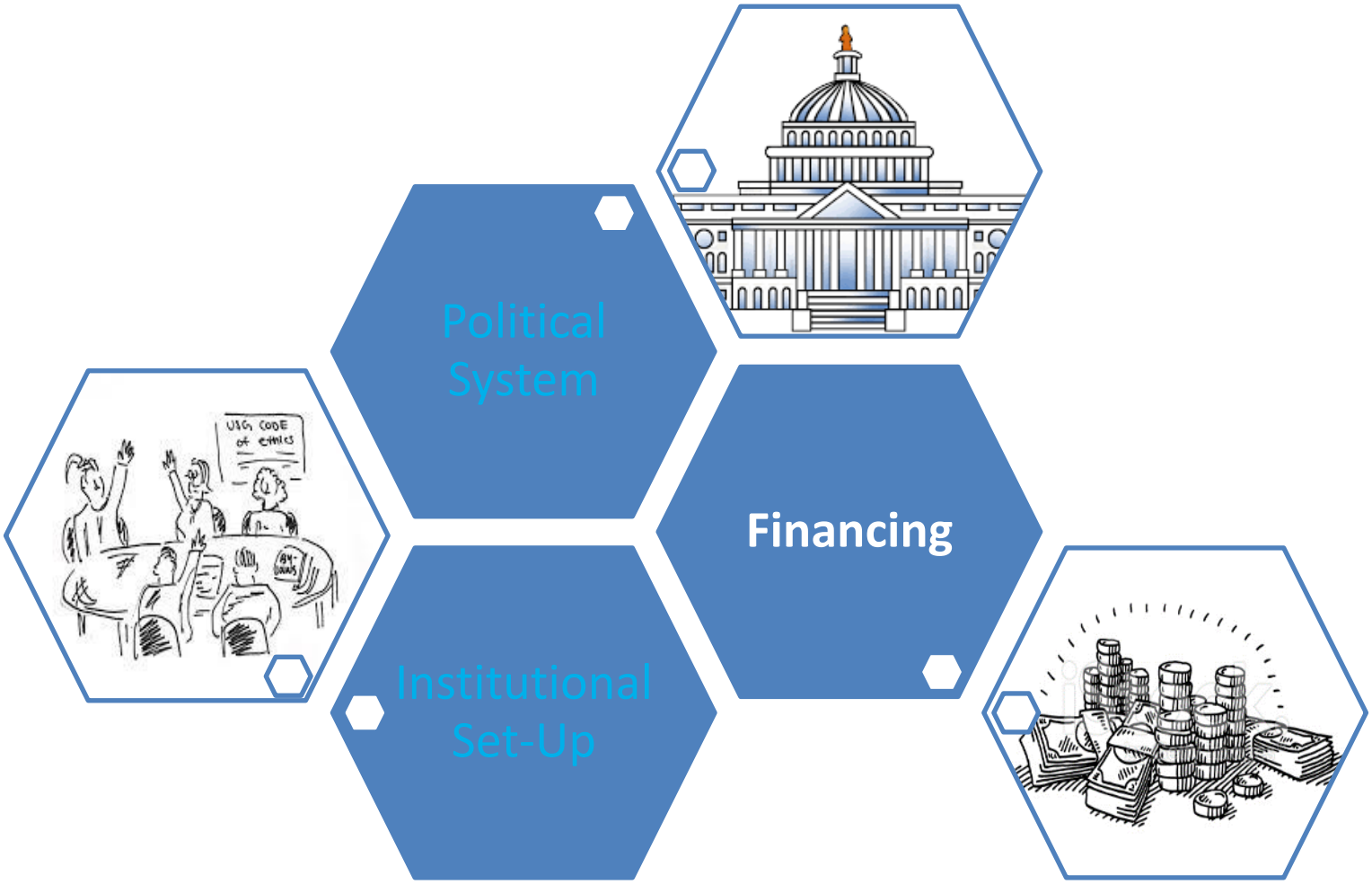
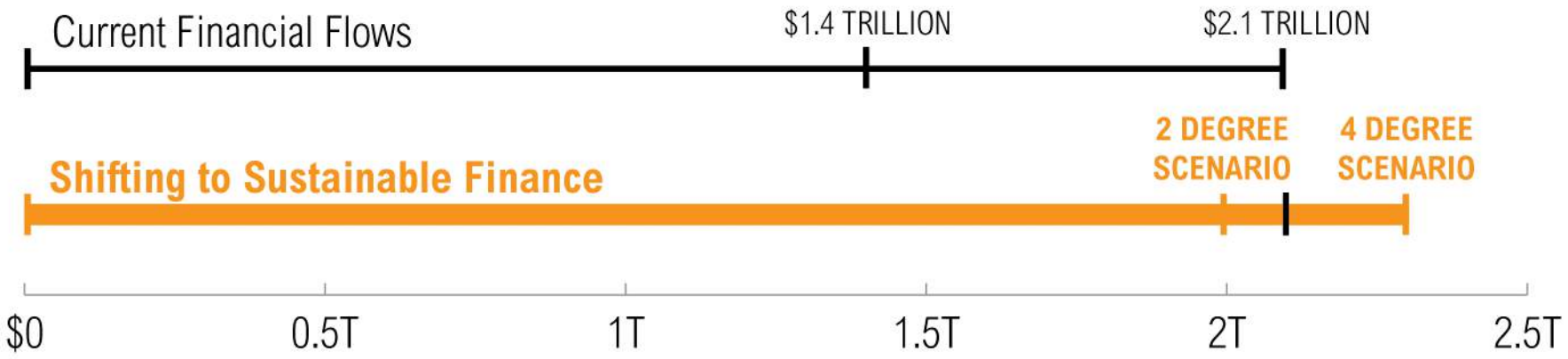


