ITS/innovasjon i Miljøpakken

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Miljøpakken challenges

Data issues (CO2, NO2, noise, PM): Uncertain quality (SSB, RUV), lack of comparability, lack of granularity

Behaviour change: difficult to motivate people to switch transportation mode choice, especially regarding residential and firm location decisions

Long time spans: For public transport investment, the associated changes in land use typically take 10-15 years to realise.

Why Smart Mobility?

- Urban congestion, air quality, economic loss, degraded quality of life, need to reduce GHG emissions from transport-related sources

- Changes in demography, residential/firm location decisions, economic structures, and, not least, the availability of new technology and tools.

Key elements of Smart Mobility

- Move from pure infrastructure provision to mobility as a service

- Move from high-carbon motorised mobility to lower carbon motorised/non-motorised forms of mobility

- Use of data analytics and ICT infrastructure to optimise the mobility system

- Integrated suite of services and products

- Focus people, not just on technology. Includes behaviour change, quality of life, economics, sociology, planning, public health.

Smart Network Architecture

- Smart packages, dumb network-Internet, autonomous vehicles

- Dumb packages, smart network-train network, air traffic control, traffic signals

The emerging smart mobility architecture combines smart packages (people, cars, buses, trucks, ships, airplanes) combined with smart networks (peer-to-peer mesh networks, Intelligent Transport Systems).

