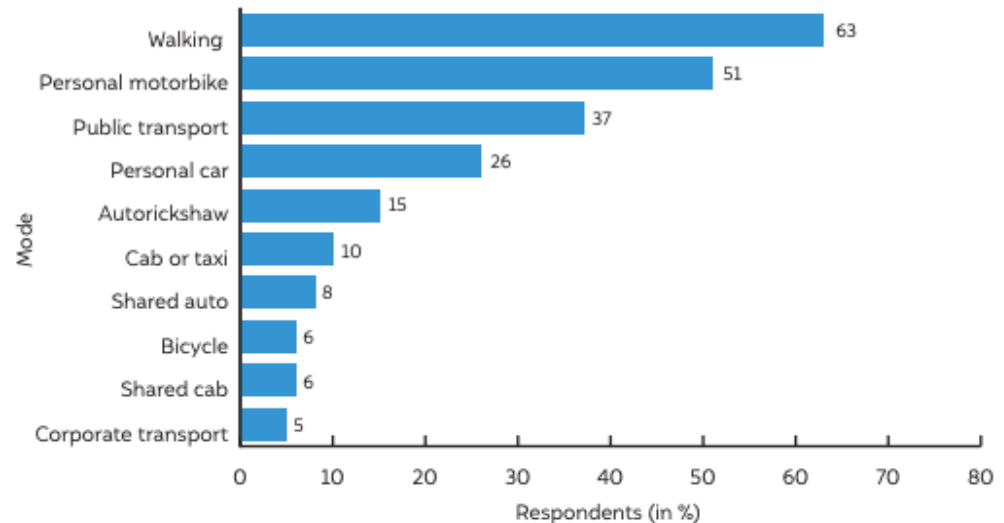# MULTIMODAL INTEGRATION AND
MOBILITY AS A SERVICE (MaaS)

A CONTEXT SENSITIVE APPROACH

MULTI-MODALITY IN INDIA

Planning for multimodality in India is practically non-existent

WALK

>60% commuters rely on walking*

Primary means to access PT/IPT

BUS

>35% commuters use Buses

*in urban areas

INTEGRATION – AN AFTERTHOUGHT?

Multimodality all over the world is an afterthought

HOW TO PLAN FOR MULTIMODALITY

PLANNING BEYOND IN-VEHICLE TRAVEL

Traditionally: Public Transport Priority

Good Practice: Focus on Whole Journey

Step	Considerations
Origin	Pre trip Information
Walk to Bus Stop	Good sidewalks, safe crossings, street lighting
Wait at Bus Stop	CCTV, visibility
Board the Bus	Panic buttons, prepaid ticket Smart cards
In-vehicle Bus	
Alight from the Bus	Low floor buses, matching vehicles floor, stop platform heights, ramps, pathways
Wait at Transfer	
Board the Metro	Priority lanes, enforcement, signal priority, service plan
In-vehicle Metro	
Alight from Metro	Seamless transfers, escalators, elevators
Walk to Destination	Signage
Destination	

- Total journey time
- Total journey cost
- Walking distances and barriers
- Wait times
- Transfer penalties
- Reliability
- Safety/Security
- Comfort

MOBILITY-AS-A-SERVICE (MaaS)

Not just emerging data- and technology-driven mobility

but

an enabler of

sustainable mobility

Access

Safety

Affordable

Green

Efficiency

MOBILITY AND TRANSPORT CONNECTIVITY SERIES

ADAPTING MOBILITY-AS-A-SERVICE FOR DEVELOPING CITIES
A Context-Sensitive Approach

WORLD BANK GROUP

MOLO

WHAT IS MaaS FOR WB?

- Entire journey approach

- Customer-centric & access to service-oriented

- May eliminate the need for vehicle ownership

- Empowers customers to access the most optimal mode/s on a trip-by trip basis

- Relies on Data integration, service integration and policy integration

- Includes all income groups

CHALLENGE TO MaaS

The growing influence of private, for-profit mobility technology and service providers in urban transport is a double-edged sword.

- Left unchecked, it **can have very negative impacts** in terms of growing congestion, worsening road safety, and leaving vulnerable populations behind.