We need to spend differently, not just more



Transport spending across the world 2016, WRI study

Major Actors

Photo by Christopher Kost

Photo by Georg Döhn

Photo by Carlos F. Pardo

Financing of urban transport

ADB
Donors and International Organisations

crosscountry
PEUGEOT
Private sector
DVB
Macrobús

The real costs of transport – who is paying what?

- Time costs
- Vehicle and vehicle operating costs
- Public transport fares
- Private accident costs

Paid by transport users

- Infrastructure
- Accidents – health treatment, loss of family income, grief and suffer
- Air pollution, noise, vibration and associated health costs
- Climate Change
- Congestion & urban space consumption

Paid to a large extent by the society

Type of incentive or disincentive	Possible Economic Instruments	Selected Economic Measure(s)
• Discourage motorized vehicle ownership	• Tax/charge on vehicle purchase/ownership/scrappage	• Annual vehicle tax • Registration tax/charge • (Re)sales tax/charge • Scrappage tax/charge
	• Restricting the number of vehicles and/or new registrations	• Auction schemes competitive bidding for new licenses • Licensing car ownership
• Discourage motorized vehicle use • Encourage switch to public or non-motorized transport	• Tax/charge on vehicle use	• Fuel tax • Pay-at-the-pump (sur)charges
	• Tax/charge on road and/or infrastructure use • Restricting access to urban centers or special areas	• Parking fees • City tolls • Road pricing • Bridge tolls • Cordon pricing • Congestion pricing
	• Subsidies for public transport and/or multimodal transport (modal subsidies)	• Subsidized public transport fees • Subsidies for public transport networks and operation • Tax-deductible public transport expenses • P%R schemes
• Encourage lower emission technology use and innovation	• Taxes/charges on vehicle purchase/ownership/scrappage, • Taxes/charges on vehicle use, • Taxes/charges on road and/or infrastructure use	• Tax differentiations based on emissions • Carbon/energy taxes • Emission fees • Emission-based surcharges • Subsidies, tax rebates for low emission vehicles/technologies

Various financing options for different ranges of application

		Amount typically involved	Main components supported						
			Infra-structur Main-tenance		Public transport	Techn-ology	Insti-tutions	Policies	Traffic Man.
Local Instruments	Parking charges	$		x	x		x		x
	Road Pricing/congestion charge	$$	x	x	x	x	x	x	x
	Employer contributions	$$	x	x	x				
	Fare box revenues	$$			x				
	Public transport subsidies	$			x				
	Land development/land value taxes	$$$	x		x				
	Public private partnerships	$$	x	x	x	x			
	Advertising	$		x	x				
National Instruments	Fuel taxes/surcharges	$$$	x	x	x		x	x	x
	Vehicle related taxes and charges, including auctioning of quotas	$$$	x	x	x		x	x	x
	Loans and grants	$$	x				x		
Global Instruments	CDM	$			x	x			
	GEF	$	x		x	x	x	x	
	Multilateral/bilateral climate funds	$	x		x	x	x	x	

