

# Urban mobility using MPD

Webinar of the UN Regional Hub for Africa



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# Agenda

- 1.- Motivation
- 2.- Urban mobility patterns: two branches
- 3.- Digital HTS:
  - New HTS: Fully remote (*App+*)
  - +
  - OD trips from MNO data
- 4.- Takeaways

# 1.- Motivation: Describing urban mobility patterns

- What's for:
  - Diagnosis → authorities, operational planning, for any transport or land use analysis.
  - Calibrating strategic transport models (structural Projects, public policies)
- The high complexity of urban mobility in developing countries (LATAM):
  - Highly congested cities
  - Trips with multiple legs
  - Informal operation of public transport, uncertain travel/wait time, fare evasion, ...
  - Lack of enforcement
  - Lack of regulation of "new" modes (ride-hailing, carsharing, etc)

**URBAN MOBILITY  
PATTERNS USING BD**



**MPD data**

## 2.- Urban mobility patterns: Two branches

Urban Mobility Data |

kapsch >>>

*What for?*

### Long-Term Decisions

- Assessment of urban transport Policies or strategic transport plans



*How?*

Household Travel Survey (HTS)

- Known methodologies
- Social appraisal: C/B analysis



*How with MPD data?*

New HTS: App + compl. tools



Telecom Data



**Digital HTS (updated)**

## Transport Planning

## Traffic Management

*What for?*

### Short-medium term Decisions

- Infrastructure management
- Transport demand management
- Operation plans
- Monitor the deconfinement



*How?*

"PARTIAL" DATA

- Quick response
- Different methodologies approach



*How with MPD data?*

DATA COLLABORATION WITH ECOSYSTEM:

Telecom Data

Apps, Video analytics, crowdsourcing, other

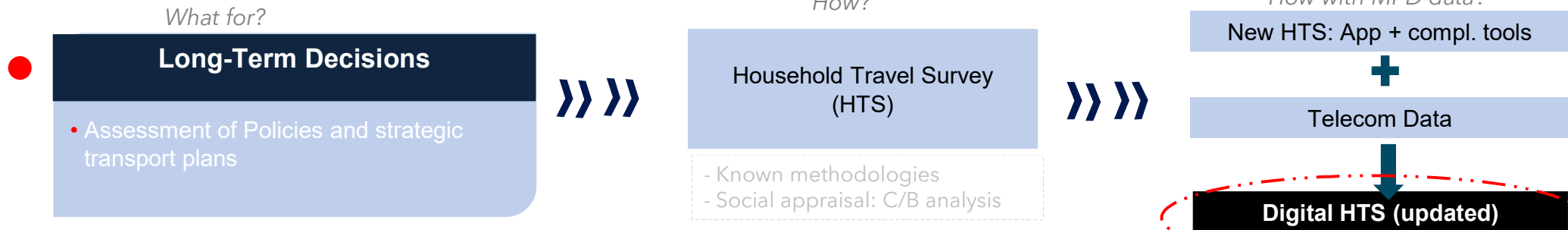
Public Sector Data



**"DYNAMIC" MOBILITY PATTERNS**

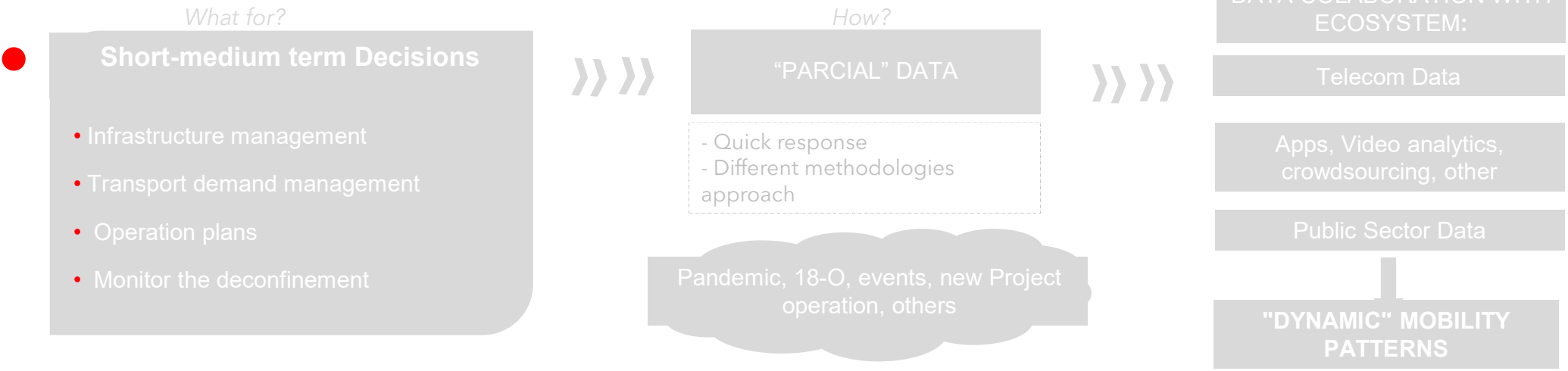
Pandemic, 18-O, events, new Project operation, others