If planned with intention, MaaS implementation in developing cities could reduce the pressures of motorization that are projected to come with economic growth.
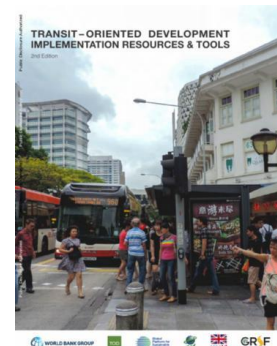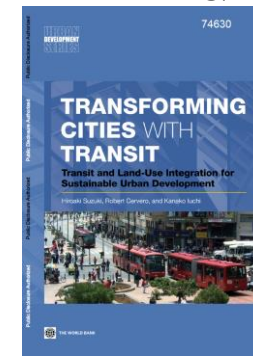
HOW TO IMPLEMENT MaaS

MM Integration is about land, physical. operational, fare, and institutional integration

Social Development & Sustainability

Multimodal Integration: Land, physical, operational, fare, institutional
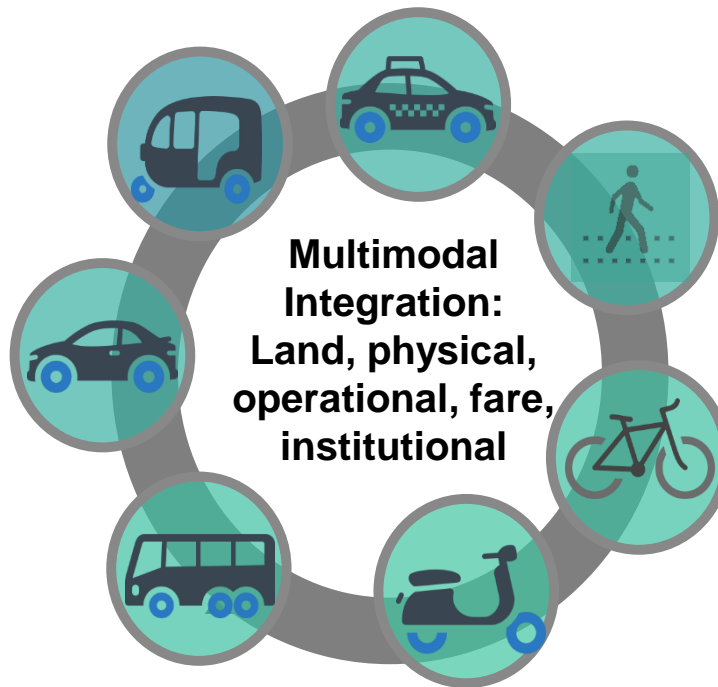
Urban Development & Renewal

PHYSICAL INTEGRATION

Size, but also quality of connections matter

Metro Station

Suburban Train Station

Bus terminal

PHYSICAL INTEGRATION

Which mode needs priority?