Continued Funding Sources

- Fuel taxation (national)
- Land development
- User and property taxes

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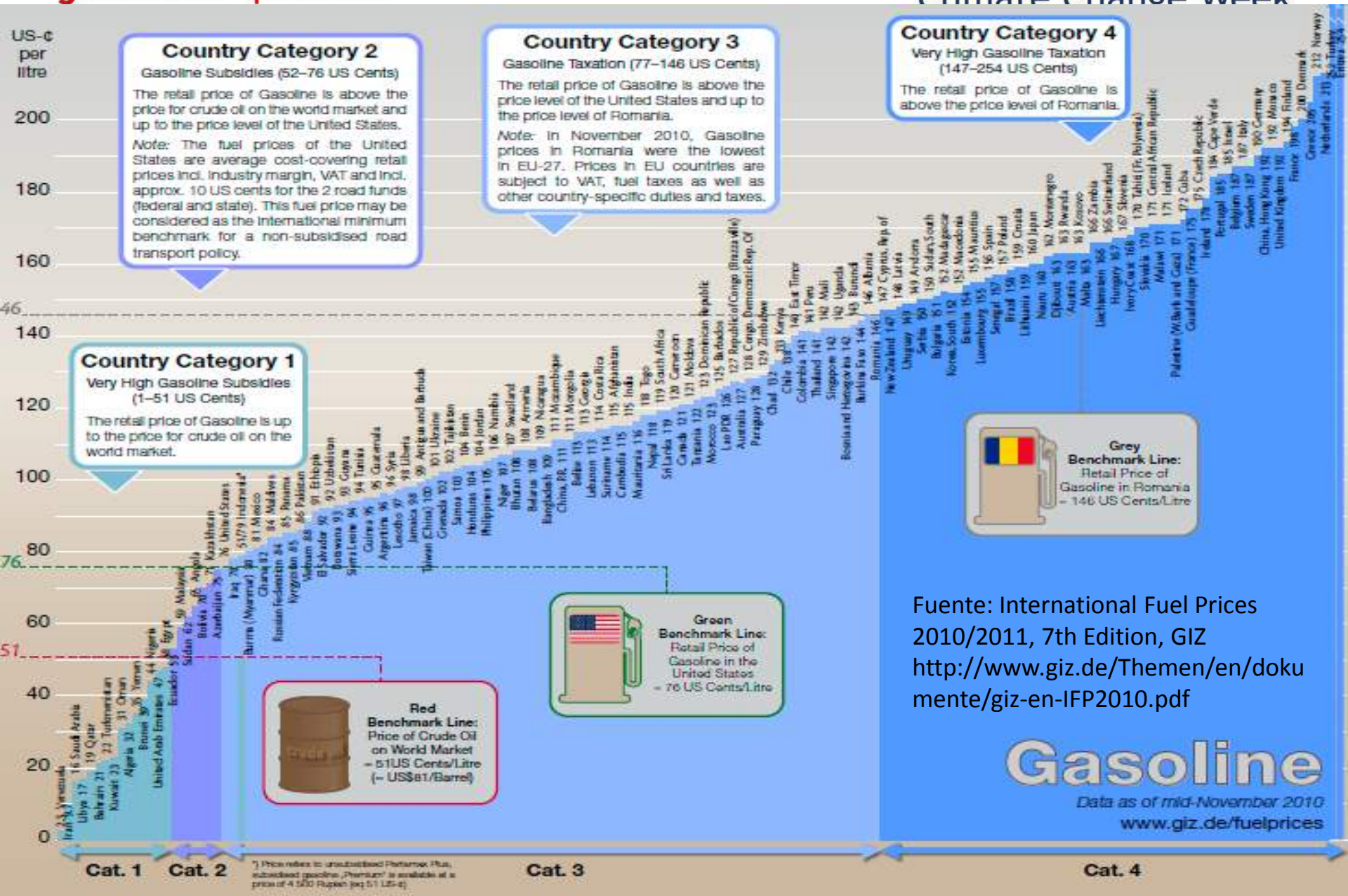
Fuel Taxation

