Policy Learning Platform Webinar
Tackling the urban freight logistics challenge

https://www.eltis.org/mobility-plans/topic-guides
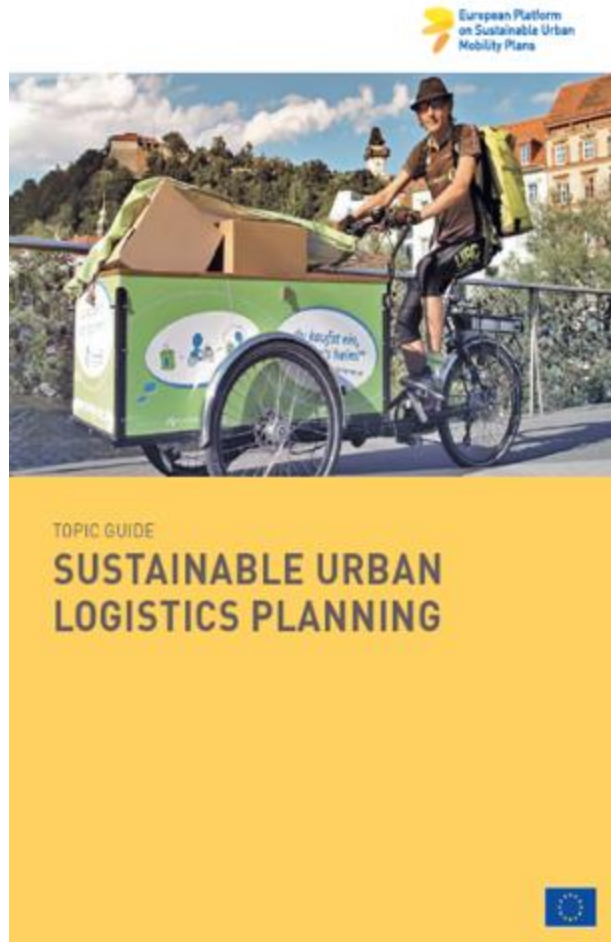
Developing a Sustainable Urban Logistics Plan (SULP)
Dr. Georgia Ayfantopoulou,
Research Director CERTH/HIT

How to build a SULP: a practical methodology

1 Set up working structures

2 Define the development process and scope of the plan

3 Analyse the current UFT situation

4 Develop vision and objectives with stakeholders

5 Build & jointly assess scenarios

6 Set targets and indicators

7 Select measure packages with stakeholders

8 Agree actions and responsibilities

Develop a SULP as a separate & interrelated to the SUMP plan.

Consult ELTIS Guidelines & Best Practices

Contemporary challenges in planning for City logistics

1. Long term engagement of stakeholders in planning & implementation.
2. Improve understanding of the city UFT problem and the emerging new services.
3. Where to focus for strategy creation ?
4. Complexity in City logistics scenarios definition, monitoring and assessment.

1. Set up working structures (I)

1. Create inter-departmental **core team on City Logistics** inside the municipality with **relevant expertise** and familiarity with **UFT policy and regulation frameworks**

2. Consider getting external support OR Engaging a **neutral partner as facilitator** and for arguments provisioning

3. Identify your city's **relevant Urban Freight Transport actors &** Establish a City Logistics **Multi Stakeholder Platform (MSP)**

4. Prepare **city partnerships for city logistics** planning & Solutions implementation

Turin-Italy

- Express couriers (TNT, SDA, BARTOLINI, DHL, UPS, GLS)

- Industrial Stakeholders (ANFIA, API, Confindustria, Federauto, Unione Industriali, UNRAE)

- Association and logistics operators (AICAI, Apsaci, FEDIT, Federdistribuzione, Confartigianato Trasporti, FITA C.N.A., FAI

- Retailers associations (ASCOM – Confcommercio, C.N.A., Confartigianato, Confcooperative, Confesercenti)

- Public Authority (Local Chamber of Commerce, Municipality of Turin, Ministry of Infrastructure and Transport, Piedmont Region)

- Technology partners (5T, Viasat, Torino Wireless)

- Freight Villages (Sito Interporto)

Copenhagen-Denmark

Service Level Agreement for a Freight Nework

SHARING COPENHAGEN

PARTNERSHIP AGREEMENT

Stakeholder's Category	Proportion
Recommended Mixture of a Multi-stakeholder platform	
Supply Chain Stakeholders (Transport Operators, Freight Forwarders, Retail chains, Shop owners e.tc.)	**25%**
Public Authorities (Local % National government e.tc.)	**25%**
Other Stakeholders (Industry % Commerce Associations, Research % Academia, Consumer Associations e.tc.)	**38%**
Experts	**12%**

2. Analyse the UFT(I) Improve understanding of the problem and the evolution

1. Identify information sources and **cooperate with data owners**

2. Use the **minimum set of data** needed for understanding & monitoring

3. Engage the transport and **logistics industry actors in a regular data provision** through MoUs or by relating data provision by private sector to licences of service operation provided by the public actors .