Mobility as a service
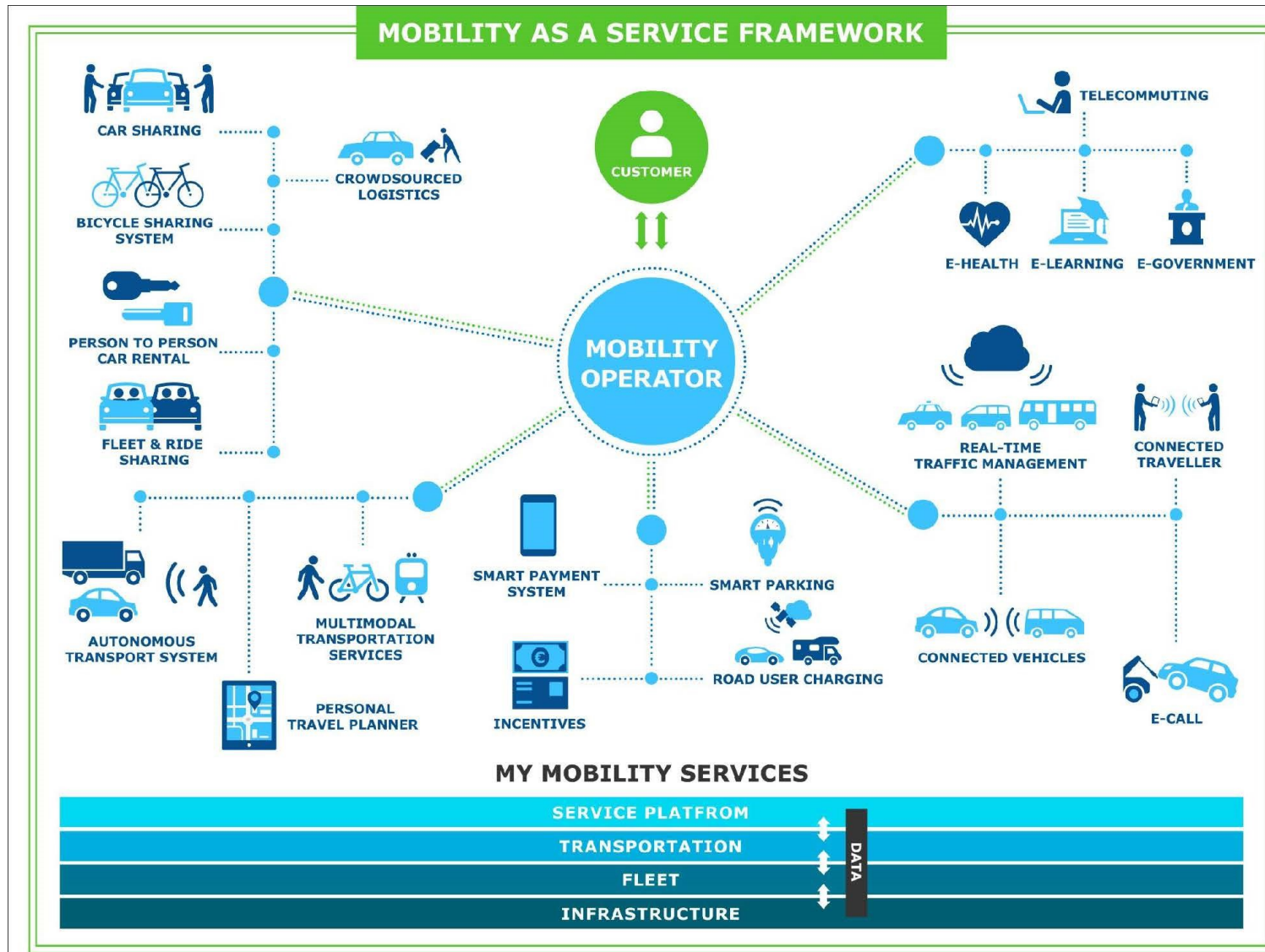
Connected cars

HOW WAYMO'S SELF-DRIVING CAR WORKS

One of Waymo's three lidar systems that shoots lasers so the car can see its surroundings. Waymo says this lidar can detect a helmet two-football fields away.

Radar sensors can detect objects in rain, fog, or snow.

A forward facing camera works with 8 others stationed around the car to provide 360 degrees of vision.

Waymo's self-driving sensors are tightly integrated into the hybrid minivan created by Fiat Chrysler.
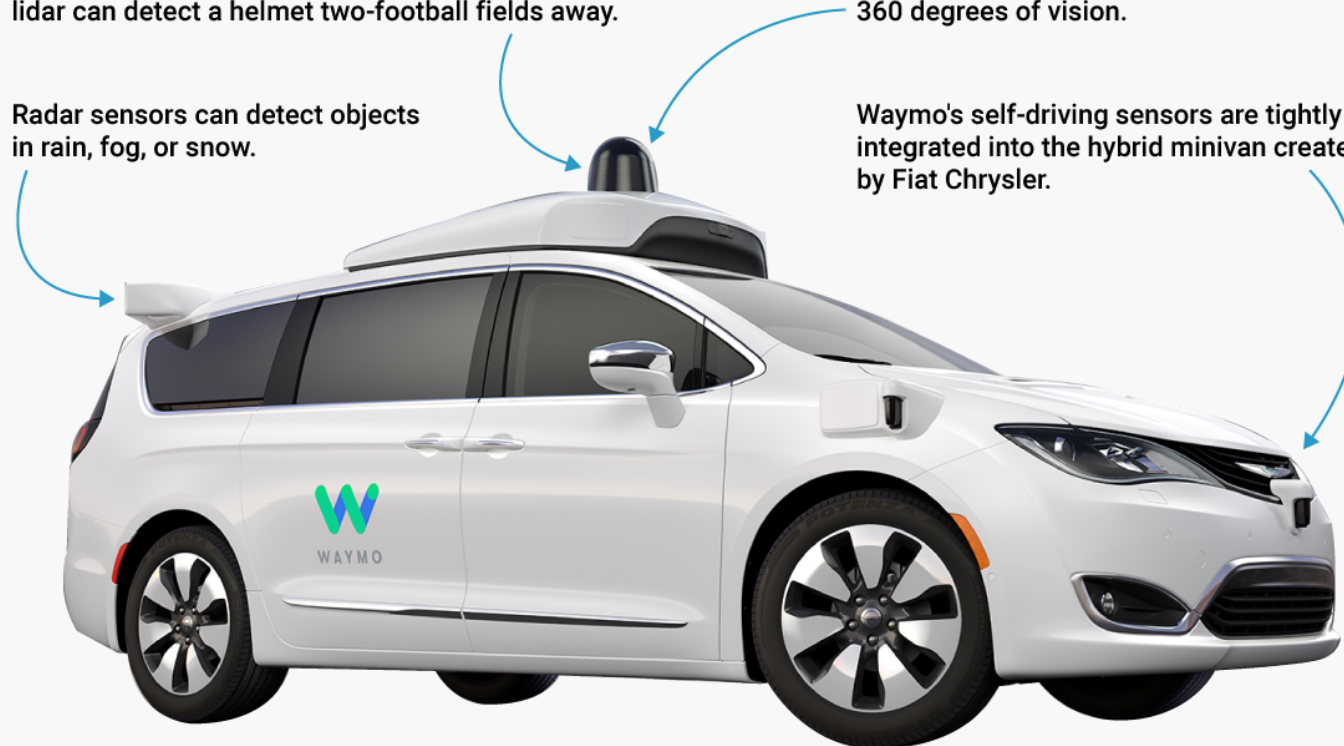
WAYMO