www.youtube.com/watch?v=9HdqTZs3vjU&t=176s

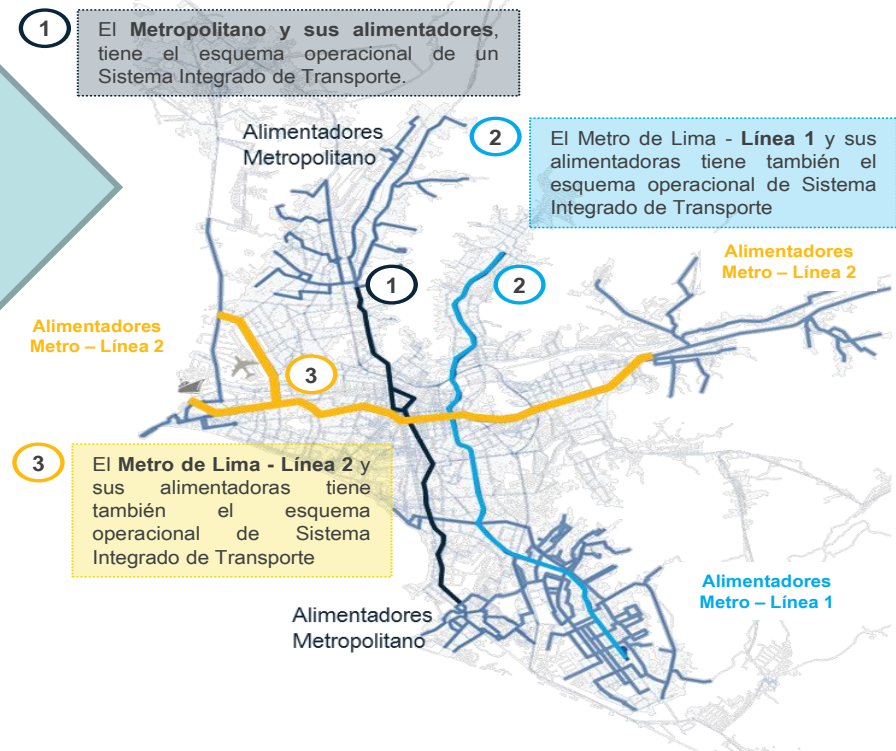www.youtube.com/watch?v=4LDLQ6dGj0U
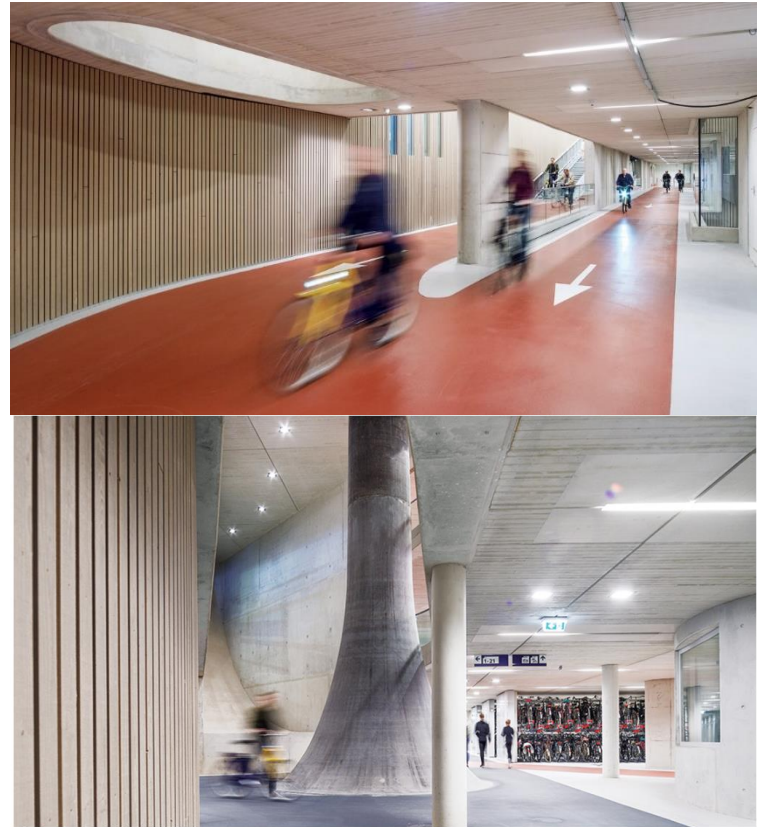
OPERATIONAL INTEGRATION

The lack of sufficient bus service in India is somewhat an opportunity.

Point-to-point services to trunk-feeder system along high-volume corridors
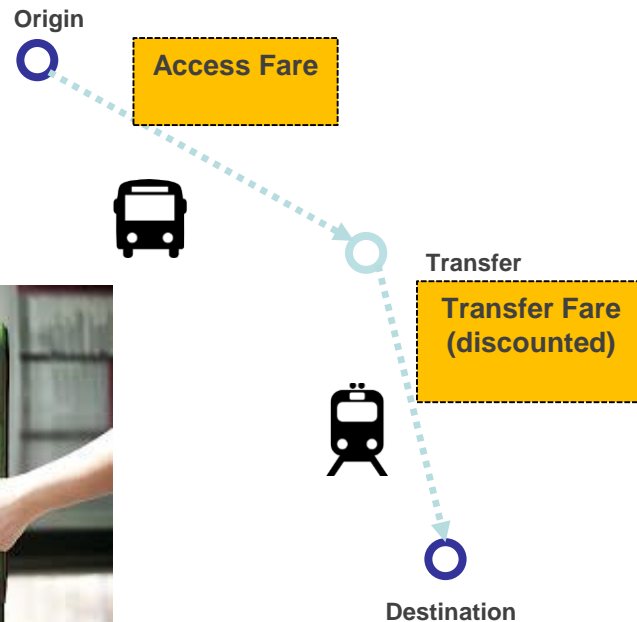
Bus Routes in Lima, Peru