4. **Use technology** for data collections

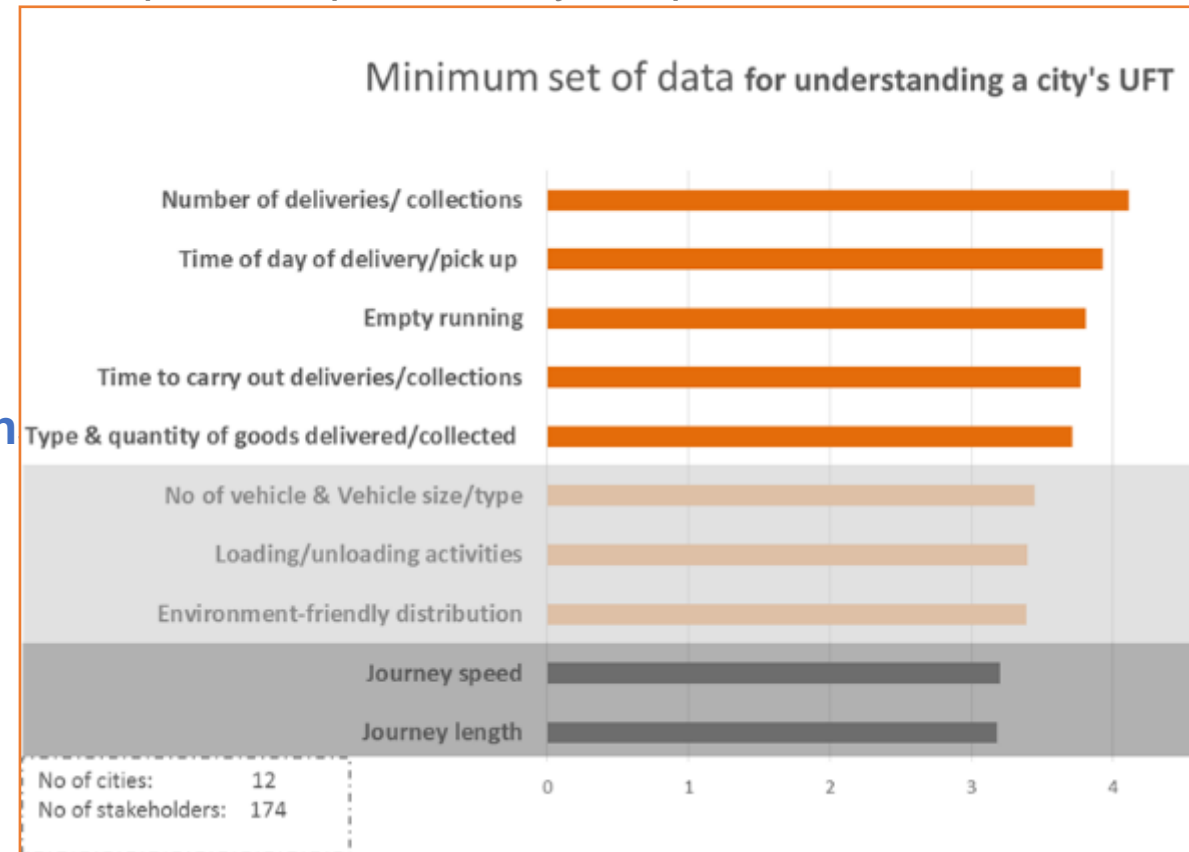5. Use online databases such as: CityLab Observatory.

