SOUL

A DSS TO PLAN AND IMPLEMENT SMART MULTIMODAL MOBILITY HUBS

SOUL Decision Support System:
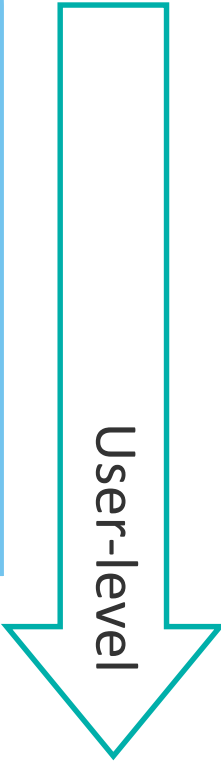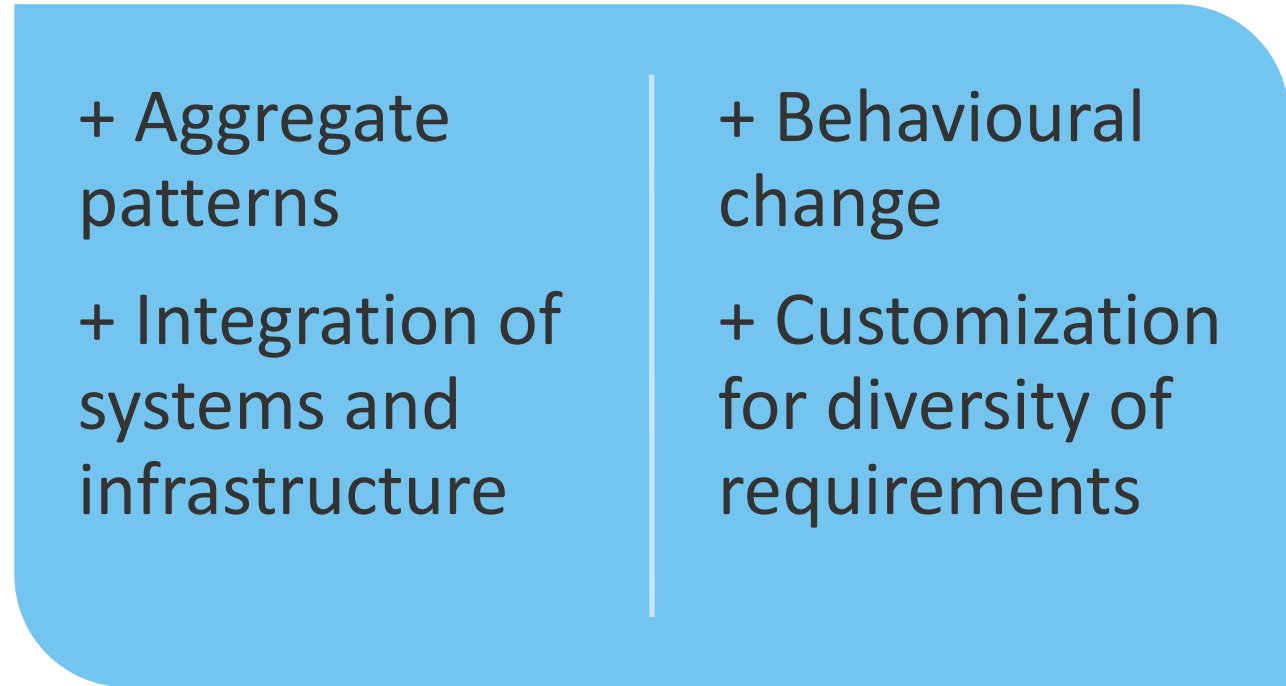New Concept to Create Effective Smart Mobility Hubs

Dr. Miloš Mladenović

Aalto University

Effective Urban Mobility Hubs

Multitude of

(often conflicting) goals:

- Carbon emissions
- Energy consumption
- Noise
- Safety
- Security
- Accessibility
- Operating revenue
- Etc.

