Multi-Modal Traveling: beyond cars

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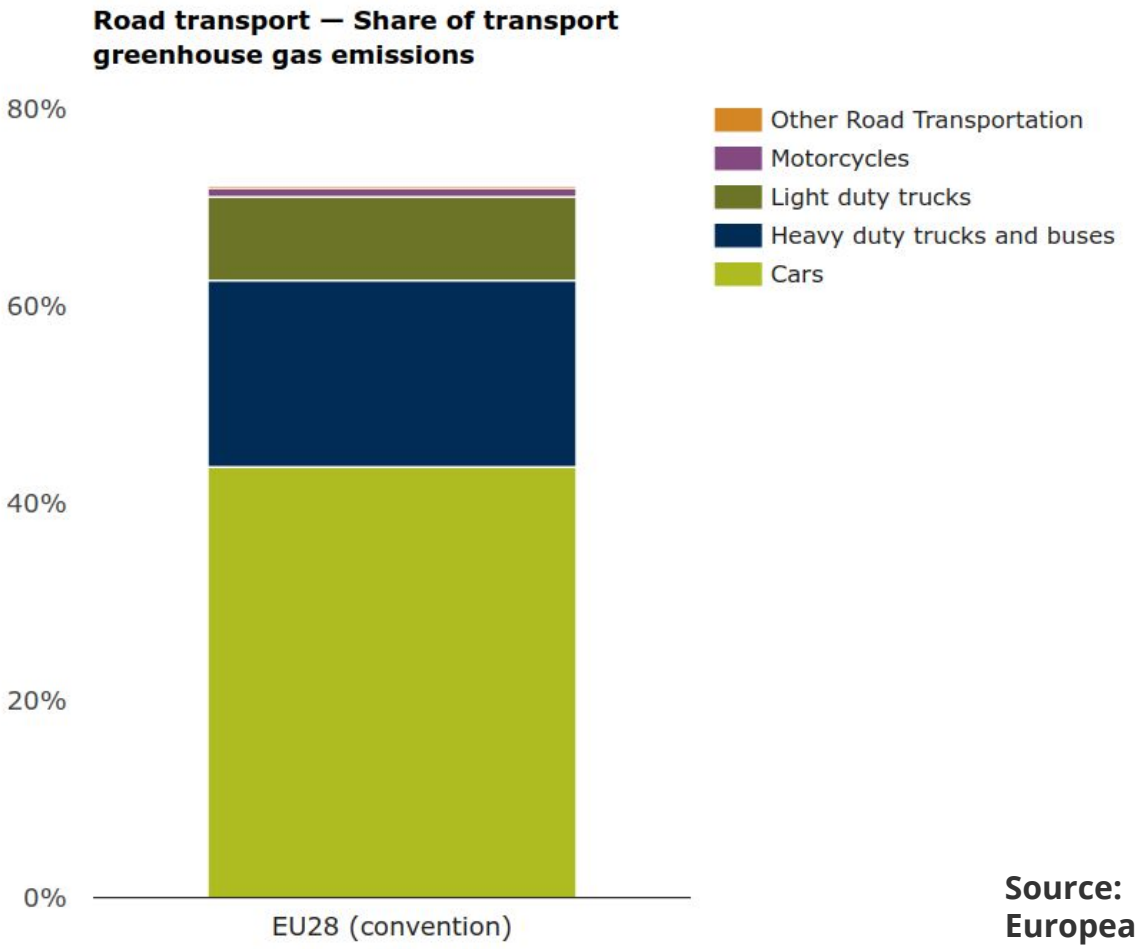
Horizon 2020
research and innovation
programme