SOURCE: Waymo
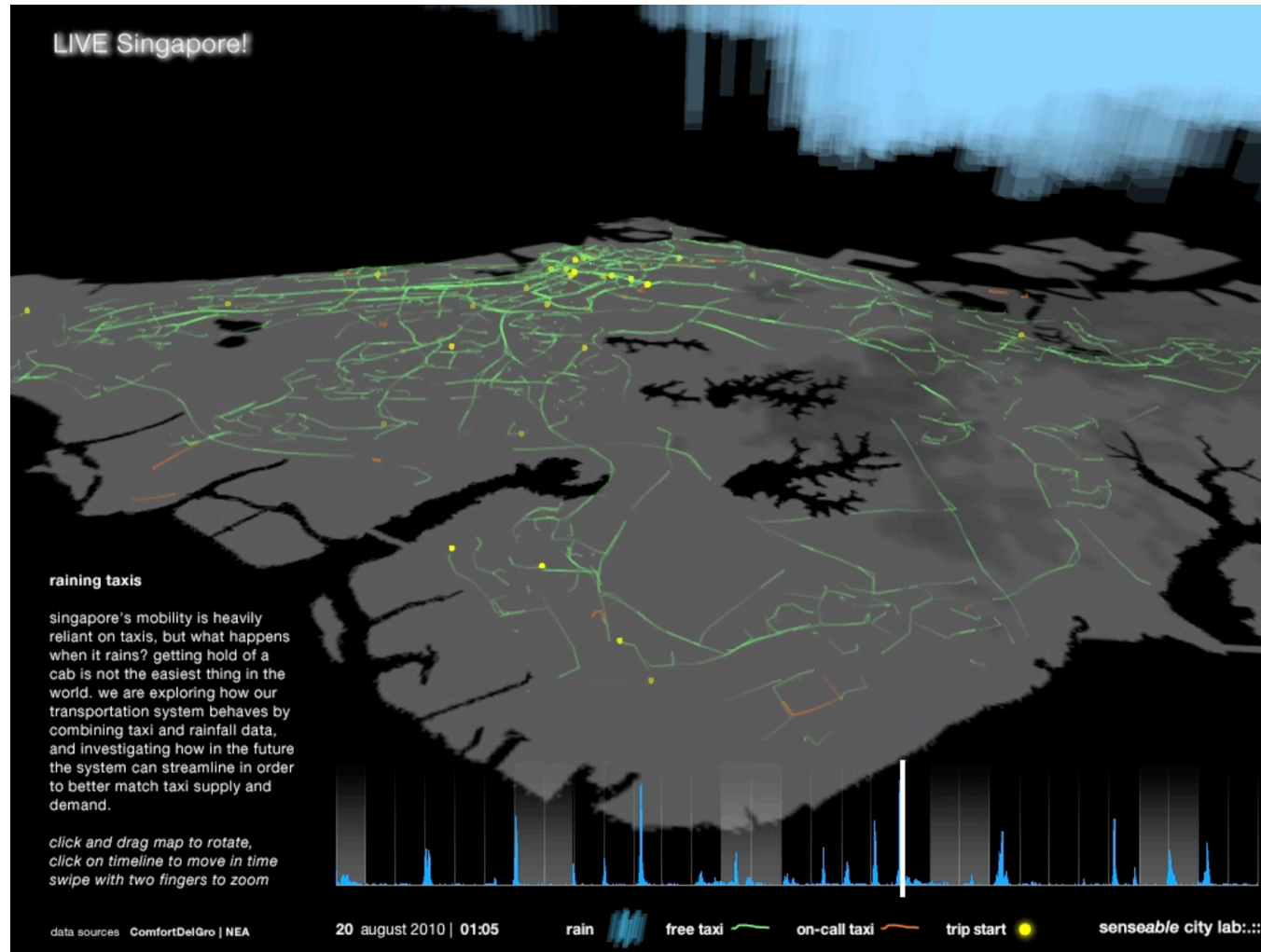
BUSINESS INSIDER

Intelligent traffic control-Copenhagen

Origin-destination bike share data- Philidelphia
