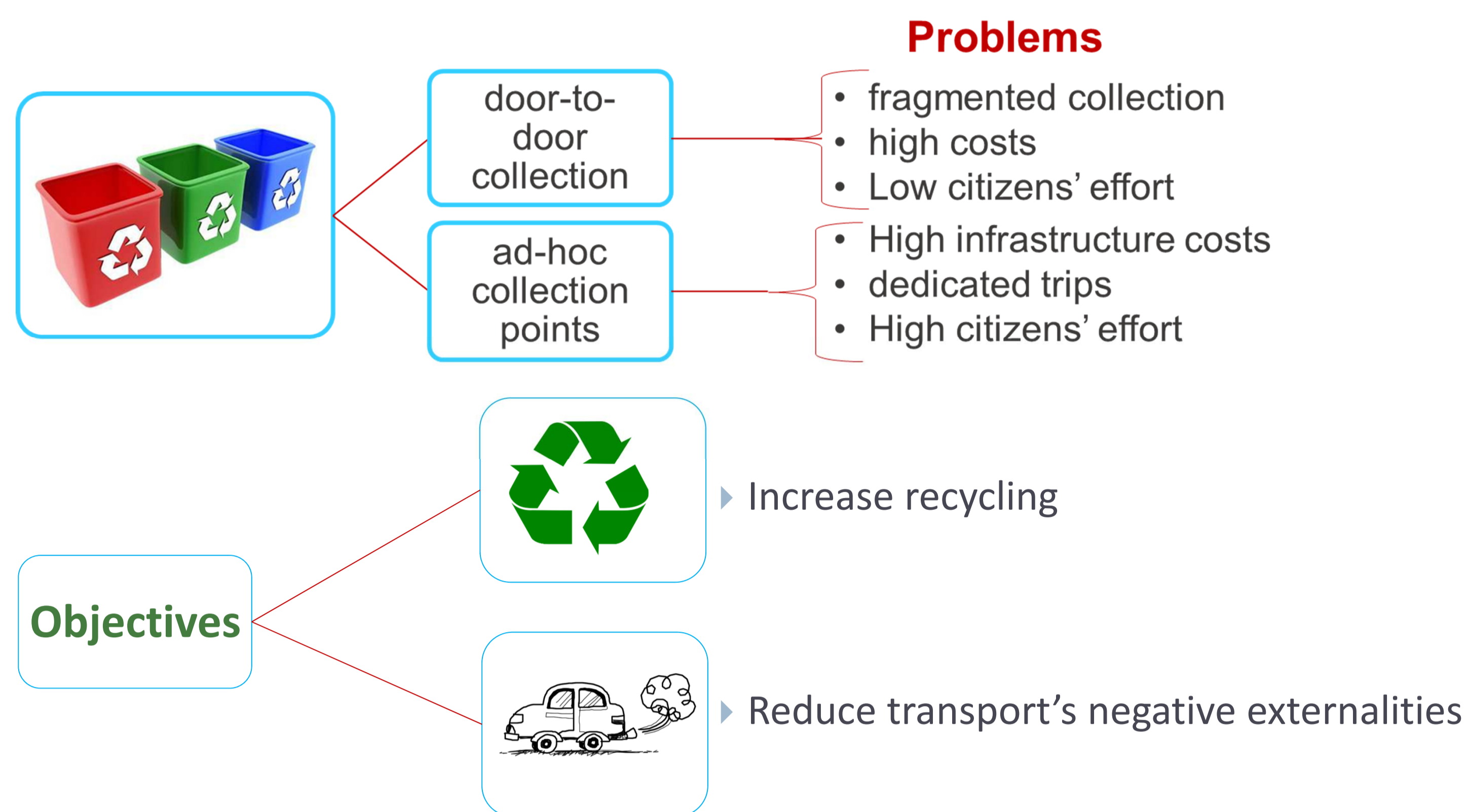


# ROME LIVING LAB

## INTEGRATING DIRECT AND REVERSE LOGISTICS

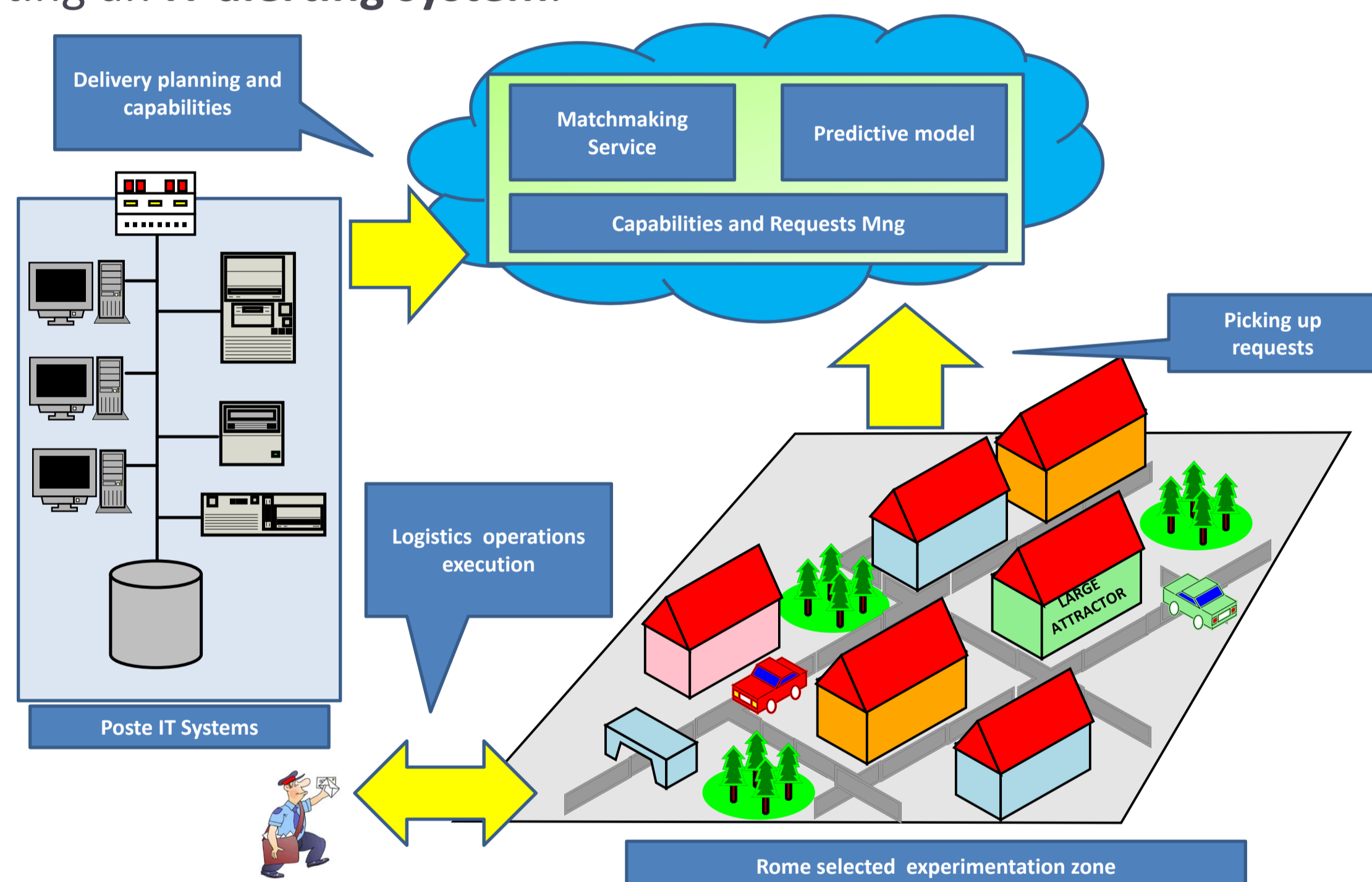
### PROBLEM AND AIM

The urban waste collection system is fragmented, expensive and inefficient.



### DESCRIPTION OF THE SOLUTION

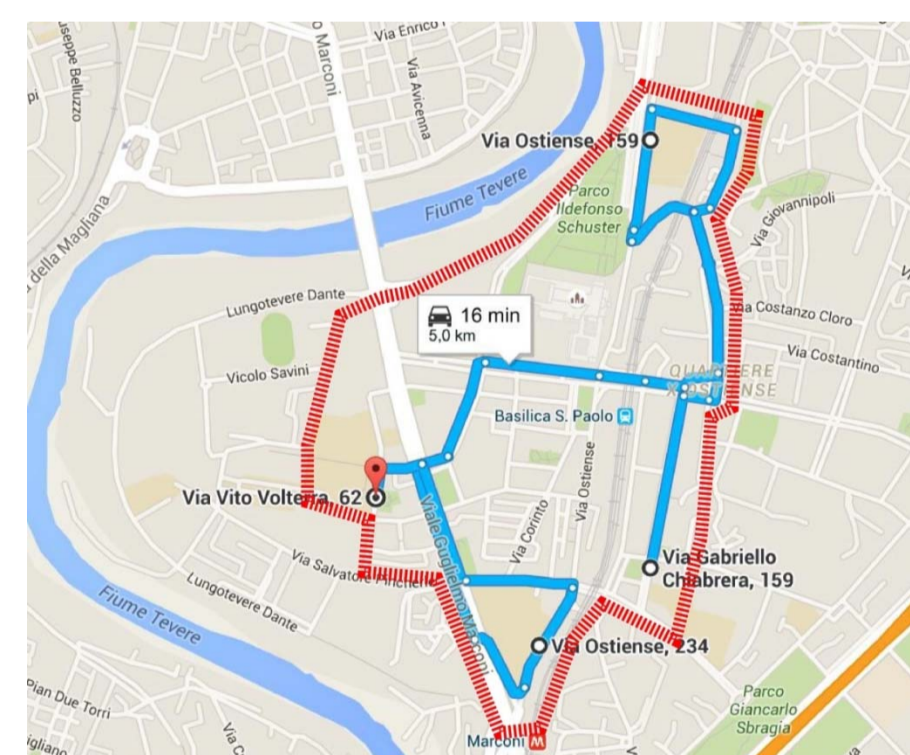
Urban waste management's efficiency can be increased by **integrating direct and reverse logistics flows**. The main idea is to involve the national postal operator, already delivering mail/parcels all around the city, in the pick-up, via electric vehicles, of **recyclable materials** stored in given facilities of **large attractors** (e.g. hospitals, universities, shopping malls, etc.) during the **same transportation route** and exploiting an **IT alerting system**.



