







Innovation, Technology and Real Estate: building cities for Europe's future

4 December, Brussels

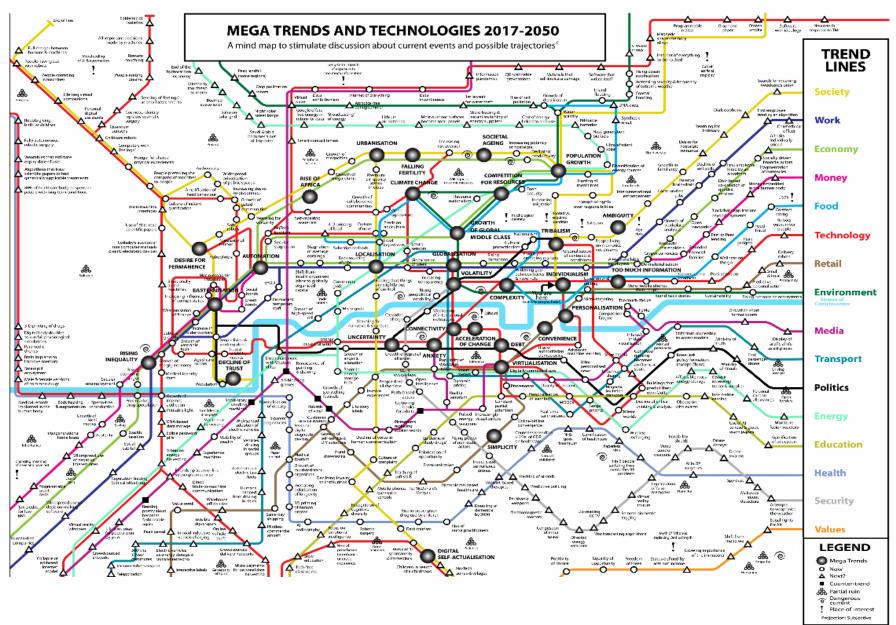


Innovation, Technology and Real Estate: Building Cities for Europe's Future

Vanessa Hale

4 December 2018



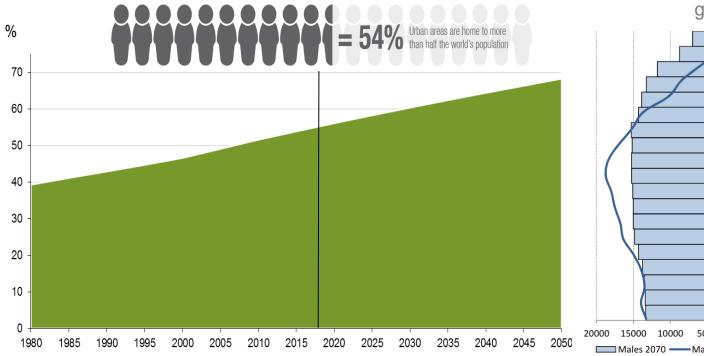




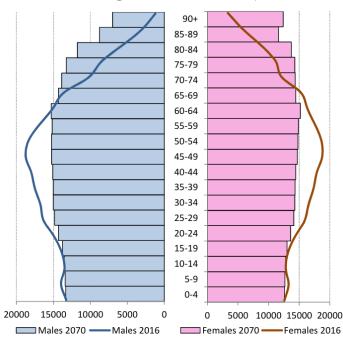


Population



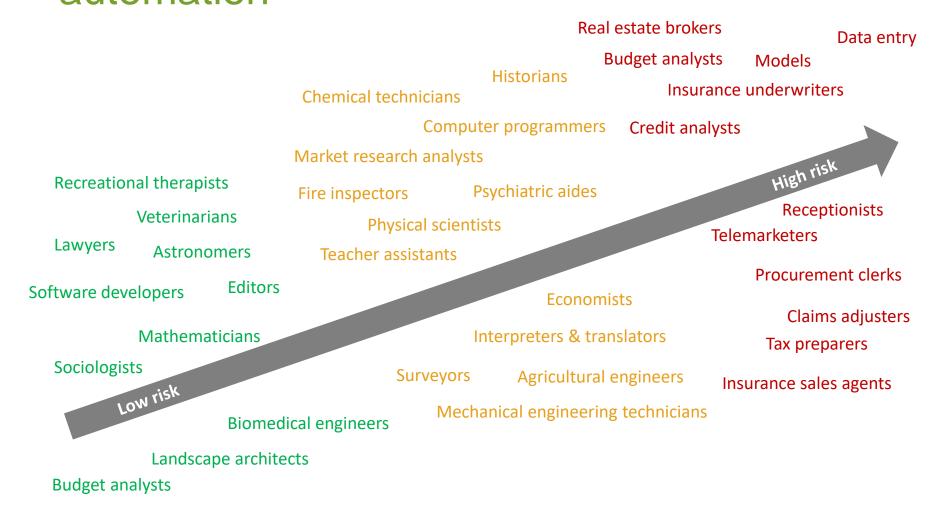


EU28 Population by age group and gender 2016-70 (thousands)