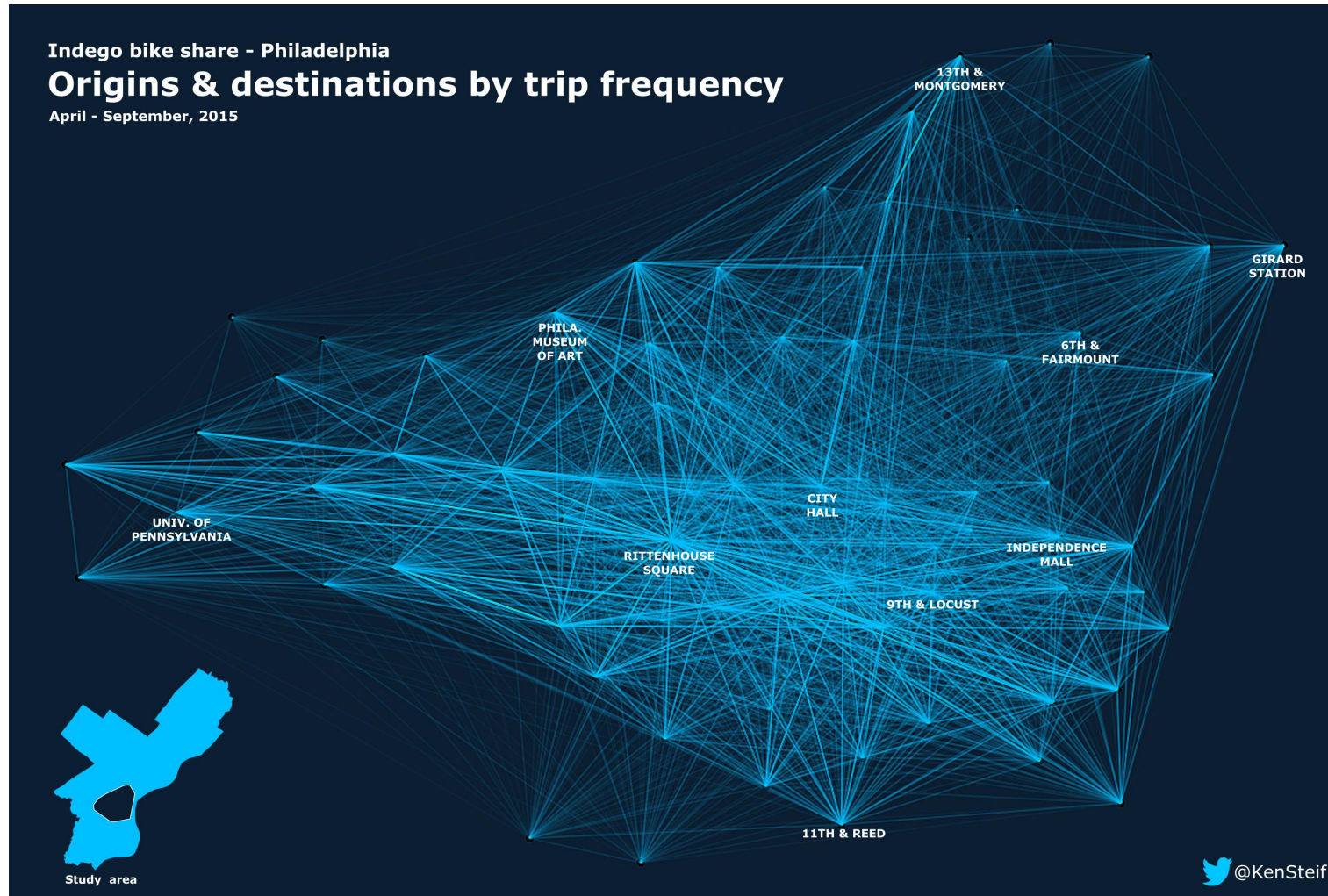
Open mesh network-Porto
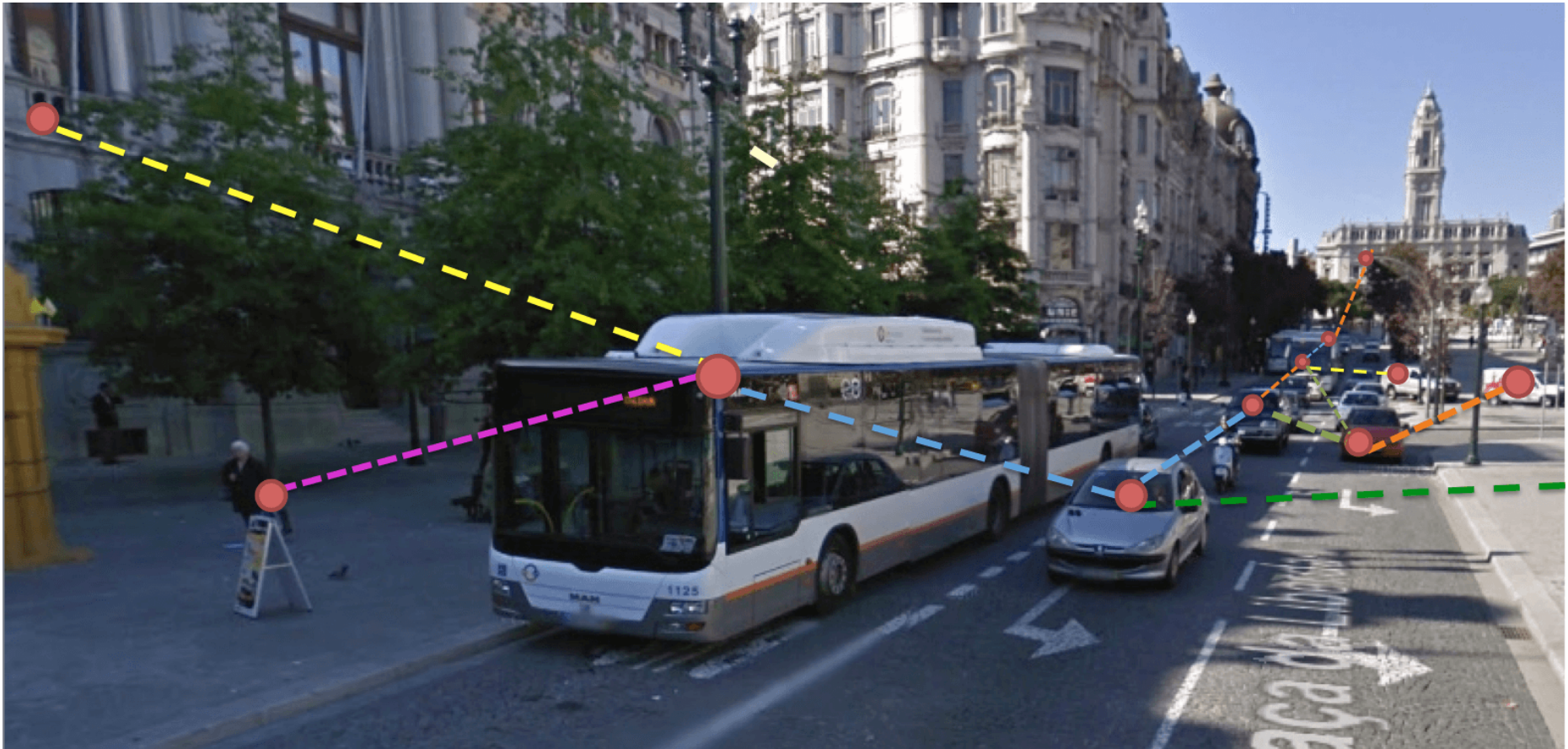
Raining taxis in Singapore