## 2.- Urban mobility patterns: Two branches

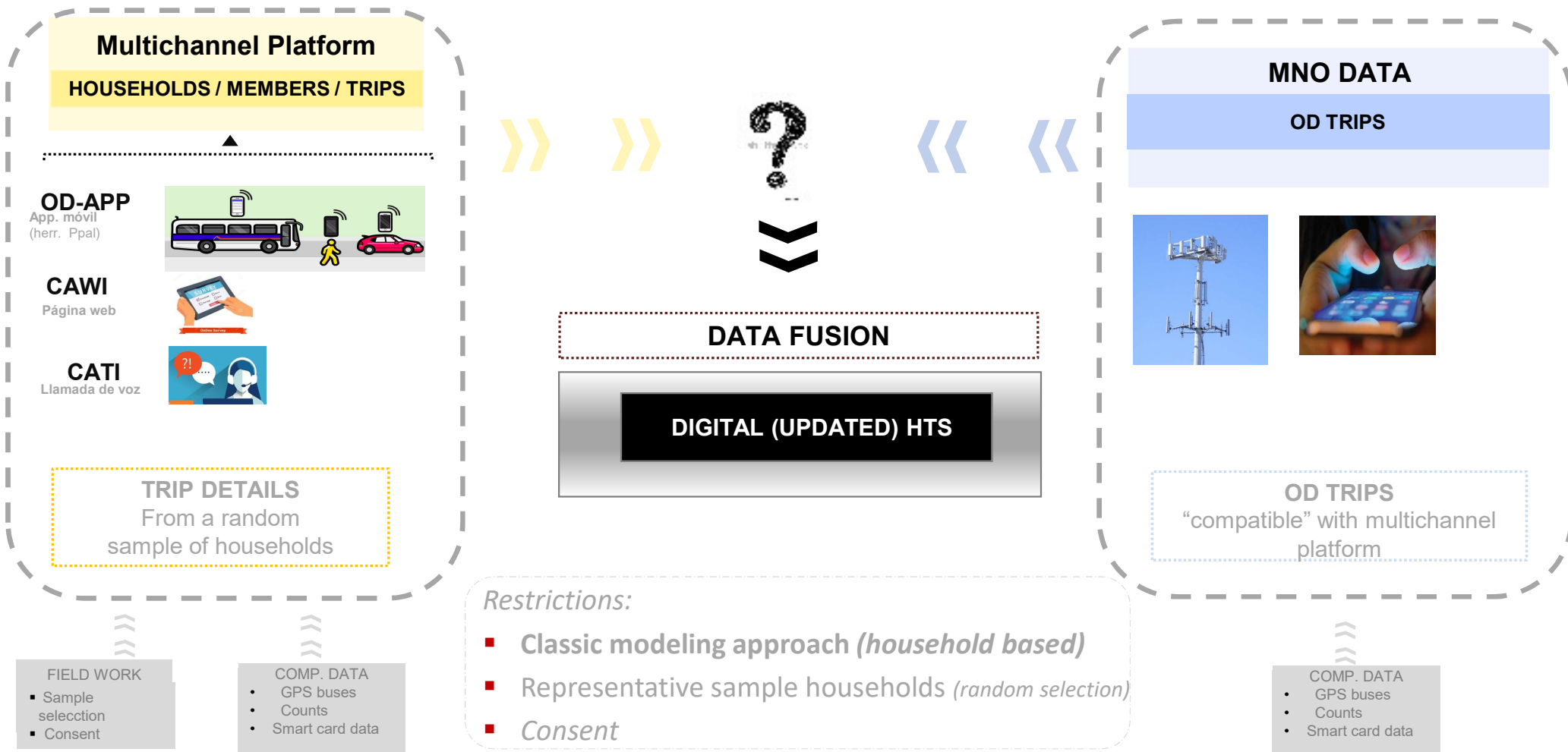


### Transport Planning

### Traffic Management



### 3.- Digital HTS → Multichannel Platform + MNO data



## 3.1.- MULTICHANNEL PLATFORM – Some findings

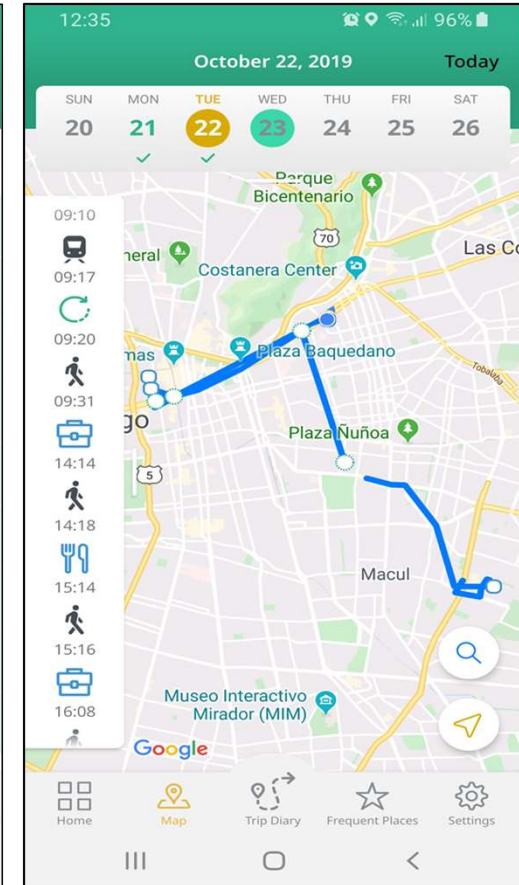
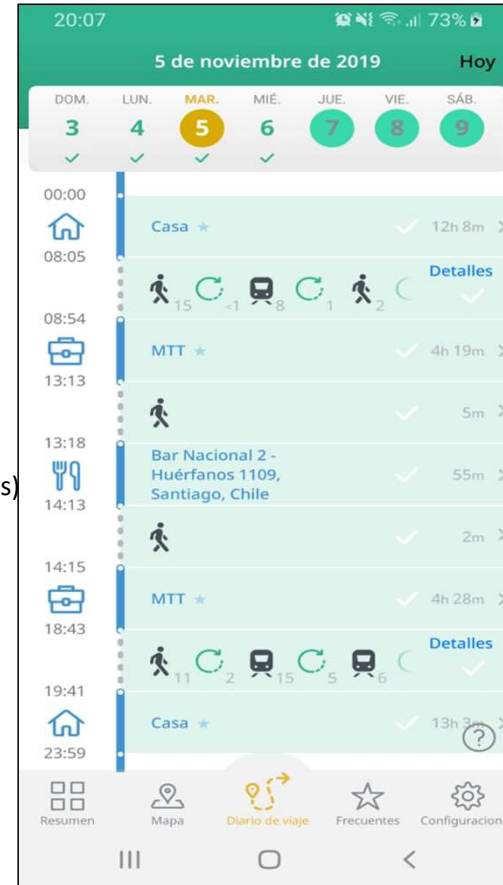
- **Pilot applied in 300 households** (random selection).