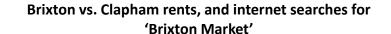
The new skills hierarchy: impact of automation

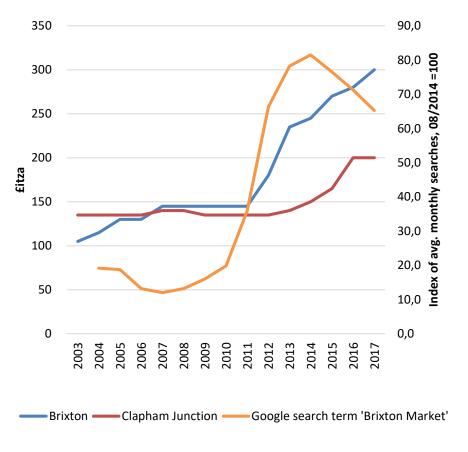


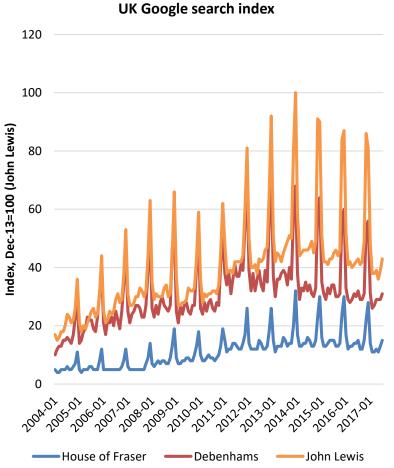




Changing the way we use data



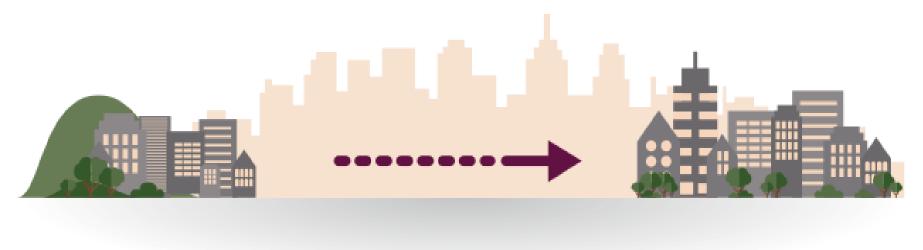








Re-urbanisation

















Demographics and lifestyle

Transport
+ safety
and education
Improvements

Changing Working practices

Sustainability concerns

Policy-driven and market incentives (e.g. trade)