Taxi sharing in NYC

CO2 measurement-Nuremburg (DE)

Calculating air pollution based on mobile data
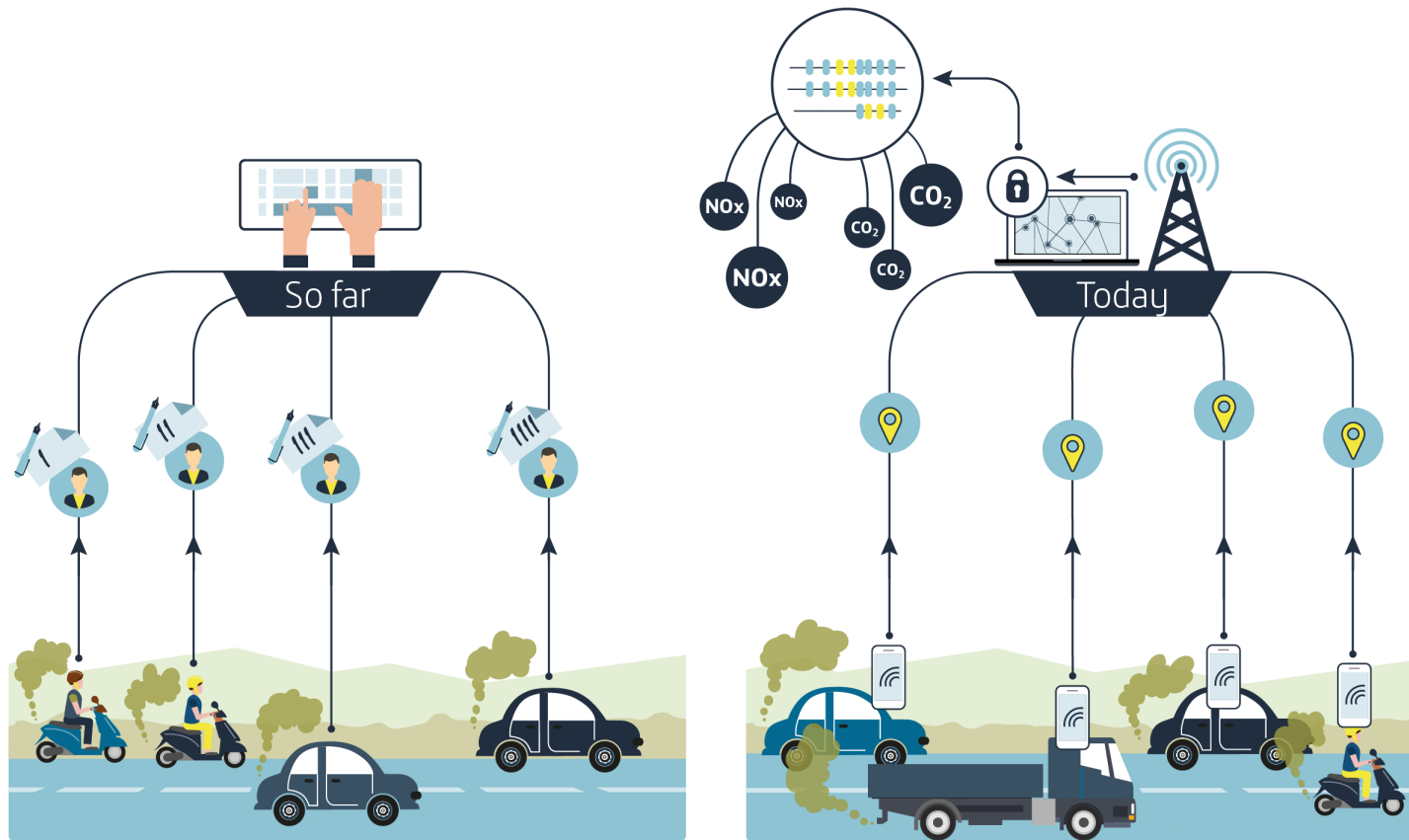
Autonomous freight transport