Summary

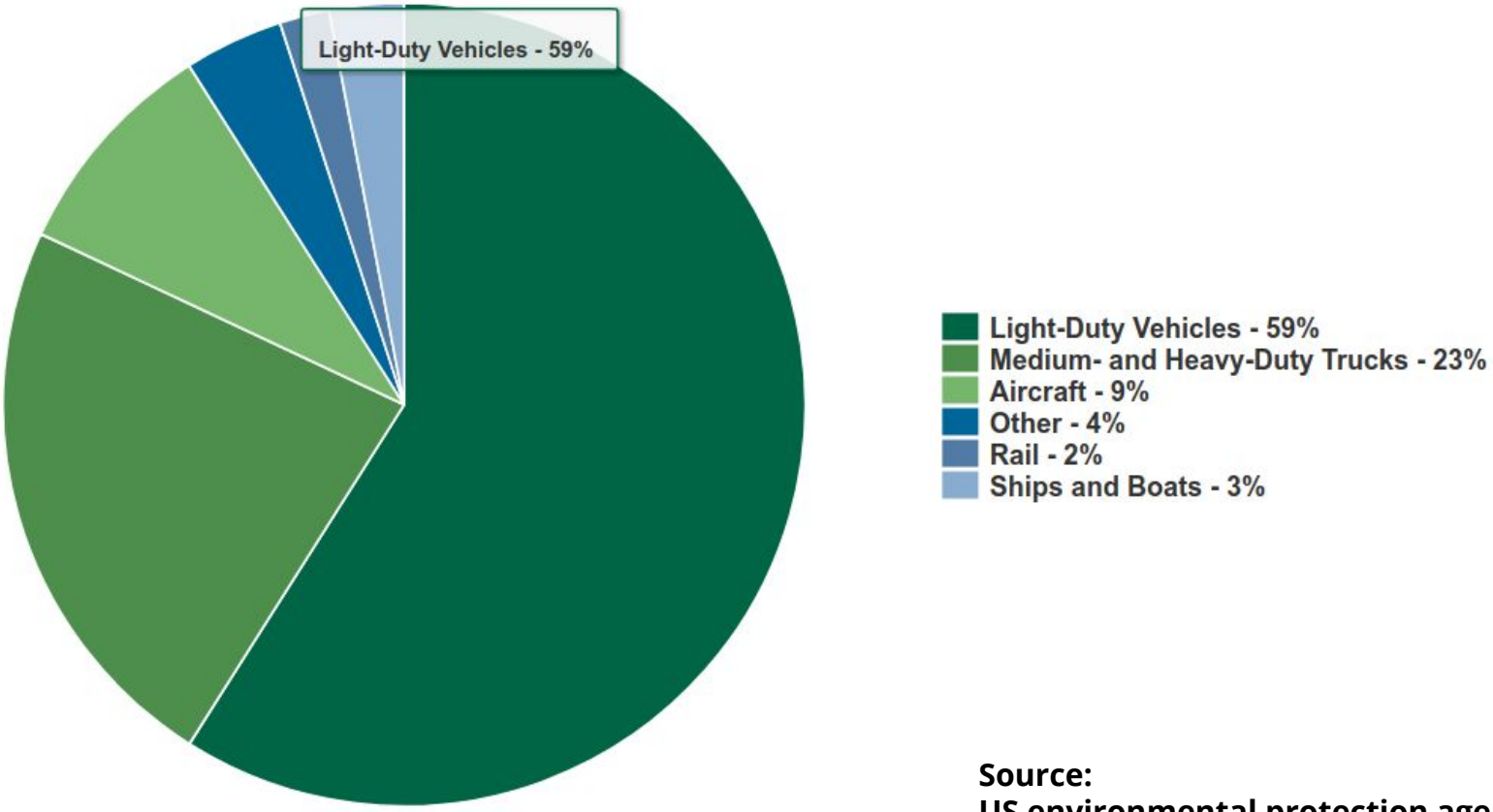
- Why we need multi-modality
- What are the opportunities for public and private sector
- What we need to realise them and the challenges
- What should be our role?

Problem 1: Survival



Source:
European Environment Agency (EEA)

2017 U.S. Transportation Sector GHG Emissions by Source



Source:
US environmental protection agency

Problem 2: Traffic

2 to 4 days lost,
$1,5 to 3k cost
...per driver!

Policies
are coming

Europe's answer to the emission reduction challenge in the transport sector is an irreversible shift to low-emission mobility

European strategy for low-emission mobility

Shift means changing to more energy efficient modes or routes... or shifting passengers from private vehicles to public transport and non-motorized modes.

Asian Development Bank

Restructuring the regional transport system in line with urban development, supporting the introduction of various transport services that match the needs of each region.