1. El **Metropolitano y sus alimentadores**, tiene el esquema operacional de un Sistema Integrado de Transporte.

2. El Metro de Lima - **Línea 1** y sus alimentadoras tiene también el esquema operacional de Sistema Integrado de Transporte

3. El **Metro de Lima - Línea 2** y sus alimentadoras tiene también el esquema operacional de Sistema Integrado de Transporte

Alimentadores Metropolitano

Alimentadores Metro – Línea 2

Alimentadores Metro – Línea 2

Alimentadores Metro – Línea 1

Alimentadores Metropolitano

FARE POLICY INTEGRATION

It is not only about payment tech integration, but fare policy integration.

Origin

Access Fare

Transfer

**Transfer Fare (discounted)**

Destination

- Multimodal farecard and system
- On-board vs off-board fare collection
- Integrated fares with discounts
  - Fare levels and structure
  - Targeting subsidies to the poor
- Clearing and revenue allocation
- Financial sustainability of system

INSTITUTIONAL COORDINATION

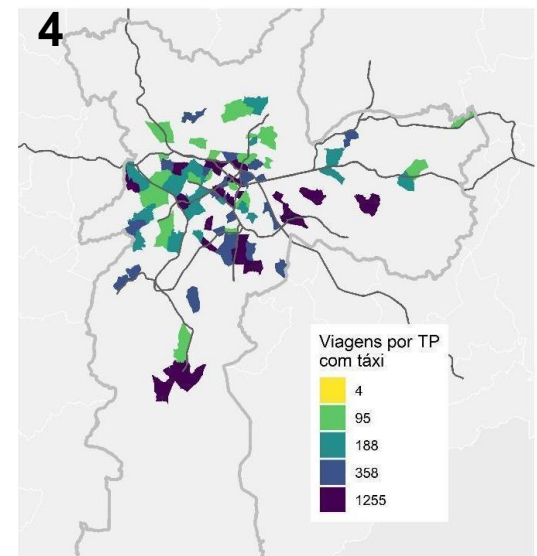**A new MaaS agency? Equipping existing agencies? Abandon or adapt old tools?**
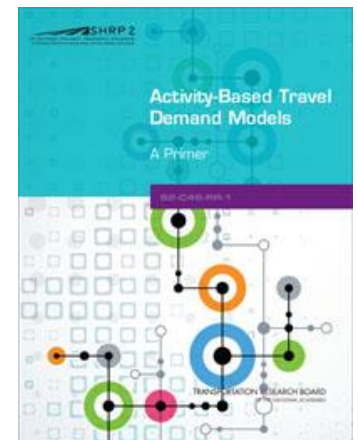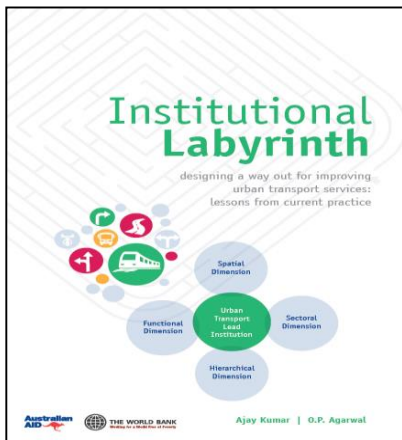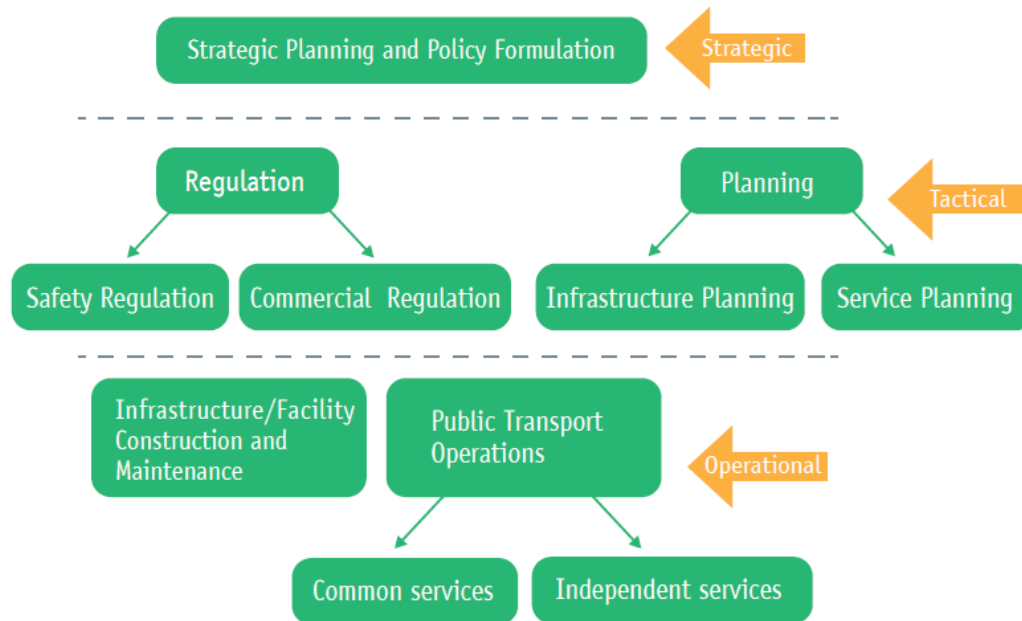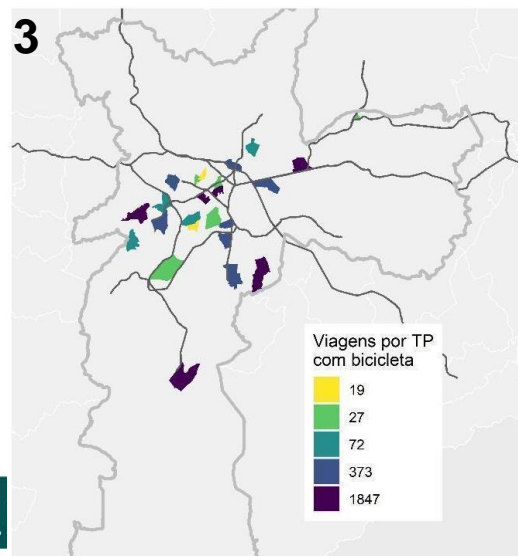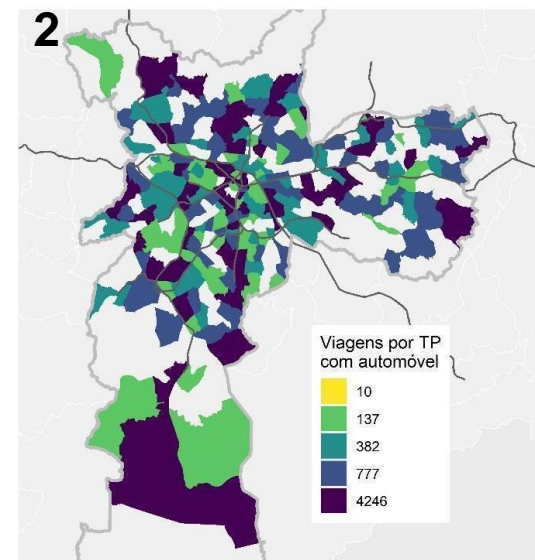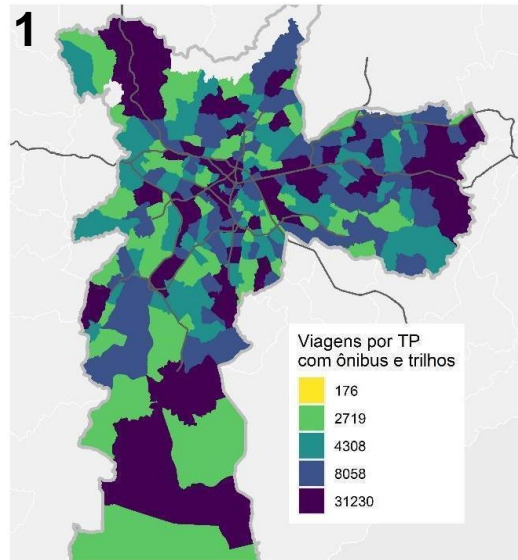
Source: World Bank, "Institutional Labyrinth" http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/Institutional-Labyrinth.pdf

EXAMPLES OF IMPLEMENTATION

Where to give incentives (or penalties) to promote a shift from car trips to public transport + ride-hailing?