Smart urban logistics
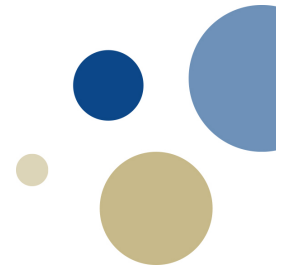
The future of shopping

The future of smart mobility

- Zero (or near-zero) carbon
- Electrification
- Autonomous vehicles
- Sharing, not owning

ITS/Smart Mobility Innovation Opportunities

I SKATE TO WHERE THE PUCK IS GOING TO BE, NOT WHERE IT HAS BEEN.

Wayne Gretzky

Seamless mobility

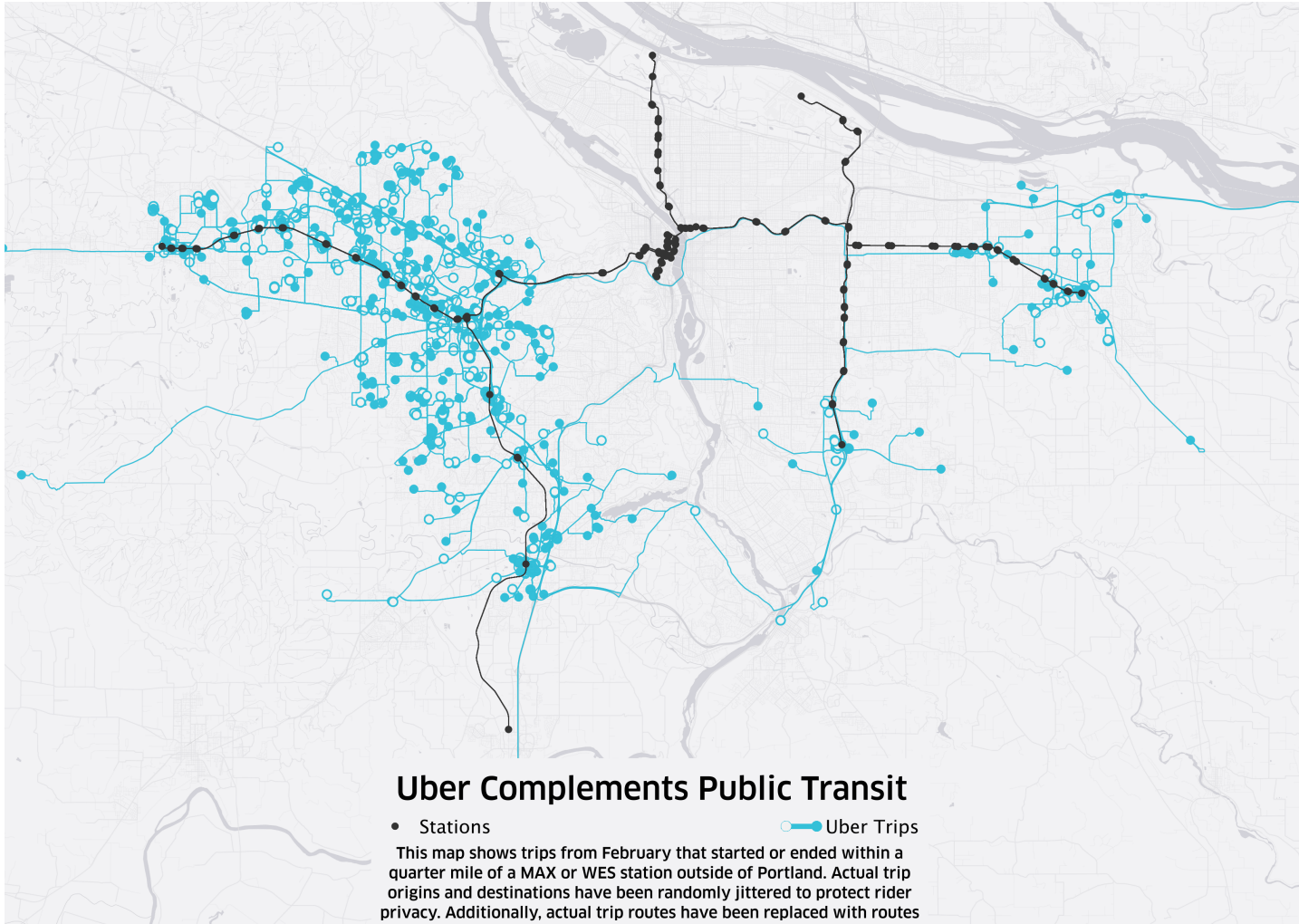**New Mobility Business Models & Partnerships Enable First/Last Mile**