Japan's National Land Formation Plan

PARIS TO BAN CARS IN CITY CENTRE ONE SUNDAY A MONTH

Only those travelling on foot, rollerblades, bikes or scooters will be allowed access

U.S. APRIL 20, 2018 / 7:13 PM / A YEAR AGO

New York banning cars from Central Park starting this summer

Oslo car-free plan builds on micro-mobility trend

Norway's capital steers away from reliance on cars as political agenda is aided by technological innovation to realise social goals

Chengdu
"Great City"

Copenhague
low-emission
zone

Solutions

Low-emission vehicles

Multi-modal traveling

Multi-modal traveling

DO THE RIGHT MIX

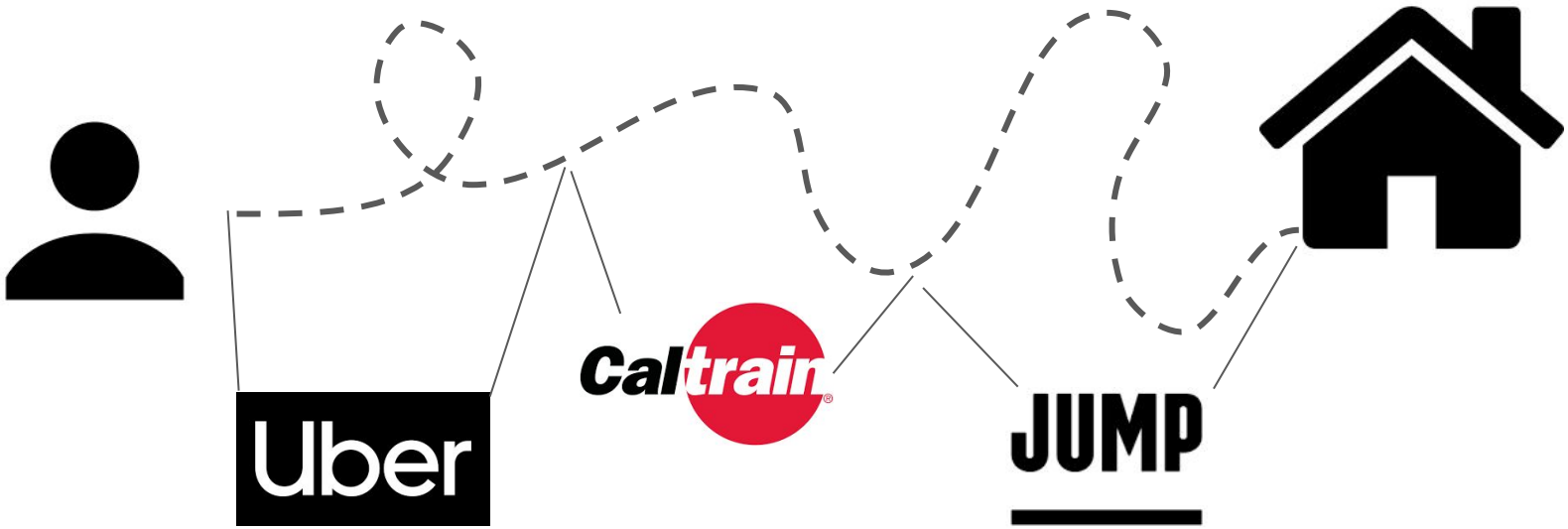
Goal: Enable and encourage multi-modal transport to balance

1. Co2 emissions
2. Traffic
3. Time to arrival
4. Costs

Trip as fundamental unit

Some(thing/one) goes or needs to go from A to B

Several providers may cover all, or combinations possible



Service examples (Opportunities)

For Public sector:

- Accurate modal share data
- Data-driven policies and infrastructure decisions
- Better journey planners
- Citizen engagement

For Private sector:

- Identify possible alliances
- Uncover demand
- Customer engagement
- Show they do help with mobility

What we need? (Needs)