Transport and Climate Change Week



Fuente: International Fuel Prices 2010/2011, 7th Edition, GIZ http://www.giz.de/Themen/en/dokumente/giz-en-IFP2010.pdf

Continued Funding

Land Development	• **Property taxes** • **Value capture** • **Transit Oriented Development**
User and Property Taxes	• **Registration/licence (property)** • **Taxes to inputs (fuels)** • **Parking managment** • **Urban tolls**

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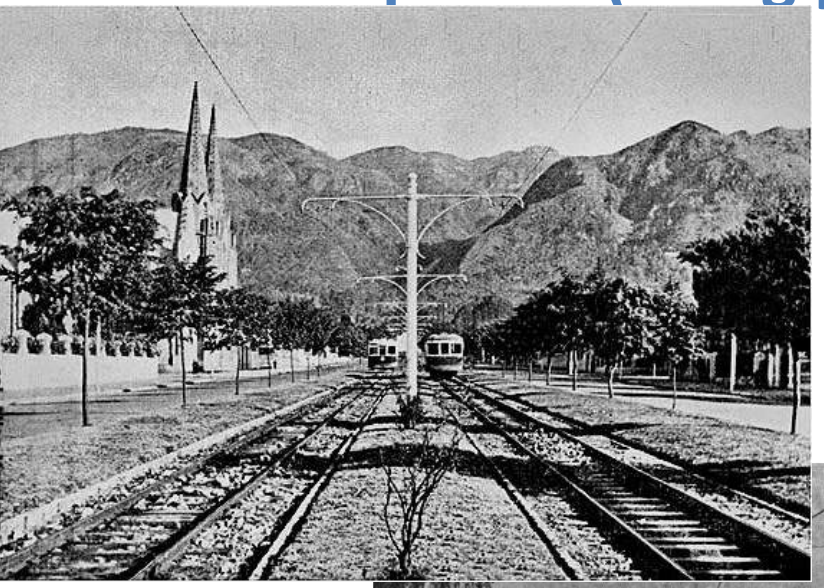
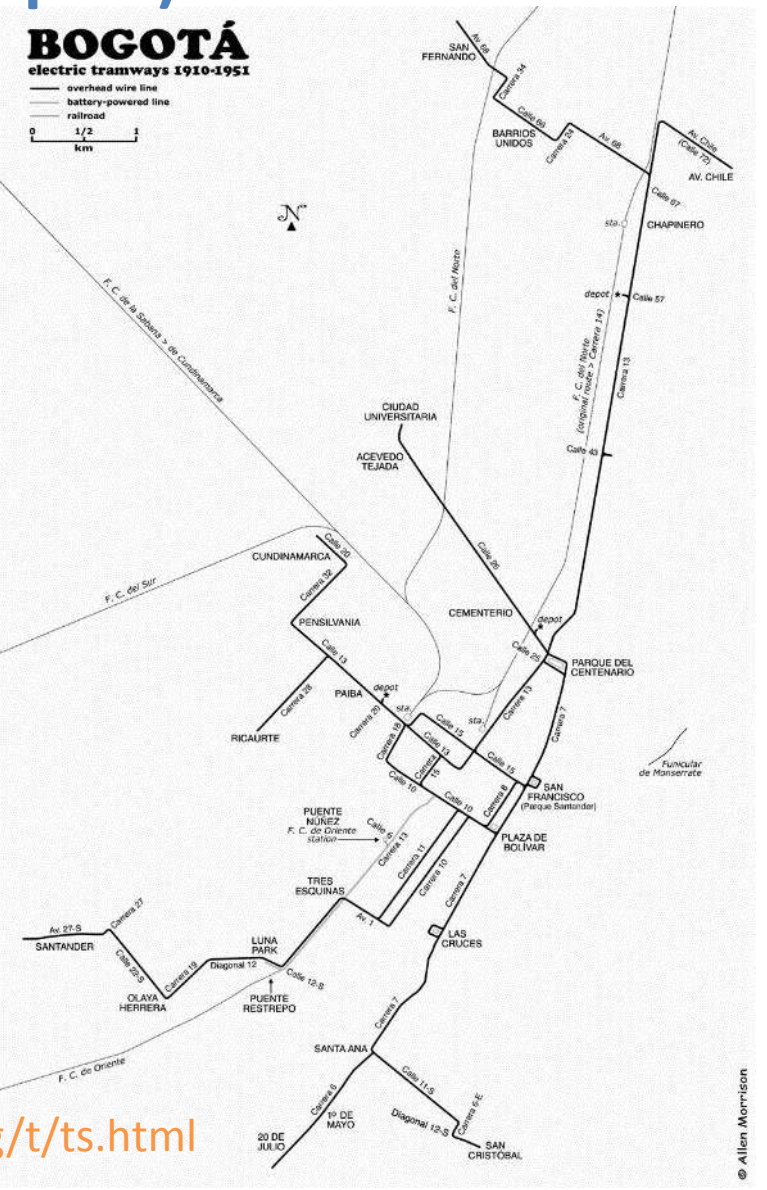
Land Development (along public transport)