Number of integrated trips between buses and 1) rail, 2) cars, 3) bicycles, and 4) taxis and TNCs

Source: WB Transport Learning Week

1

Viagens por TP com ônibus e trilhos
176
2719
4308
8058
31230

2

Viagens por TP com automóvel
10
137
382
777
4246

3

Viagens por TP com bicicleta
19
27
72
373
1847

4

Viagens por TP com táxi
4
95
188
358
1255

1

EXAMPLES OF IMPLEMENTATION

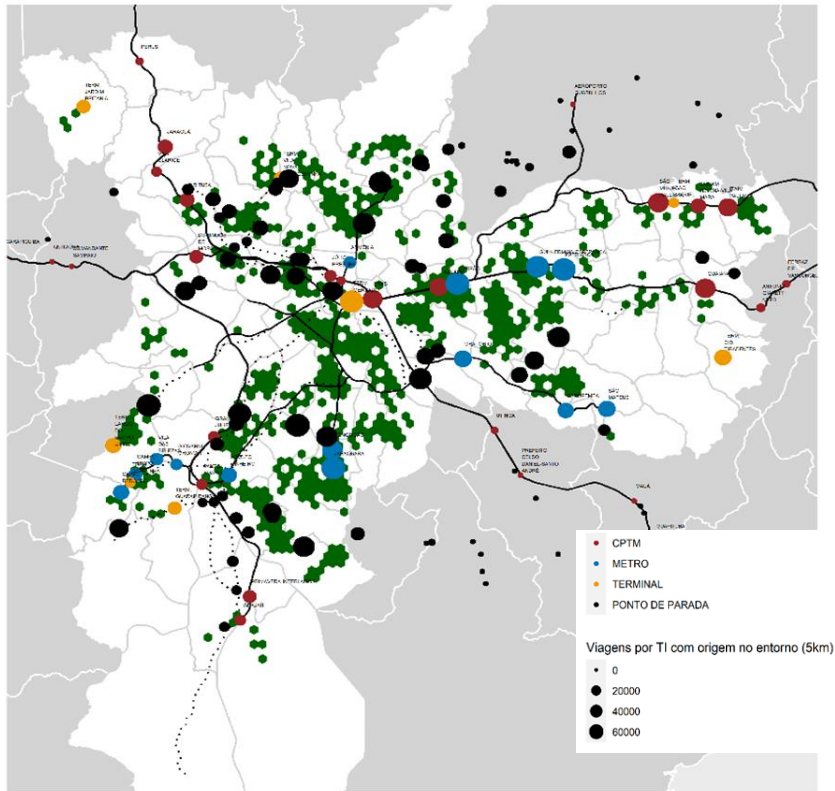**Where to give incentives (or penalties) to promote a shift from car trips to public transport + ride-hailing?**

Locations with a concentration of car trips made by individuals with a per capita family income between **US$200 and R$400 are shown in green.**

The size of the dot is weighted by the number of these trips whose origins are located within a networked distance of, at most, **5 km from the terminal, station or stopover with a high number of public transport integration.**

HOW CAN GOVERNMENT SUPPORT MAAS?

A new MaaS agency should be multistakeholder and be flexible in adapting tools

- Act as a facilitator – develop analytical capacity, flexibility to try new models, & persistently reform the regulatory environment

- Partner with MaaS providers & actively lead initiatives like encouraging behavioural changes, improving access for the low-income population and implementing green infrastructure investments

- Focus on mode-agnostic regulations, space allocation & pricing schemes that reward sustainable travel and disincentivizes private vehicle ownership & use.

- Form specialized agency to manage MaaS using new and adapted tools such as BIG DATA, activity based modelling, others

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THANK YOU

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