NOVELOG tools, CIVITAS

6. Conduct **expert's workshops to map value interaction**

7. Engage Citizens

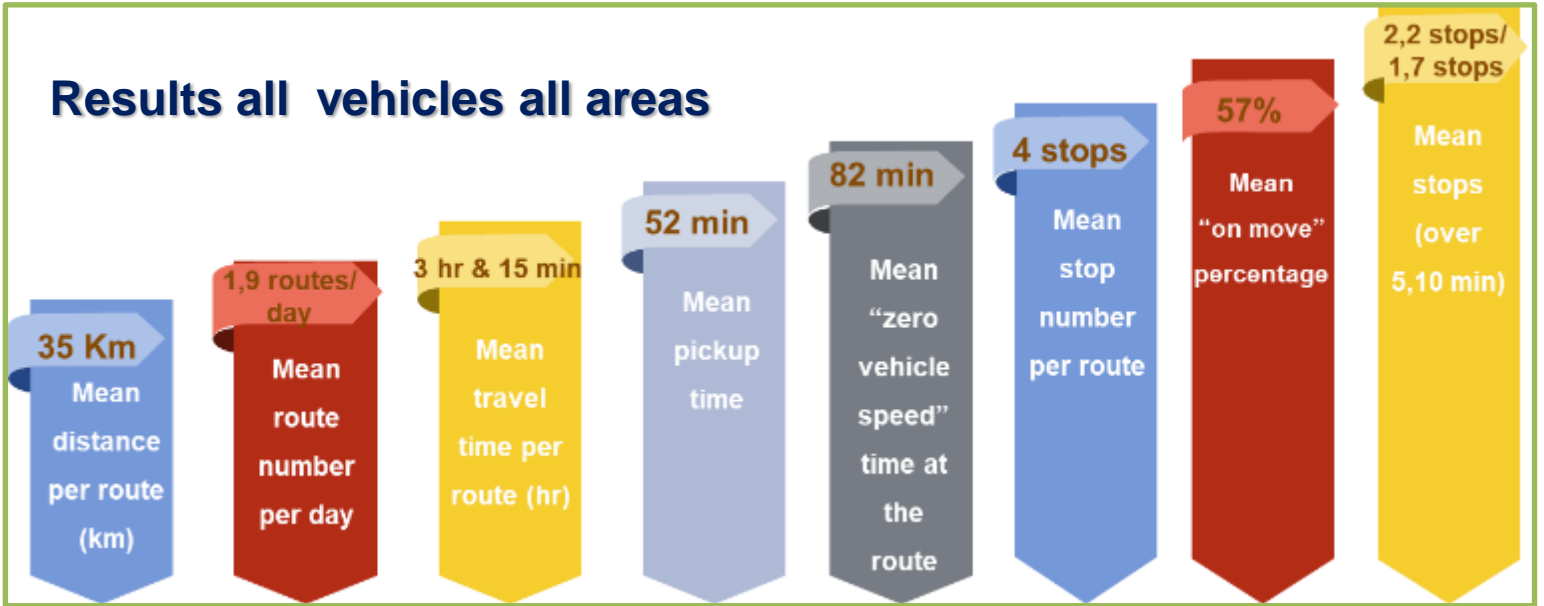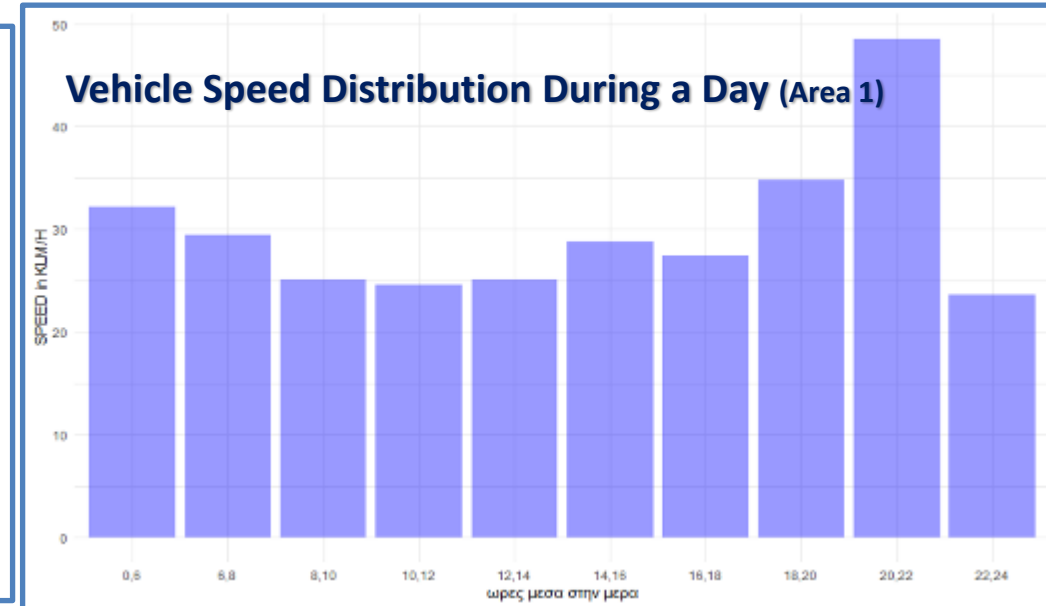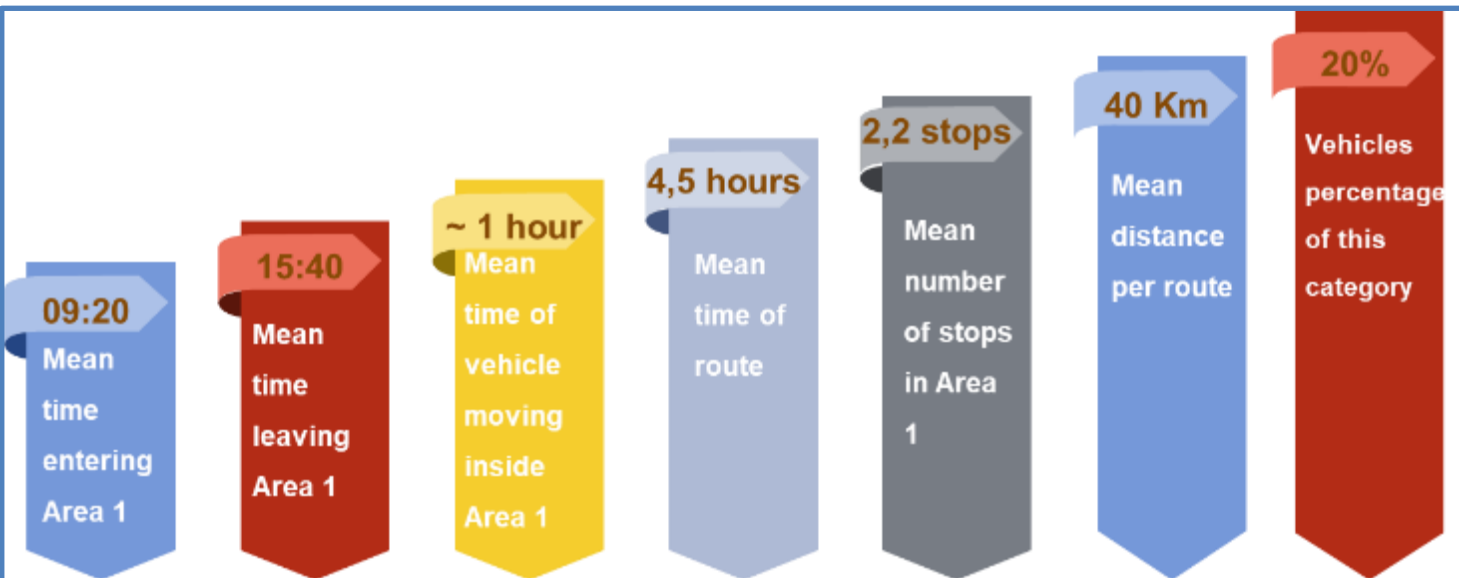8. **Set up a city logistics Living Lab** following ENoLL

methodology

Minimum set of data for understanding a city's UFT

Number of deliveries/ collections
Time of day of delivery/pick up
Empty running
Time to carry out deliveries/collections
Type & quantity of goods delivered/collected
No of vehicle & Vehicle size/type
Loading/unloading activities
Environment-friendly distribution
Journey speed
Journey length

No of cities:	12
No of stakeholders:	174

0   1   2   3   4

Example of Car (trucks) Floating Data analysis

Thessaloniki Agglomeration

BLUE: AREA 1
RED: AREA 2

Results all vehicles all areas

- **35 Km** — Mean distance per route (km)
- **1,9 routes/day** — Mean route number per day
- **3 hr & 15 min** — Mean travel time per route (hr)
- **52 min** — Mean pickup time
- **82 min** — Mean "zero vehicle speed" time at the route
- **4 stops** — Mean stop number per route
- **57%** — Mean "on move" percentage
- **2,2 stops/ 1,7 stops** — Mean stops (over 5,10 min)

Results for vehicles travelling in Area (>30 minutes)

- **09:20** — Mean time entering Area 1
- **15:40** — Mean time leaving Area 1
- **~ 1 hour** — Mean time of vehicle moving inside Area 1
- **4,5 hours** — Mean time of route
- **2,2 stops** — Mean number of stops in Area 1
- **40 Km** — Mean distance per route
- **20%** — Vehicles percentage of this category

Vehicle Speed Distribution During a Day (Area 1)

USING DATA TO MEET URBAN LOGISTICS NEW USES

Present Context

Changes in curbside use

There are far **more transport modes** today than 10 years ago: cars, shared bikes, escooters, mopeds, autonomous devices...