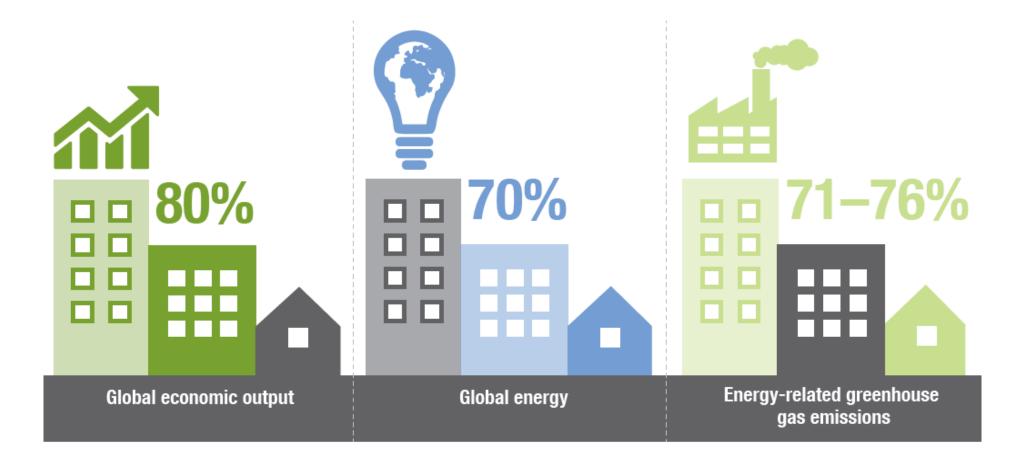
Technological advances

cal Opportunities to collaborate



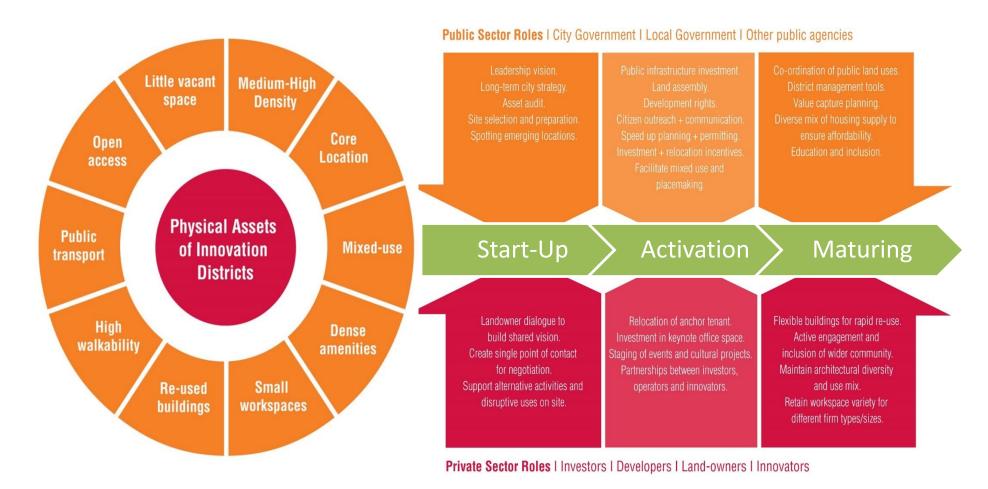


Cities





The roles to foster innovation ecosystems







The roles to foster innovation ecosystems



Governance framework	Competitive climate	Agglomeration	Attractiveness to talent
Vision, strategy, and coordination	Costs and business investment	Size and scale of internal market	Human capital, liveability, and opportunity
Land use, planning system, and density Infrastructure and services	Tax and regulatory framework Geopolitical risks	Clustered specialisations Institutional engagement	Innovation, technology, and enterprise Brand, identity, and destination





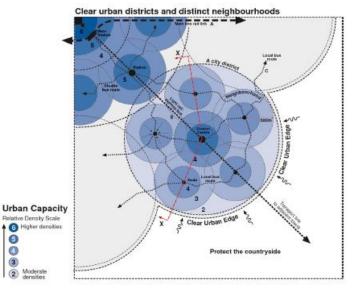
Density matters at all scales

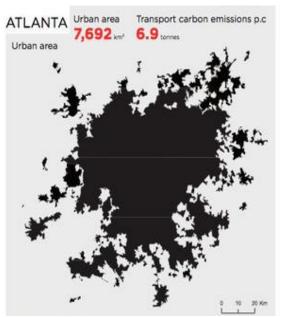
Moderate densities

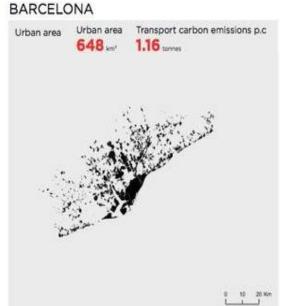
Sprawling City

A dispersed urban area - local centres are not well defined Countryside is being eroded