### IMPLEMENTATION PROCESS

The core partners have decided to perform several **Living Lab rounds** starting from a small-scale implementation later to be up-scaled.

► In the **first round** (completed) the type of recycled material considered was limited to plastic caps and the area covered was minimised (~1km<sup>2</sup>) involving University buildings as large attractors, in order to practically implement the solution in a real-life context and discover organisational problems as well as market opportunities.



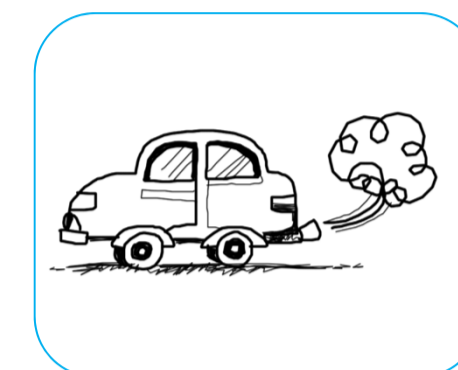
► The **second round** (on-going) explored the opportunity to extend the implementation in terms of flows involved, sites and alternative recyclable/reusable waste by including the solution tested in the first round within the actual logistics process for urban waste management of the city of Rome according to the guidelines recently announced by the Mayor.

### RESULTS TO DATE

► *First round of the Living Lab*



► +153%



► - 40kg of CO<sub>2</sub> → - **13,200kg of CO<sub>2</sub>**  
(monthly) (estimated monthly in Rome)

► *Second round of the Living Lab*

Preliminary estimations, linked to the deployment of the system tested in the first round of the Living Lab to specific **hazardous materials** (exhausted batteries and oils, pharmaceuticals and WEEE) collected at "*domus ecologiche*" (fenced areas of about 25 square meters located in proximity of an aggregation of condominiums), reveals that a total of 17,236kg of CO<sub>2</sub> can be annually saved if considering the involvement of 25% of the condominiums in Rome.

### CHALLENGES



increase **financial** revenues

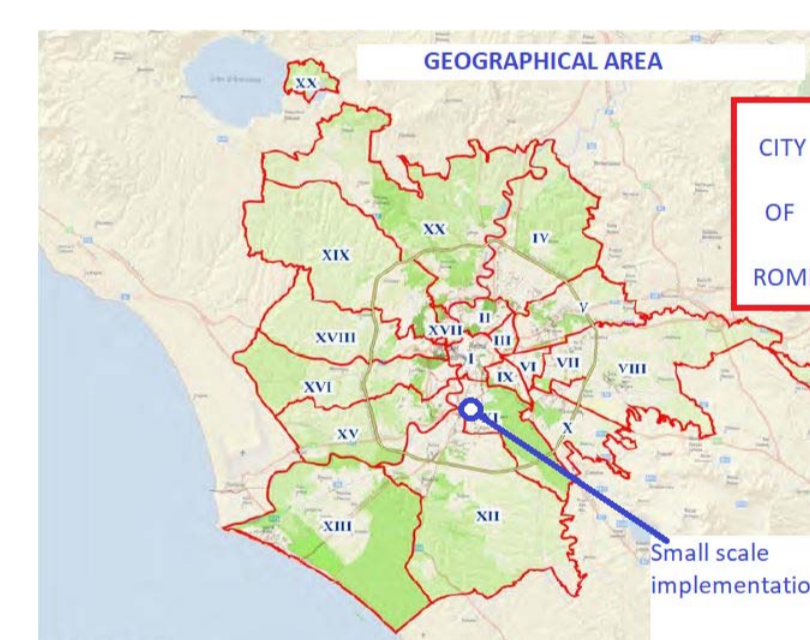
**regulatory/contractual** constraints



**Locating** recycling facilities

### OPPORTUNITIES

► Several key points characterising the **environmental policy action plan** in Rome could potentially benefit from the adoption of the integrated forward-reverse flows solution in the Living Lab implementation. For instance: (i) improve separate collection systems; (ii) implement recycling in schools and public buildings; (iii) develop a recycling plan for small WEEE; (iv) design a new system for recovering highly polluting vegetable oils locating containers in public areas; (v) create new public collection centres for domestic metals production. Focusing on hazardous materials represents an opportunity to reduce illegal discharging of toxic/dangerous waste



### OTHER SCOPING STUDIES UNDERTAKEN

- **Loading areas management** optimising loading bays locations and assessing parking reservation systems
- **Demand management through off-hour deliveries** identifying the most effective levers to stimulate a voluntary off-hour delivery program adoption
- **Crowdsipping** assessing the potential of crowdsipping by public transport and implementing a new system

### CONTACTS

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