Urban logistics challenge cities:

- **Wild parking**
- **Safety risks**
- **Congestion**

Changes in delivery practices

More frequent and **shorter stops.**

Infrastructure needs to adapt and **ensure a safe and reliable curbside access** for urban logistics operators.

Operators and authorities need to **collaborate** in order to **elaborate appropriate solutions.**

Solution

Vianova assists Paris and urban logistics operators in **better understanding and responding to freight needs regarding infrastructures in the public space.**

PARIS

VIANOVA

HOW IT WORKS? A trusted third-party to facilitate data sharing
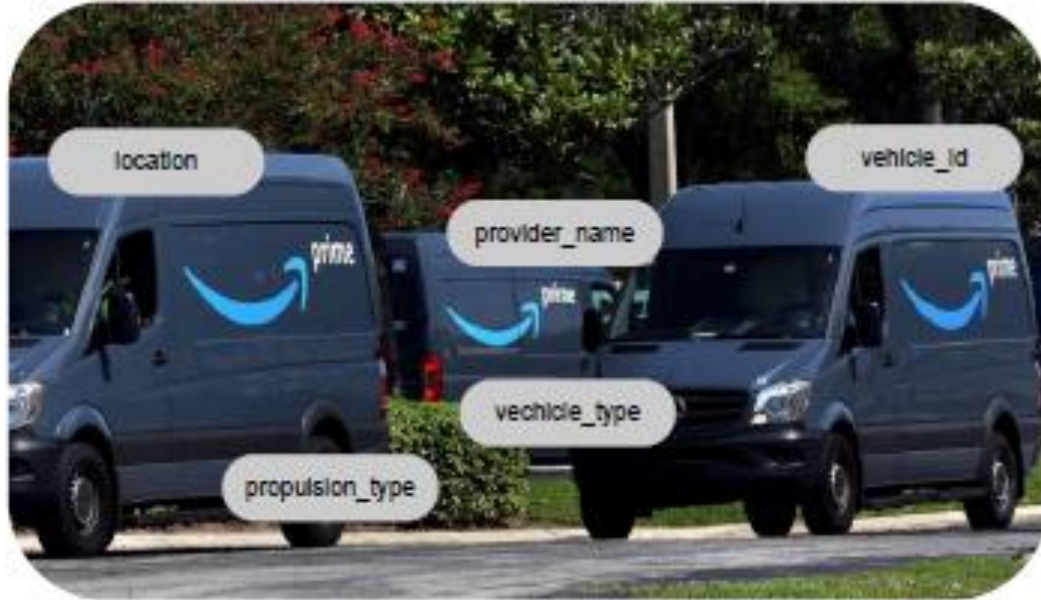
- Open source mobility data formats: MDS, GBFS...
- Open platform powered by the city, with open API
- Privacy protection with GDPR compliant data exchange services & storage
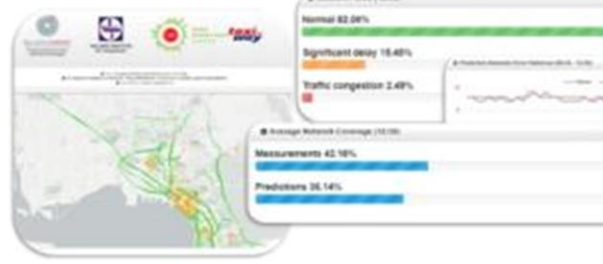- Bilateral and secured data exchange

City data platform

Mobility API
(mobility data)

Delivery Mobility Fleet

VIANOVA

Policy API
(digital regulations)

Paris City
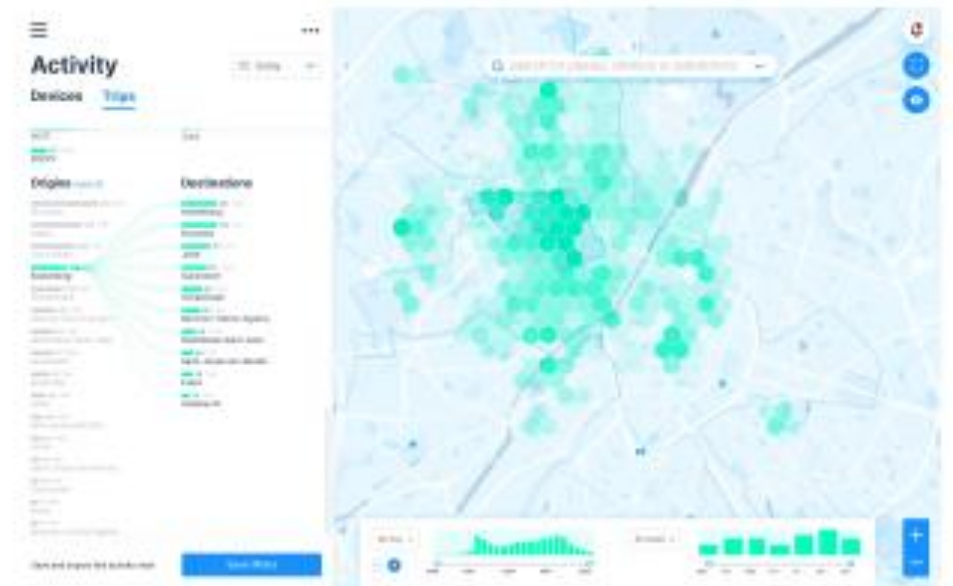
Thessaloniki Smart mobility & logistics Living Lab (member of ENoLL)

