PART 2. DATA FOR URBAN MOBILITY DIAGNOSIS

November 24th 2020

Deep-Dive: SUMP first phase – Data collection for urban mobility diagnosis

OVERVIEW

- **Why data ?**

- **The different kinds of data**

- **The data audit**

- **The data collection**

- **Filling the gaps**

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1. WHY DATA ?

WHY DATA ?

- **Data is a key element to proceed to the analysis of the current mobility situation**

- **Without data, you can only make assumptions, generally biased by your personal background**

- **Without data, you don't have the possibility to evaluate your main issues and your best options**

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WHY DATA ?

- **Data is the key element to SUMP step 3**
- **Data will also be very important later (6, 11,…)**

2. THE DIFFERENT KINDS OF DATA

THE DIFFERENT KINDS OF DATA

- **There are at least 5 kinds of data :**

  - **Institutional Data**

  - **Transportation Offer Data**

  - **Transportation Usage Data**

  - **Demand for transport Data**

  - **Other related data (Road Safety, Pollution, Fuel consumption)**

- **We'll present them from a passengers transportation perspective, but you'll have to do almost the same for goods transportation**

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THE DIFFERENT KINDS OF DATA

- **Institutional Data**

    - **Socio-demographic information about the population**

        - **Age, main occupation, driving licence holder,…**

    - **Mobility Governance :**

        - **Who is responsible for road maintenance and development ? (and for train, bike, public transport)**

        - **Who are the other entities involved : private companies, startups, local authorities**

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THE DIFFERENT KINDS OF DATA

- **Transportation Offer Data**

  - **What transportation modes are available on my territory ?**

    - **Public transport (train, bus, BRT, subway,…) : routes, timetables, fares,…**

    - **Private car (highways, rings, local roads, car parks)**

    - **Bike : cycle paths**

    - **Other transport : Uber, collective cabs, carpooling, carsharing,…**

    - **Walking : are there sidewalks in all streets ? Pedestrian crossings at each junction ?**

    - **Are there free floatting e-scooter services available ?**

THE DIFFERENT KINDS OF DATA

- **Transportation Usage Data**

  - **How are the different modes used by the population ?**

    - **Count of cars, bikes on a specific infrastructure**

    - **Number of passengers in buses, trains**

    - **Pedestrians census**

    - **Number of trips by mode of transport**

    - **Are car parks overcrowded ?**

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THE DIFFERENT KINDS OF DATA

- **Demand for transport Data**

  - **The demand may be different from the actual usage**

    - **If there's a missing link on a road network**

    - **If there's no buses at evenings**

    - **If you feel unsafe to walk at night**

  - **This data is difficult to collect, but very relevant !**

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THE DIFFERENT KINDS OF DATA

- **Why Demand for transport Data is important ?**

« you can't know if a bridge will be useful by counting the swimmers crossing the river… »

- **By adding a mobility service or a new transport infrastructure, you'll generate « induced traffic » which can be estimated thanks to demand for transport data**

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THE DIFFERENT KINDS OF DATA

- **Other related Data**

  - **Road Safety : number of crashes, of injured, of killed**

  - **Air pollution Level : volatile organic compounds, fine particles,…**

  - **Fuel consumption**

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3. THE DATA AUDIT

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THE DATA AUDIT

- **What are the data I need ?**

- **What data are available ? Where ?**

  - **Directly**

  - **With my partners**

  - **Somewhere else**

  - **Don't forget to check for open data solutions !**

- **What data are unavailable ?**

  - **Is it possible to collect it ?**

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THE DATA AUDIT

- **The data you need**

  - **You have to take all modes and all purposes into account**

  - **Consulting stakeholders and even the general public is a good solution to avoid missing important subjects**

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THE DATA AUDIT

- **You also need to know what the data will be used to ?**

    - **Providing a descriptive analysis**

    - **Creating or updating a traffic model**

    - **Implementing mobility indicators to monitor the SUMP achievements**

- **It has implications on :**

    - **The accuracy and completeness required**

    - **The need for an updating process**

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4. THE DATA COLLECTION

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THE DATA COLLECTION

- **Collecting all the data available**

  - **Directly, but also with partners**

  - **A good opportunity to meet new partners who have data to share**

  - **Data sharing may involve financial transfers…**

- **Be careful with the information about the data :**

  - **Are they refreshed often ?**

  - **What hypothesises are used ? (ex : for PT, are connections included or not)**

  - **Are data Reliable ? Accurate ? Complete ?**

  - **There may be privacy issues…**

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THE DATA COLLECTION

- **If you don't own directly the data, it is time to create a procedure for updating it**

  - **It's easier to make it now than in a few years**

  - **It's an opportunity to create lasting relationships with new partners**

- **Not only SUMP is an efficient way of planning mobility, but it is also an excellent tool to improve your local governance by creating links between different institutions**

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5. FILLING THE GAPS

FILLING THE GAPS

- **Even with all the partners possible sharing their data, there will be gaps…**

- **Trying to fill the gaps have to be studied. Many solutions :**

  - **Implementing counters (for cars, bikes, PT users,…)**

  - **Making a survey**

  - **Using Big Data**

  - **Using default values**

- **You won't be able to have everything…**

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FILLING THE GAPS

- **Counters :**

  - **Magnetic loops (permanent) : for cars, bikes, buses**

  - **Pneumatic tubes (temporary)**

  - **Video (automatic AI analysis)**

  - **Wifi or bluetooth beacons**

  - **Human powered (temporary) : interesting to get qualitative data**

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FILLING THE GAPS

- **Surveys :**

  - **Origin-Destination Surveys : surveying at one point the vehicles going through, or inside a PT lane**

  - **Household travel surveys : collecting all trips made by a household on a day**

  - **Online surveys : more or less all what you want, but it is very difficult to reach a representative audience**

  - **Qualitative surveys : interviews or focus group**

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BIG DATA TO FILL THE GAPS

- **The main way to use « Big Data » for mobility analysis :**

    - **Using the approximative location of mobile phones (connected to relay antennas) OR geotrackers inside a smartphone app**

    - **Algorythm permits to transform raw data into mobility data**

    - **Quite poor knowledge of modal shares and trip purposes but quite easy to get**

- **Material from social media can be used too…**

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6. CONCLUSION

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SUMMARY : DATA IN 5 STEPS

Steps for data collection

1. **Perform data audit**
2. **Consult stakeholders and the general public** on the main problems and issues.
3. **Retrieve available data, synthesize** their content, **identify data gaps**.
4. Arrange **data sharing with external owners**
5. **Collect additional data** to fill important gaps in your data.

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CONCLUSION

- **Data for urban mobility analysis can be very large**

- **You won't get everything, you must adapt to your local context and your possibilities (technical, financial)**

- **The data audit is important to assess the data you can have and the data you really need**

- **The question of data is just the beggining of the SUMP journey !**

THANKS

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