http://www.tramz.com/co/bg/t/ts.html

Hong Kong

HK$4 billion (US$506 millones) en ventas de propiedades arriba de estaciones, 32% de los ingresos de la Agencia de Transporte Masivo en 2010 (http://www.bloomberg.com/news/2011-03-03/mtr-s-full-year-underlying-profit-advanced-19-on-home-sales-fare-revenue.html)

Foto Cortesía Oren Tatcher

Singapore

Ørestad City, Copenhague

http://www10.aeccafe.com/blogs/arch-showcase/files/2011/12/Wing-House_1.jpg

Transport and Climate Change Week

Focus 2017: Urban Mobility

18 - 22 September 2017

Bogotá Central Station Urban Renewal Project (under construction)

http://www.eru.gov.co/contenido/articulo/247-estacion-central

Empresa de Renovación Urbana, Bogotá

Land Value Capture

- Updated land assessment (cadaster) and adequate levels of property tax
- Increased value contribution ("valorización")
- Joint development (preferred)
- Development rights
- Town planning schemes

	Property tax	Increased value contribution	Joint development	Development rights
Colombia	Large cities, not earmarked	Common, difficult to assess, approve	Possible, has not been used extensively	No
Mexico	Not earmarked	No	No	No
Brazil	Not earmarked	No	Possible, some use	Very well developed
China	No (leases instead)	No	Possible, some use	No (joint development in Hong Kong)
India	Incipient	No	Possible, has not been used extensively	Some cities (other town planning schemes)

Vehicle Registration Fees (Quotas)

- Singapore (1990)
  - Auction: USD 67,000 per vehicle
  - Quota 1% increase in fleet per year
  - ~ 6,000 new cars, ~US 400+ million per year (for SUT)
- Shanghai (1994)
  - Auction: USD 9,000 por auto
  - ~ 96,000 new vehicles per year
  - ~US 900+ million per year (for SUT)
- Guangzhou (2012)
  - 120,000 new vehicles per year (12,000 clean vehciles lottery, 60,000 rest lottery, 48,000 auciton)

Parking Management

http://www.baycitizen.org/transportation/story/clog-streets-pay-premium/

Parking income in San Francisco
US $187 million per year (for SUT)

US $87,263,867 Parking violation fines
US $47,119,999 Parking-meters
US $43,354,632 Garages
US $9,747,900 Residential permits

29,058 spaces with parking meters
79,000 residential permits
263 enforcement officilas

PicAutoridad Metropolitana de Transporte de San Francisco SFMTA, 2011

Congestion Tolls

http://www.thetruthaboutcars.com/wp-content/uploads/2009/08/london-congestion-charging-zone-525x350.jpg