Ecosystem cooperation
City Data Lake
Neutral Party in operation
Understanding through Data analytics

www.smartmlab.imet.gr

Not just a mobility Dashboard

But

Living Lab on Mobility & City Logistic
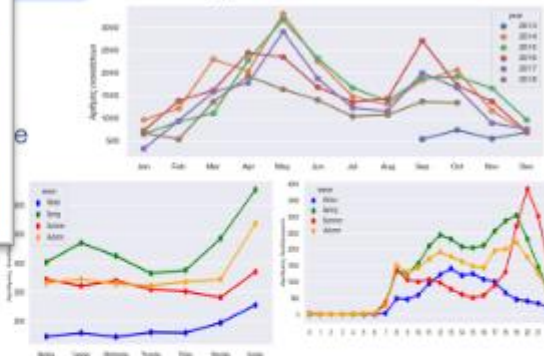
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Planning , monitoring & assessing UFT
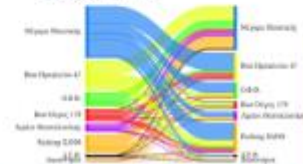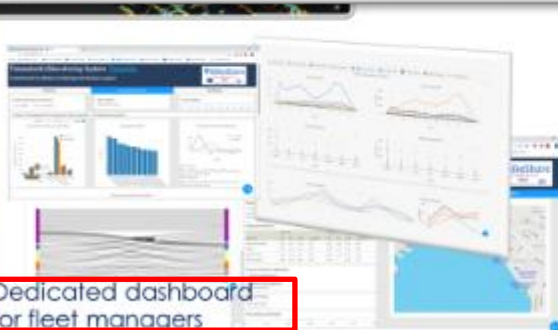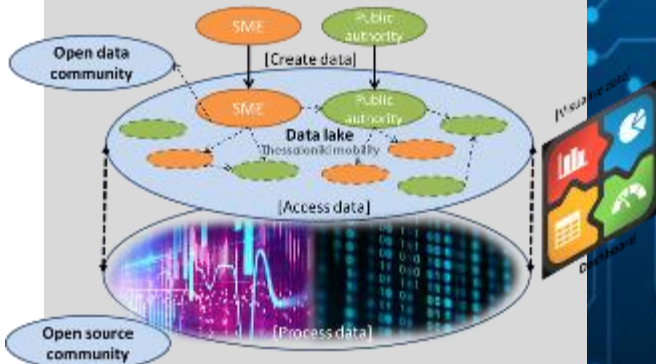
2. Analyse the current (& future) UFT situation (II)

✓ **Analyze problems and opportunities with the experts**

- Which are the factors influencing UFT?
- Which are my city's main UFT characteristics?

City characteristics

- Vehicle size/type (share of delivery trips made by vehicles of less than 3.5 t gvw)
- Number of deliveries/ collections (average number per establishment per week)
- Quantity of goods delivered/collected (average size of goods delivered/ collected per drop)
- Environment-friendly distribution (share of trips undertaken by environmental-friendly means, e.g. EVs, cargo-bikes, etc.
- Time of day of delivery/pick up (share of deliveries/pickups made between 07:00-10:00 hrs)
- Empty running (as share of a vehicle's average daily mileage)
- Time to carry out deliveries/collections (average vehicle dwell time – minutes per delivery)
- Journey speed (average speed during peak hours)
- Loading/unloading activities (share of illegal on-street loading/unloading in total deliveries)
- Journey length (average round trip length)

Influencing Factors

- Consumer requirements
  - Same day (or next hour) delivery
  - Knowledge of what happens to the digital data they provide
  - Information about products & their social & environmental impact
- Economy & demographics
  - GDP per city inhabitant
  - Fuel cost
  - Urban population share (% of total regional level)
  - City's population share of over 65 years old
  - Household size
  - Retail establishment size
- New technologies
  - Internet of Things (IoT)
  - Big data & advanced analytics
  - Driverless delivery vehicles
- Ecology & social responsibility
  - Demand for environmentally-friendly products
  - Demand for ethical sourcing
  - Demand for local sourcing
  - Demand for reduced waste
  - Collaborative delivery solutions
- Logistics solutions
  - Green delivery solutions
  - New business models
  - Augmented reality

Recommendations:

1) Use of consensus building tools such as the UCT of **NOVELOG (uct.imet.gr)**

2) Simulation models & freight generation / freight trip generation models for describing the current and future urban freight transport demand

How to formulate the goal of the strategy?