In both B2C and B2B environments customers are demanding intuitive services; many players investing significantly to deliver a seamless proposition & user experience for Integrated Mobility
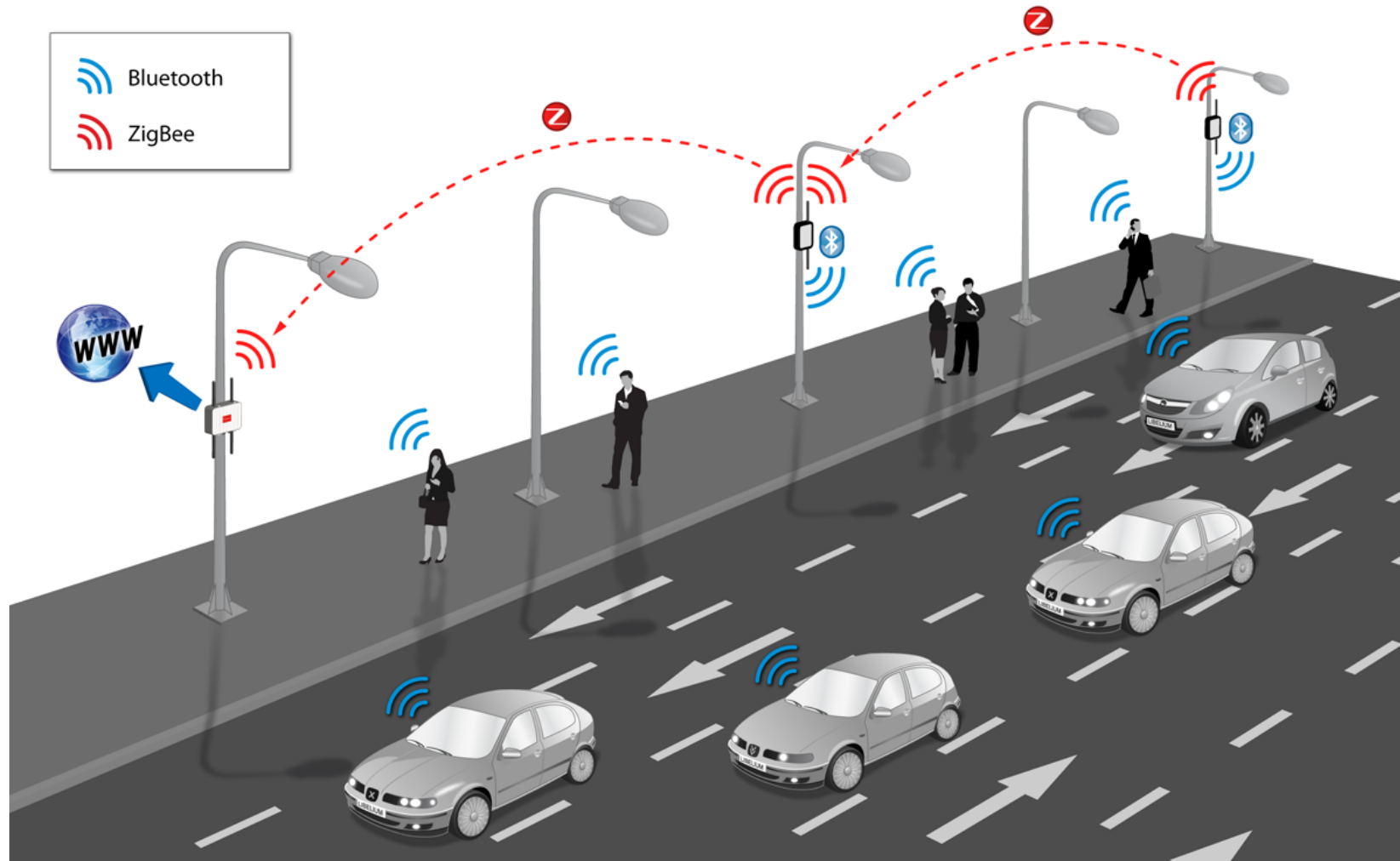
What is needed for mobility solutions to become "mainstream"?
Policy, Investment & Behaviour Change