Compact City



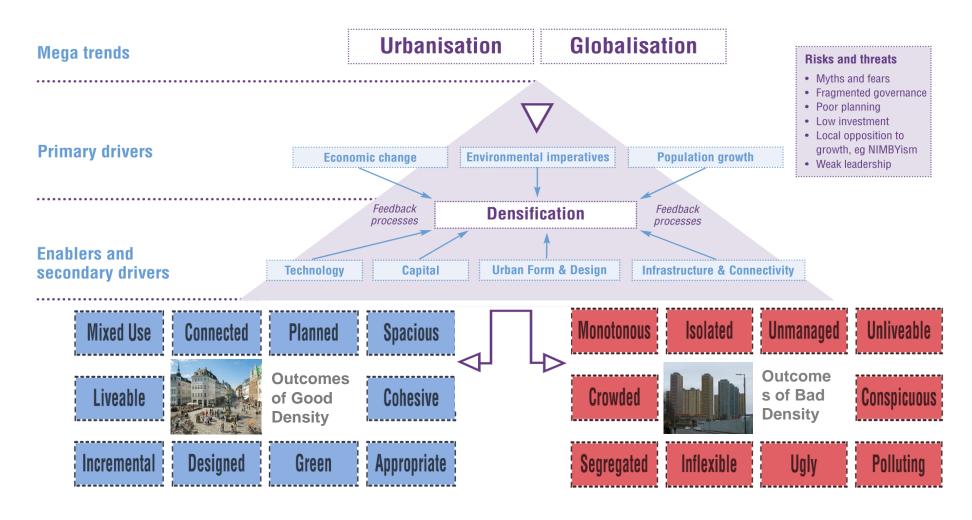








Good vs Bad: the importance of density







Good density characteristics



Clustering*

Public Transport





Economic/ Employment Green/Blue





Built

Governance

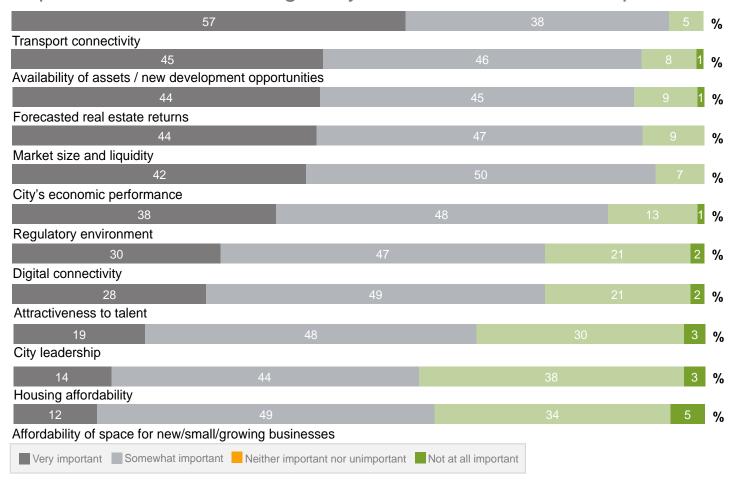






Cities are selected based on broad range of criteria

Importance when selecting a city for investment or development







Looking to the future...