Example of a consensus building tool
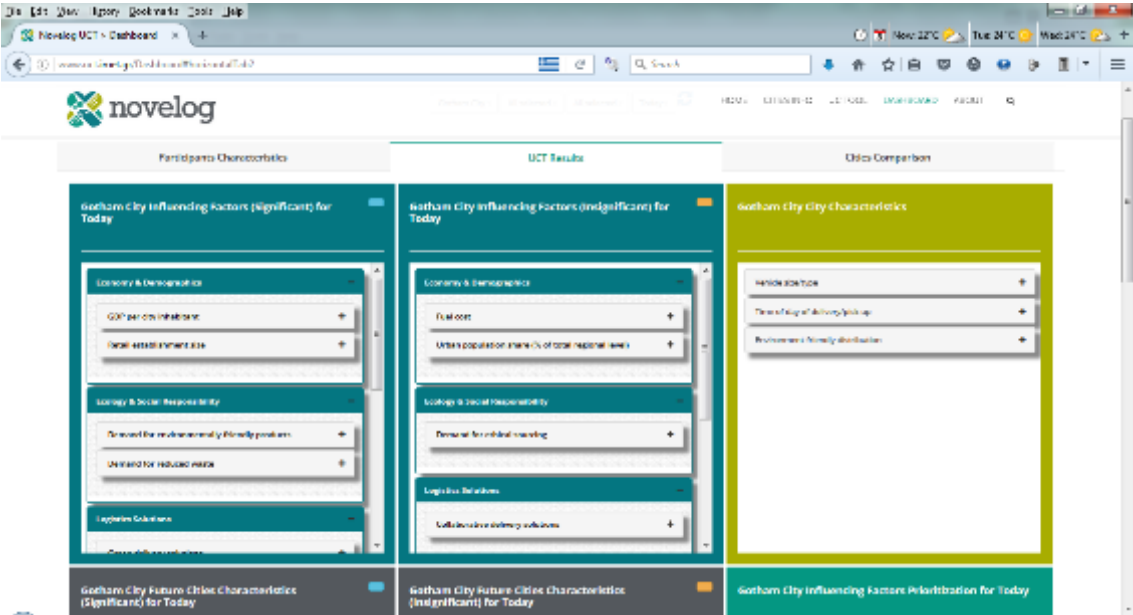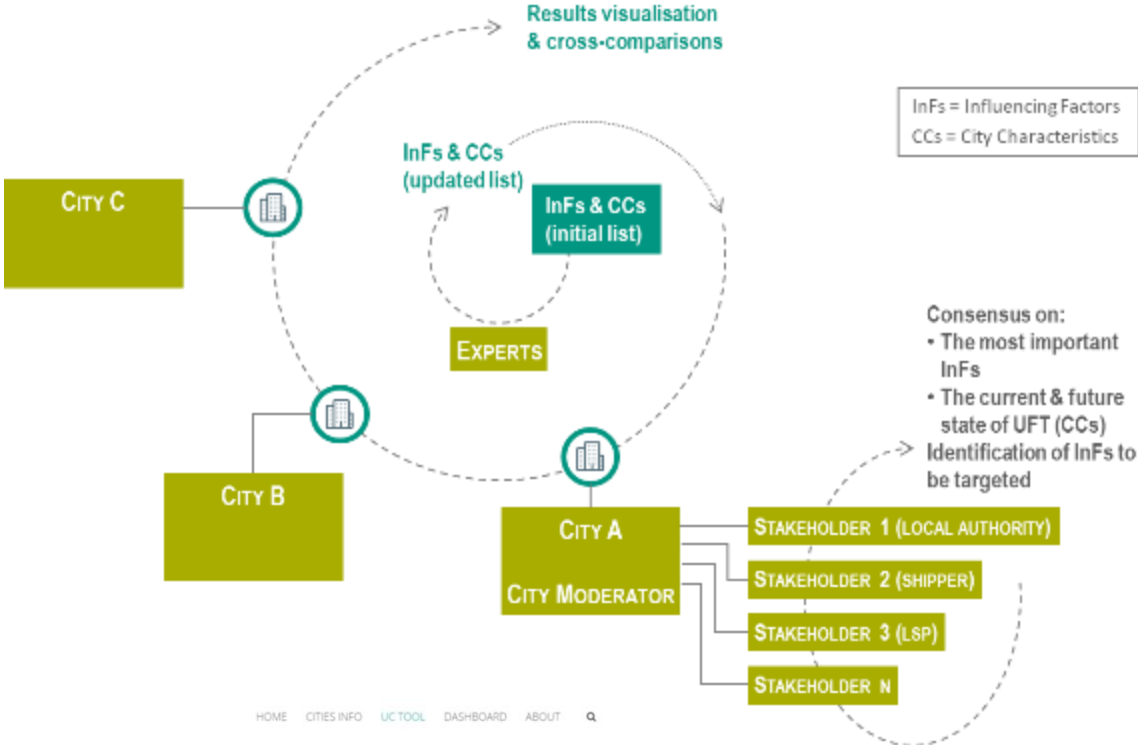
Find NOVELOG
UCT at: www.uct.imet.gr

Develop City Logistics Vision & objectives
with the stakeholders

Turin, Italy

Main factors influencing the city's UFT
(in order of significance)

Today
1. Consumer requirements for same day (or next hour) delivery
2. Green delivery solutions
3. Fuel cost
4. Internet of Things
5. Consumer requirement for knowing what happens to the digital data they provide

2020
1. Consumer requirements for same day (or next hour) delivery
2. Internet of Things
3. Fuel cost
4. Consumer requirement for knowing what happens to the digital data they provide
5. Green delivery solutions

2030
1. Consumer requirements for Information about products & their social/ environmental impact
2. Internet of Things
3. Green delivery solutions
4. Consumer requirement for knowing what happens to the digital data they provide
5. Green delivery solutions

The city's main UFT characteristics

	Today	2020	2030
1. Number of deliveries per establishment per week	6-10	± 5%	± 5%
2. Time to carry out deliveries (mins)	5-10	± 5%	± 5%
3. Average size of goods delivered per drop	½ pallet	± 5%	± 5%
4. Share of trips undertaken by environmental -friendly means (EVs, cargo-bikes)	n/a	+5-15%	>15%
5. Empty running	<20%	± 5%	± 5%
6. Average round trip length (kms)	31-40	+5-15%	

Define
ALL TOGETHER
the vision
of your city's
city logistics system.

*Use quantified descriptions
Align with the vocabulary of
the industrial stakeholders*

novelog

How to formulate the goal of the strategy?

Build & Jointly assess Scenario of measures (I)