Car sharing/public transport integration
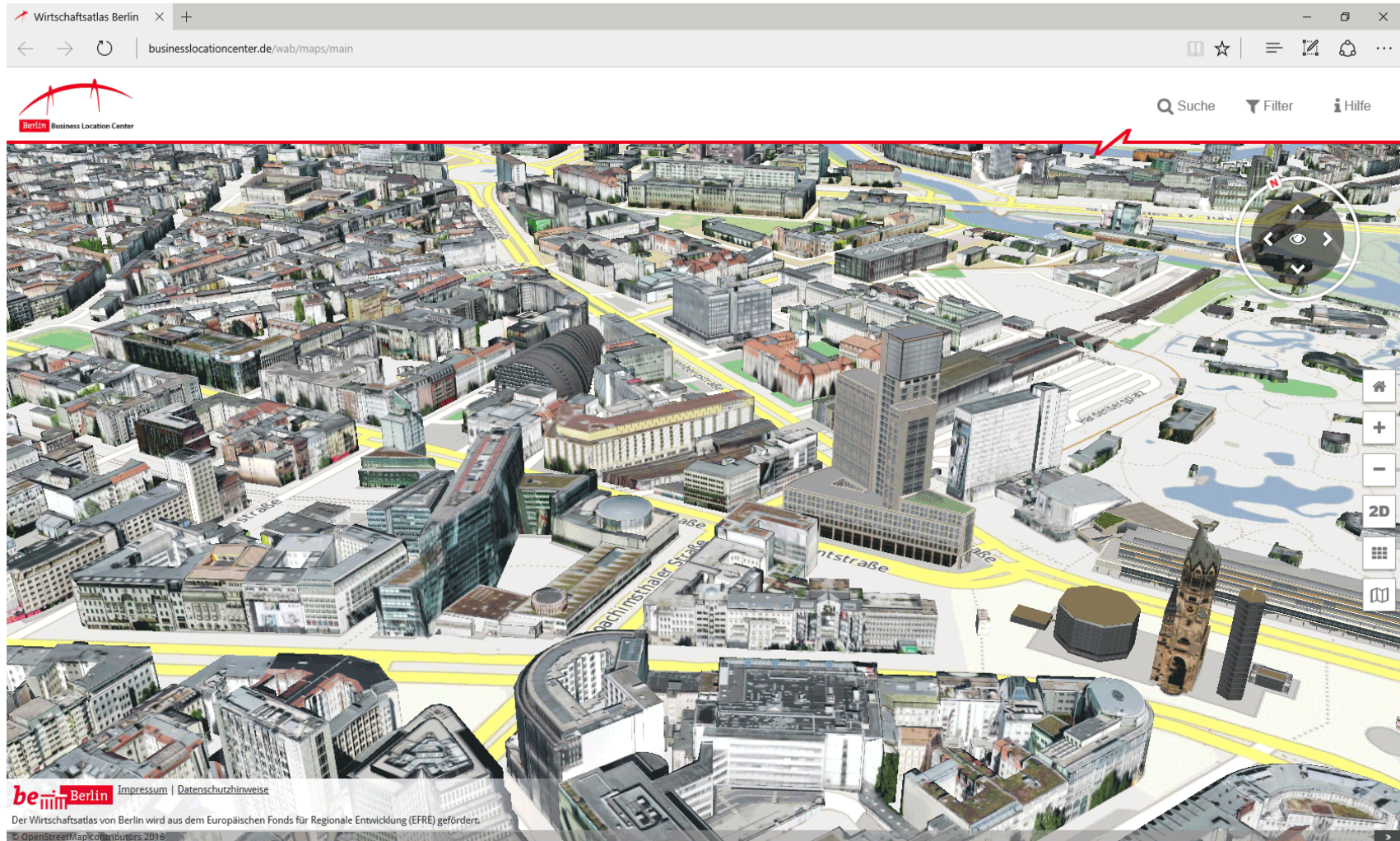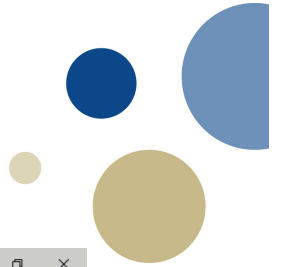

Uber Complements Public Transit

- Stations
- Uber Trips

This map shows trips from February that started or ended within a
quarter mile of a MAX or WES station outside of Portland. Actual trip
origins and destinations have been randomly jittered to protect rider
privacy. Additionally, actual trip routes have been replaced with routes

Senseable Trondheim

City Information Modeling

Trondheim Data Fjord