Access to nature - new sign of success (no longer home ownership)

Dense and well

connected

Death of the queue

Ownership: **Accelerator** Model

Data collection +

predictive

analysis = better

owner tenant

relationship



community high tech (apps to provide service)

Flexible

Urban Logistics uses tube network



Alternative finance for underwriting investments

-> Advertising











STUDENT

HOTEL

Sustainable building materials

WeWork Farmers hubNspoke supply chain; drone neighbourhood delivery

Building Quality

(Wellness)



Skyscapers of

tomorrow &

MOT

Tenant/ Occupier: Employer/ **Employee Productivity & Data Privacy**





BOXPARK

Thank you







Smart Mobility in Smart Cities WALK. RIDE. DRIVE. FLY

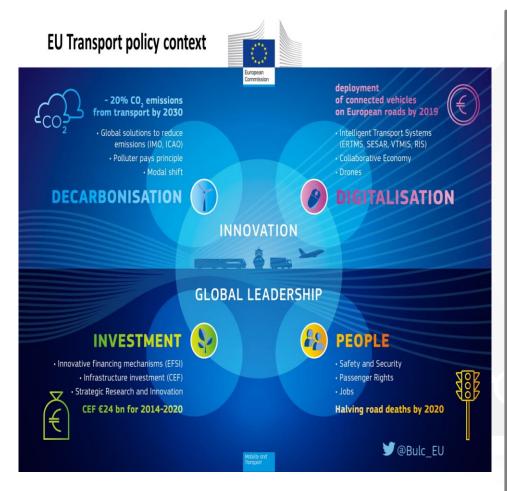
Dr Vassilis AGOURIDASUAM Initiative Leader

Innovation, Technology and Real Estate: building cities for Europe's future

Brussels, European Parliament
04th December 2018

Contact: vassilis.agouridas@airbus.com

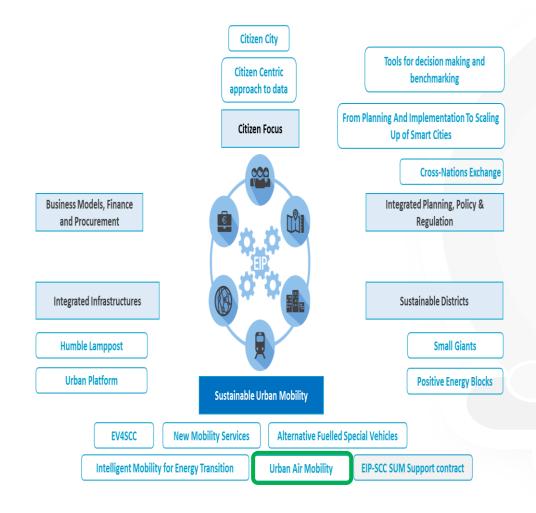
Background: EU Policy context of EIP-SCC





- ✓ Reminder: The EIP-SCC (European Innovation Partnership Smart Cities and Communities
 Set up by the European Commission, the EIP-SCC is a platform to accelerate innovation uptake by:
 - a) pushing for the set-up of demonstrator projects in European cities;
 - b) cooperate horizontally by breaking silos across main stakeholders (operators, infrastructure, cities, etc.) on such projects;
 - c) to address **public acceptance** and adoption;
 - d) share findings of studies across sectors and countries
 - e) facilitate access to EU funding

Background: EIP-SCC Action Clusters and the UAM Initiative



- ✓ The EIP-SCC Action Cluster

 Sustainable Urban Mobility

 brings together cities and regions

 with companies to show-case

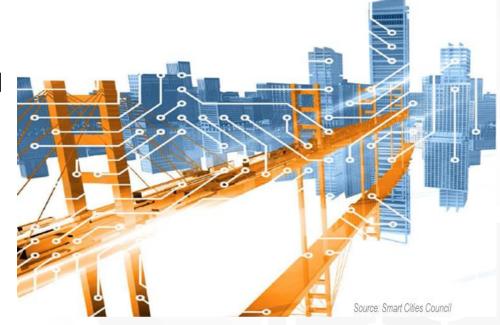
 innovative mobility solutions and

 support their replication at scale in

 key market segments.
- ✓ It aims to become the leading platform for understanding (and documenting) city needs, bringing stakeholders together, building the tools that support an innovation pipeline, and directly supporting individual networks and projects that are en-route to realisation.