Financing Sustainable Urban Transport

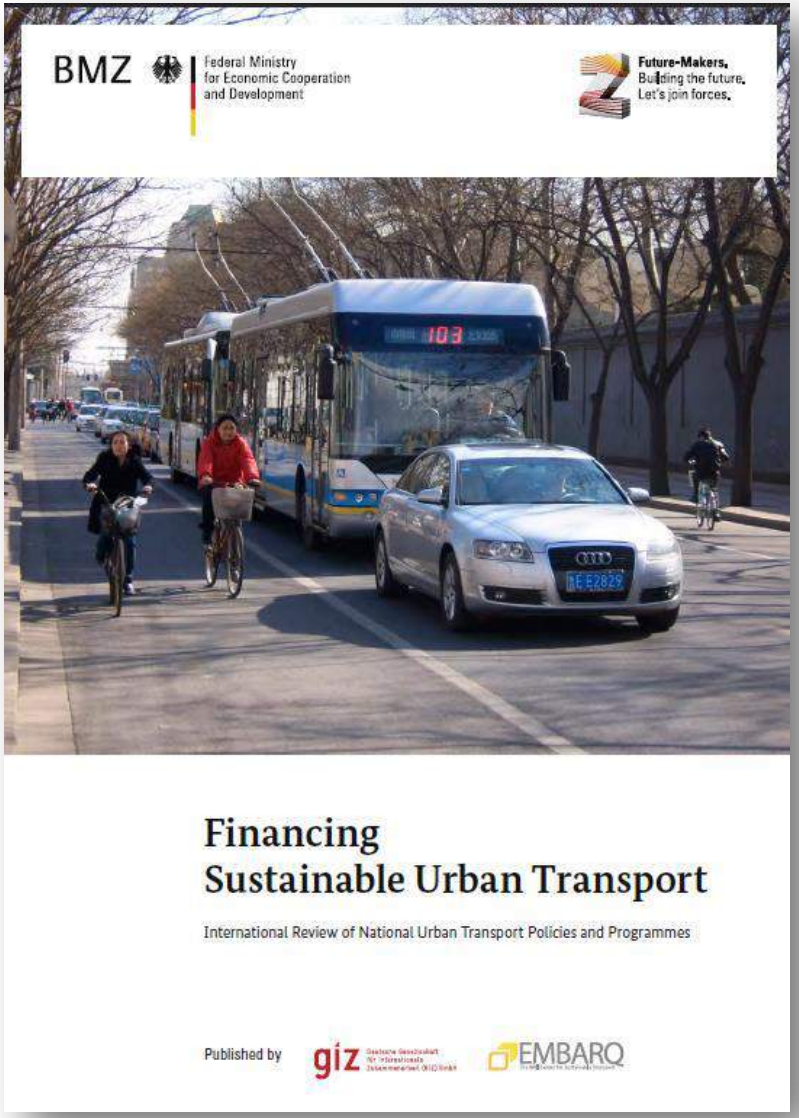
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

International Review of National Urban Transport Policies and Programmes

- Brazil
- Colombia
- France
- Germany
- India
- Mexico
- United Kingdom
- United States of America

Available for download in English from

www.sustainabletransport.org



- 60 minutes group exercise: Create good practice principles towards better financing for urban mobility through national programs and local investments set-up (3-4 groups pending on size of participants) – each group with one facilitator

Key lessons learned

- **National level authorities shape urban transport** by policy/planning frameworks, funding schemes and guidance
- Planning and implementation of urban mobility interventions or plans requires **sufficient local capacities** and **access to funding** options
- **Critical to evaluate and update policies** and planning frameworks on a regular base → Exchange between national and local levels

Recommendations

- **Establish a supportive legal and regulatory framework**, particularly for public transport, demand management, NMT, emissions and safety
- **Improve institutional coordination and cooperation**, horizontally between policies and vertically between tiers of government
- **Decentralise responsibilities where possible and centralise them where necessary**
- **Support local or regional authorities to develop capacities**

Recommendations

- **Ensure a comprehensive pricing and fiscal structure** which sends appropriate signals to users and operators (fee's, taxes & user charges)
- **Rationalise financing and investment streams** so that they are consistent across all modes
- **Improve data collection, monitoring and research**
- **Encourage effective public participation**

Knowledge Products

- Bus Rapid Transit
- Public Awareness and Behavioural Change
- Non-motorised Transport
- Cycling-inclusive Policy Development: A Handbook
- Travel Demand Management
- Mass Transport Options
- Bus Regulation and Planning
- Financing Urban Transport
- MRV Reference Document

Thank you!