Diary of activities :

- Timeline with paths of trips and activities
- All features inferred by the App .
- Validation/correction: ex-post by the participants

- **FINDINGS**

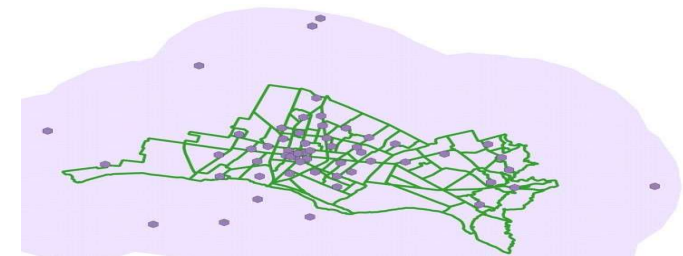
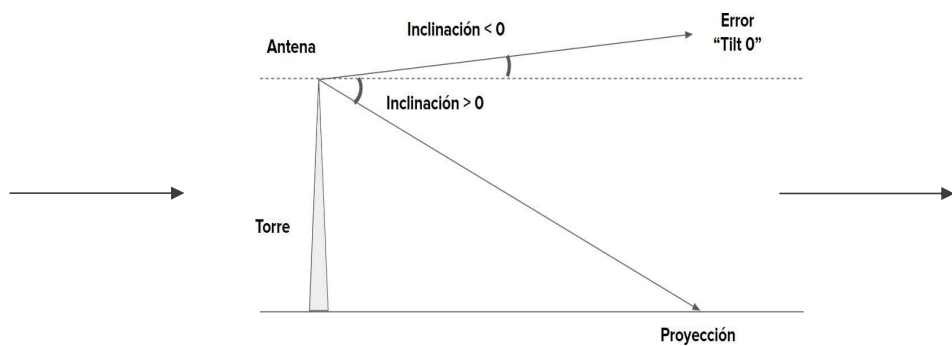
- Very accurate on detecting destinations and trip legs.
- Mode Inference (urban transport in LATAM, different from developed countries)
- Learning curve (complexity)
- **Gaining the trust of HH members (by far more complex)**
- **Low rate of validation/Incentives to fill out the HH survey**
- Complementary tools are needed: Childs, Elder people (¿HTS vs ITS?)
- Complementary tools need to be full integrated with HTS-App.
- Practical issues (battery, notifications)



Fuente: X-ING App, Study «Digital Capture of Mobility», IADB Bank & MTT- Chile

## 3.2.- MNO Data for estimating urban trips – Some recommendations

- Available in any city that with mobile network services
- The only data able to give historical information.
- Different MNO's:
  - Different type of data → Different spatio-temporal resolution → Does it work for your transport analysis?
  - Different methodologies → The outcome depends on the assumptions/methodologies (robustness).
- Estimating O-D urban trips: higher complexity regarding to O-D interurban trips (congestion, dwell time at interm. stops, etc).





## 4.- Takeaways: MPD & digital data

- The MPD data has the full potential to be used for obtaining and monitoring mobility patterns
- Data fusion is the key
- Digital data enables better formulation and monitoring of public policies in transportation.
- For Long-term decision-making: Replicability and methodological reliability are essential
- Short-term decision-making: Higher flexibility / continuous improvement
- Data quality is crucial (as always has been), and the methodologies as well
- Adhering to ethical standards (sensitive data / personal data) is crucial, and also to obtain social license is needed.

**The MPD handbook contains comparison of different types of Mobile phone data**

# Thanks!

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