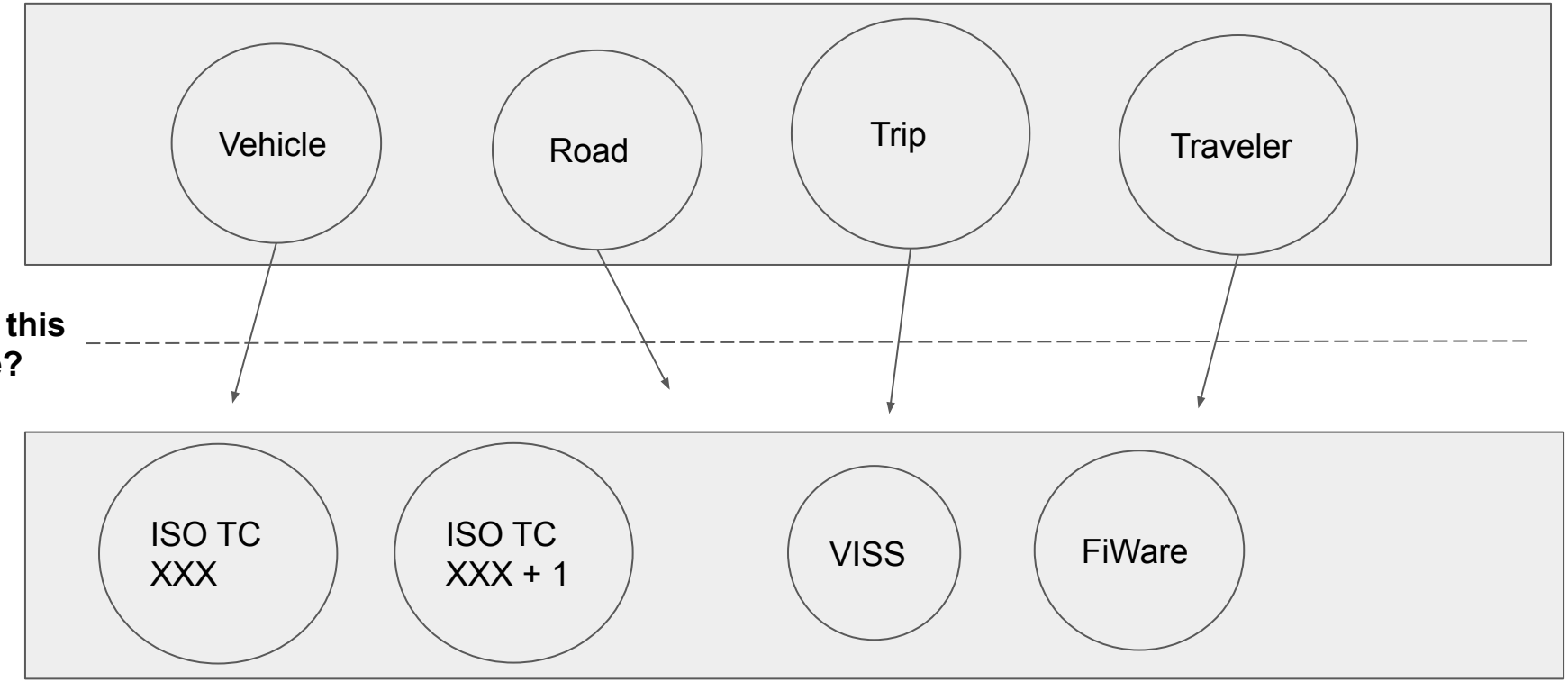
- Enable data sharing spaces
  - In the context of an urban area (Smart City)
  - Ad-hoc sharings (P2P agreements)
- Model different types of vehicles
- Include travelers (for their data, for their feedback, for their custom)

Challenges

- Vehicle heterogeneity
  - Vehicle sensor heterogeneity (availability and accuracy)
- Several existing efforts, how not to be another drop in the ocean?
  - ISO TC/204
  - FiWare / CCAM / C-ITS / C-Roads
  - Private Companies
- Trust and accountability (Is the data you provide accurate?)
- Privacy and data protection
- Data valuation

What should be our role?

Define this top classes and relationships?



Set this line?

Web of vehicles?

W3C Standard

Every car is an endpoint

Every city is an endpoint

Every train is an endpoint

Every bike is an endpoint

Scope questions

- Urban transportation? Or should we also support freight?
- What to include beyond vehicles? Payments? Infrastructure?
- What do defer/link that to to other standards?