1. **Map Value Interactions in city logistics**

city

Incentives/ infrastructure / facilitation

CO2 free city

Consolidation & green solutions

Low cost Small quantities Flexibility

nothing or taxes

logistics industry

consumer

More demand Cost undertaking
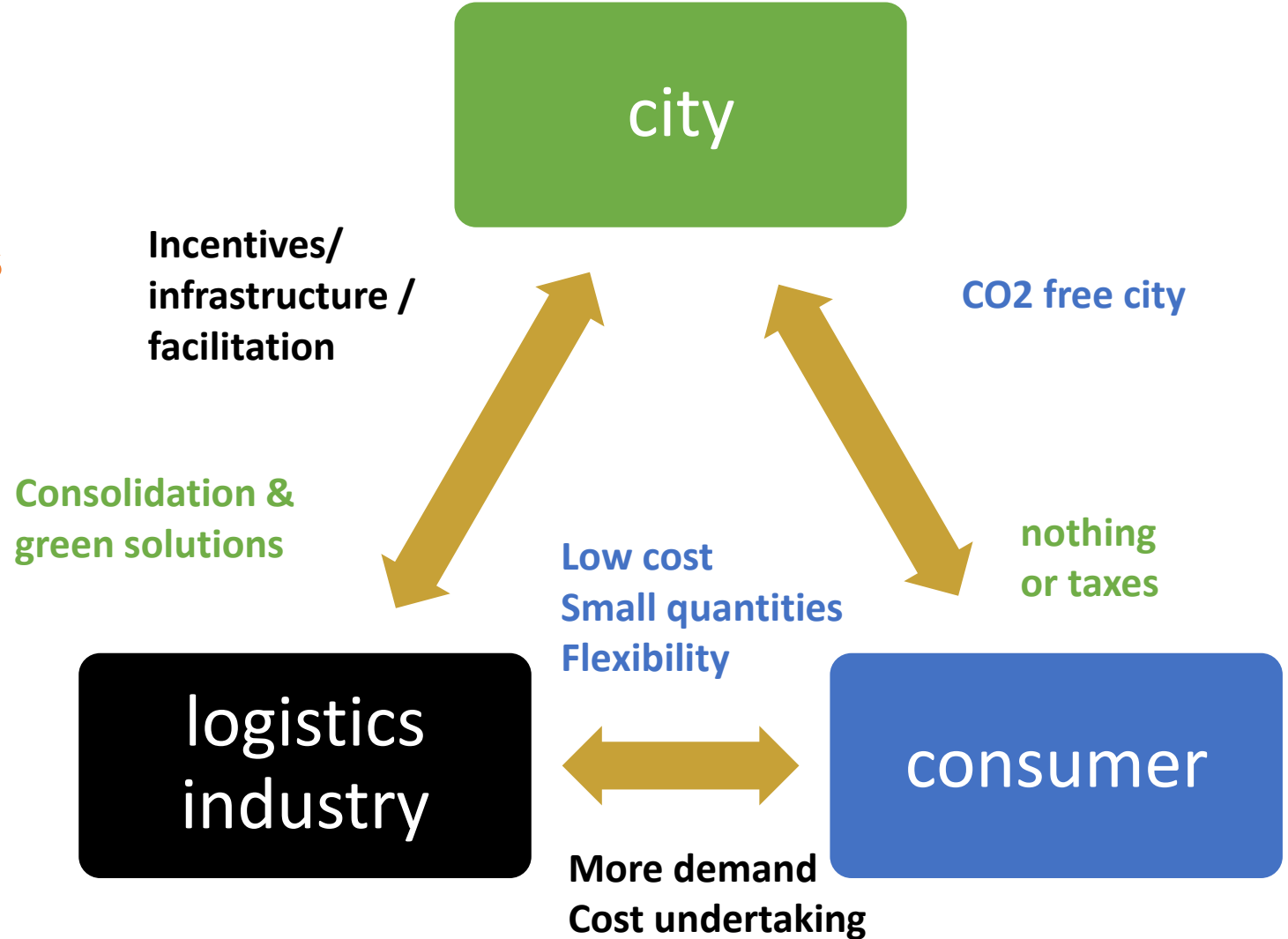
Build & Jointly assess Scenario of measures (II)

Copenhagen-Denmark

Service Level Agreement for a Freight Nework

PARTNERSHIP AGREEMENT

2. **Select in an MSP meeting the type of intervention in accordance to the goals (bigger impact) :**

2. Area focused intervention (short term holistic)

3. Industry segment focused intervention (medium term specific)

4. Infrastructure & Technology (long term holistic)

How to start working on a strategy?

3. **Secure the contribution of each stakeholder in scenario & measures by developing Service Level Agreements (SLAs) with Urban Freight networks/ecosystems**

- UFT stakeholders focusing to an Area of intervention for achieving sustainable city logistics (i.e. in city center)
- UFT stakeholders representing/serving specific sector for dedicated measures (i.e. super markets, construction logistics etc)
- All UFT stakeholders for horizontal policies , incentives (i.e. e-vehicles)

Build & Jointly assess Scenario of measures (III)