System-level

+ Aggregate patterns

+ Integration of systems and infrastructure

+ Behavioural change

+ Customization for diversity of requirements

User-level

EIT Urban Mobility is supported by the EIT, a body of the European Union

Making Decisions about Effective Urban Mobility Hubs

Decisions distributed across spatio-temporal scales and stakeholders:

• Planning decisions: e.g., location choice in the public transport network

• Design decisions: e.g., electric bus charging station

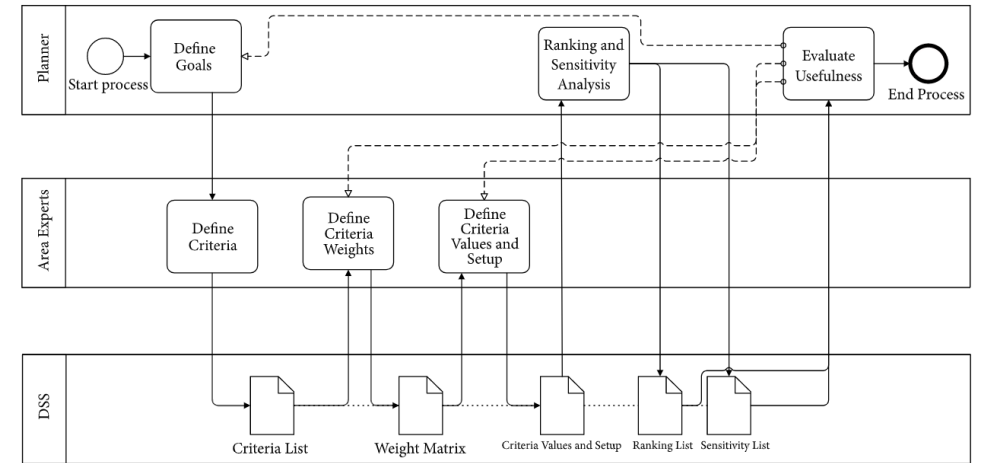• Management decisions: e.g., schedule disruption due to inclement weather

Sources of uncertainties:

• Many emerging and uncertain technologies and services

• Many infrastructural components of various sizes and level of digitalization

• Multiple services operating in the hub

• Large number and large diversity of users with different requirements

Urban Mobility

EIT Urban Mobility is supported by the EIT, a body of the European Union
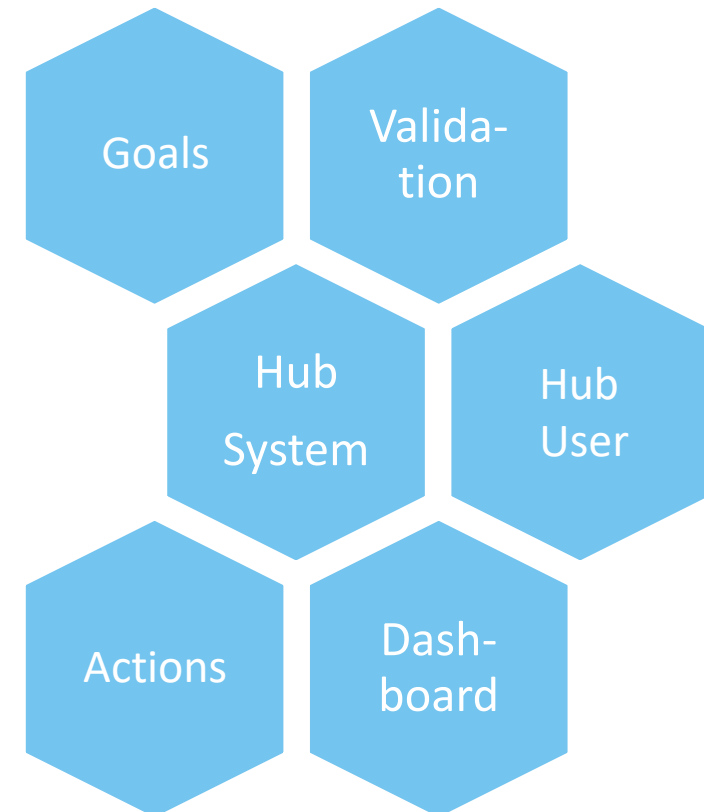
A Range of Tools Available

- Data collection

- Data visualization

- Computer-aided design

- Macroscopic/mesoscopic transport system modelling

- Microscopic transport system modelling

- Geospatial analysis

- Statistical analysis

- Environmental impact assessment

- Economic impact and feasibility assessment

- Ranking and prioritization

- Transport sub-system optimization

- Stakeholder and public involvement

The Focus of SOUL Decision Support System

- Understanding interdependencies between hub-level and hub-user perspectives
- Providing access and interpretation of different knowledge for DSS users
- Facilitating communication and discussion between those involved in decision processes
- Facilitating useful data analysis for multidimensional evaluation
- Iterations through design thinking
- Process memory and version control

- Web-based modular DSS design
- Different user access levels for DSS modules

Thank you!

https://www.fondazionepolitecnico.it/en/initiatives/soul/

🐦 @EITUrbanMob

💼 linkedIn.com/company/eit-urban-mobility

EIT Urban Mobility is supported by the EIT,
a body of the European Union