4. **Use available Tools for measures selection & guidance in collaborative business models development**
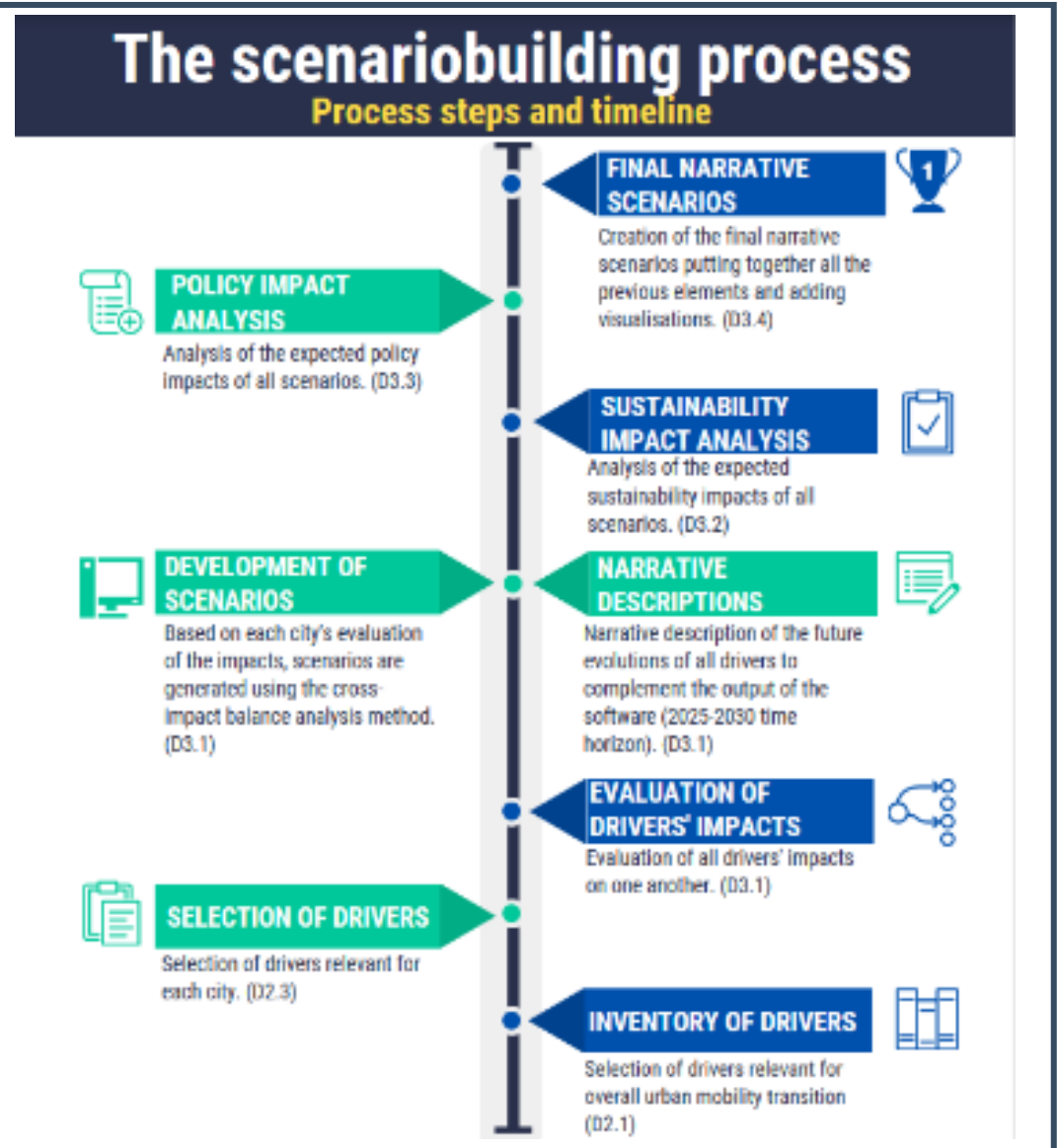
Build & Jointly assess Scenario of measures (III)

5. Incorporate innovation & resilience in the plan by developing narrative scenarios and securing continuous monitoring

- Implementing a cross-impact balance analysis for the identification of the main drivers
  - Gathering through workshops
 - Building the Narrative descriptions of the scenarios

Set targets and indicators

✓ **Create and assess measures with stakeholders & Define integrated measure packages**

1) Compare the performance of the last experiences on the implementation of UFT measures based on the city's typology

2) Use tools that can match measures and interventions with city typologies, as well as city logistics observatories.

3) Discuss outputs with stakeholders

4) Use tools for enabling the simultaneous evaluation of alternative policy measures, technologies i.e. Multi-Actor Multi-Criteria Analysis (MAMCA) Software

5) Finalize the SULP package of measures
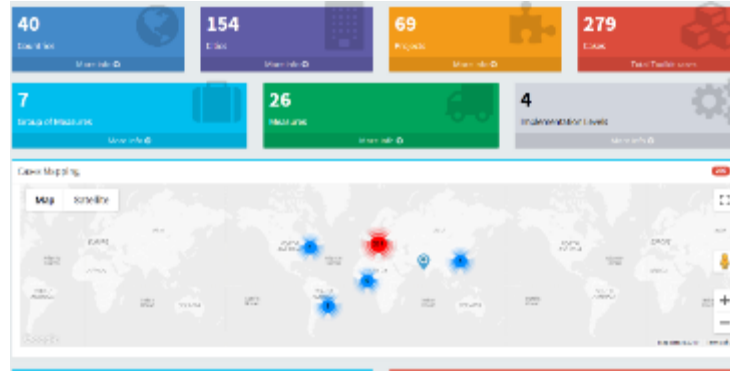
Thank you!

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Agree actions & responsibilities

Describe all actions to the MSPs participants

Estimate costs and identify funding sources

1. Adapt the city logistics **Business Model Canvas** for mapping the value of cooperation for the different stakeholders
2. **Revise the cooperative business model** for increasing robustness and resilience of cooperation
3. **Evaluate the Business models**

Consolidation scheme	Customer (offering)	Value proposition	Reduced value proposition	Revenue stream	Cost structure
Urban consolidation centre (UCC)	LSP (UCC services)	Green branding Responsiveness to delivery (due to proximity) Value-added services	Additional fixed costs Additional handling	Subscription model	Existing UCC to be renovated Operational costs
	LSP (EV rental solutions)	Green branding EV rental (and recharging)	Additional transport costs	Subscription model	Purchase of vehicles and charging system
Micro-consolidation centre (MCC)	LSP (Light goods delivery)	For receivers – higher availability and therefore convenience Reduced transport cost Access to restricted area Pick-up point for parcels	Additional handling	Long-term contract with LSP No extra cost to receiver Charged for parcel pick-up	Investment and operational costs for MCC Real estate (provided by municipality)
	(Other) LMO (Bicycle servicing)	Bicycle repair, recharge,	None (additional service)	Per use	Investment and operational cost for cargobike deliveries
	City council (Delivery/transport data)	Understand UFT flows for e-commerce	None	-	ICT fleet management system
Receiver-led consolidation (RLC)	Retailers in shopping (replenishment with consolidated transport)	Delivery flexibility Delivery reliability and punctuality "Basic" transport service cost reduced Value-added services	None	Base service – paid by shopping centre owners Extra services – paid by tenants	Use of existing UCC/warehouse -> no new investment cost Operational costs
Automated locker system (ALS)	LSP (Light goods delivery)	Reduced failed deliveries Reduced costs for transport Access to city Green branding	Extra costs for usage	Pay-per-use charged to LSP	Real estate (fully funded by municipality) Installation of lockers
	Receivers (Light goods delivery)	Reception flexibility Reception accessibility No extra cost	May not fit every receiver due to travelling	None	Operating costs (maintenance, surveillance, energy, ICT system)

Agree priorities, responsibilities & timeline

Ensure wide political and public support