Smart Cities are leading the transformation of mobility

Smart Mobility aims at reduced traffic congestion and CO₂ emissions from mobility.



Smart mobility is the application of **native digital applications**

(digital technology and business models) to improve the efficiency and effectiveness of transportation in smart cities.



Mobility Solutions in Smart Cities

The motto of the UAM Initiative:

Smart Mobility

in

Smart Cities:

WALK.

RIDE.

DRIVE.

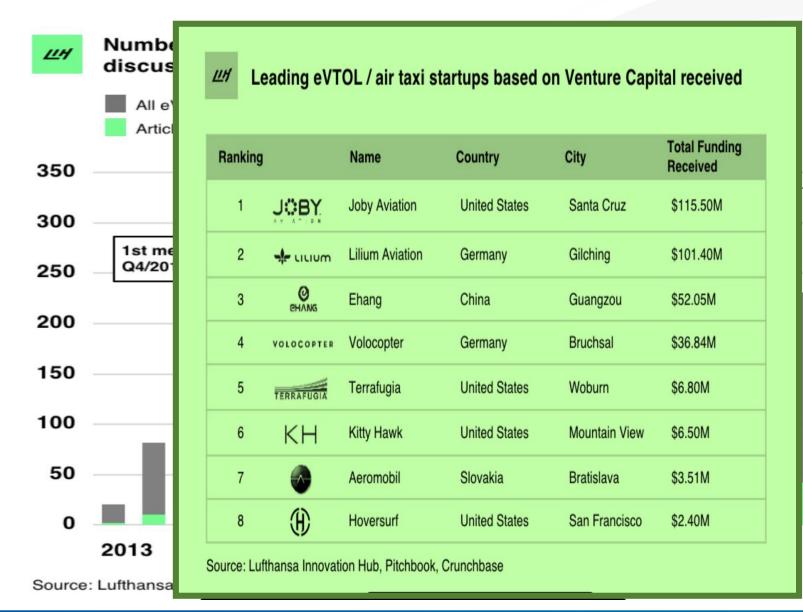
FLY.

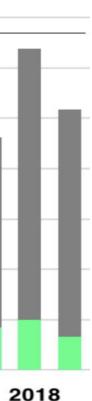




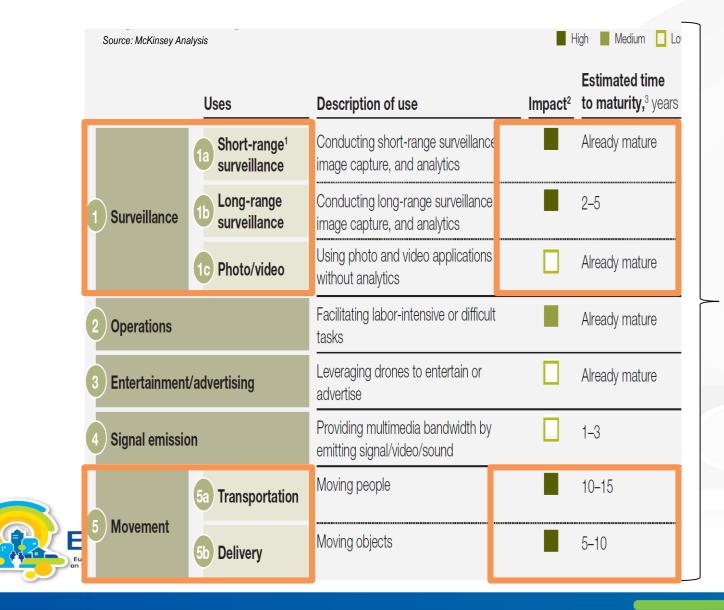
Typical multimodal mobility solutions in megacities do not consider air mobility

Ever-increasing 'drone-taxi' concepts worldwide





Drone system uses fall into five general categories



3 kinds of applications leveraging on drones & digitalisation:

- 1 Situational awareness
- descriptive -
- 2 Prognostics
- predictive analytics -
- 3 Real-time optimisation
- prescriptive -

Five factors influence drone services growth

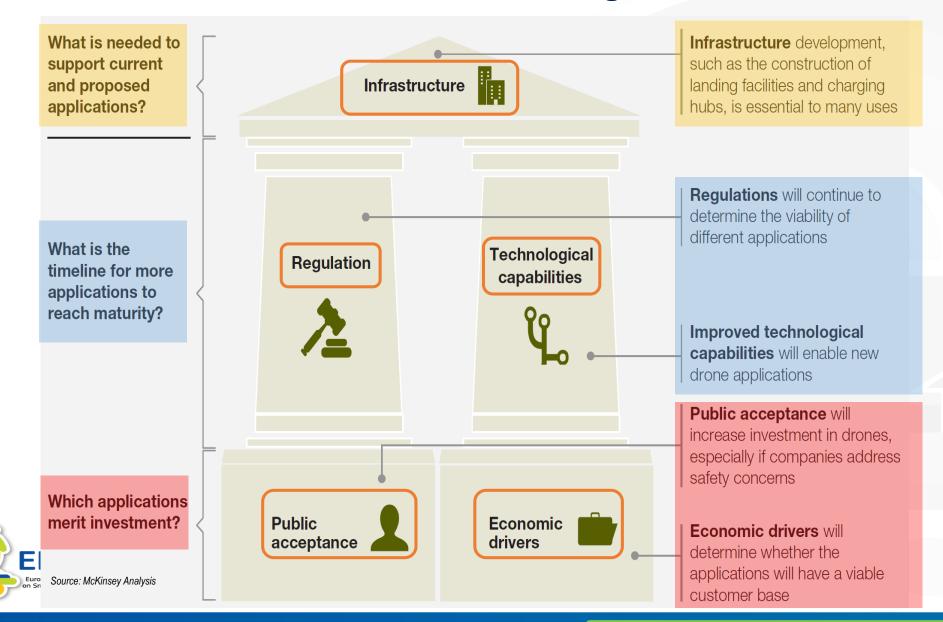


Illustration of an urban mobility ecosystem



Scope of the UAM Initiative







City-centric & Citizens-driven

Steering its activities on **smart mobility initiatives** <u>interfacing</u>,
or enabling UAM by addressing
topics around the following four
parallel thematic pillars:

- 1. UAM interfaces with public transport*
- 2. Mobility as a Service
- 3. Ground infrastructure for UAM (e.g. real estate stakes and initiatives to support UAM such as dedicated UAM landing pads and integration to multimodal networks hubs, electric charging infrastructure, inter-operable data (e.g. traffic) communications and V2V, V2I, V2x)
- **4. ATM/UTM concepts for UAM** in accordance with the U-Space framework



^{*} Or other interfaces: e.g. logistics platform, emergency services hubs, etc.

Cities and a wide spectrum of stakeholders

Cities are more than **customers** and **users** of UAM solutions; they are **partners**.

- ✓ Cities own and regulate transportation infrastructure
- ✓ Cities own and control traffic and transport data
- ✓ Smart cities have the digital infrastructure backbone for managing and sharing real-time traffic and transport data



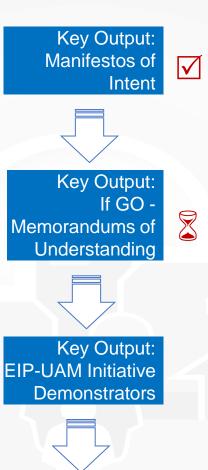


- ✓ integrated mobility solutions (e.g. ground + air)
- ✓ demonstrable benefits to citizens (e.g. time, comfort, value)
- ✓ socially & environmentally acceptable solutions (e.g. security, noise)

ROADMAP: phases

- Integrated Infrastructure Planning
- CitizensEngagement
- Raising Investments





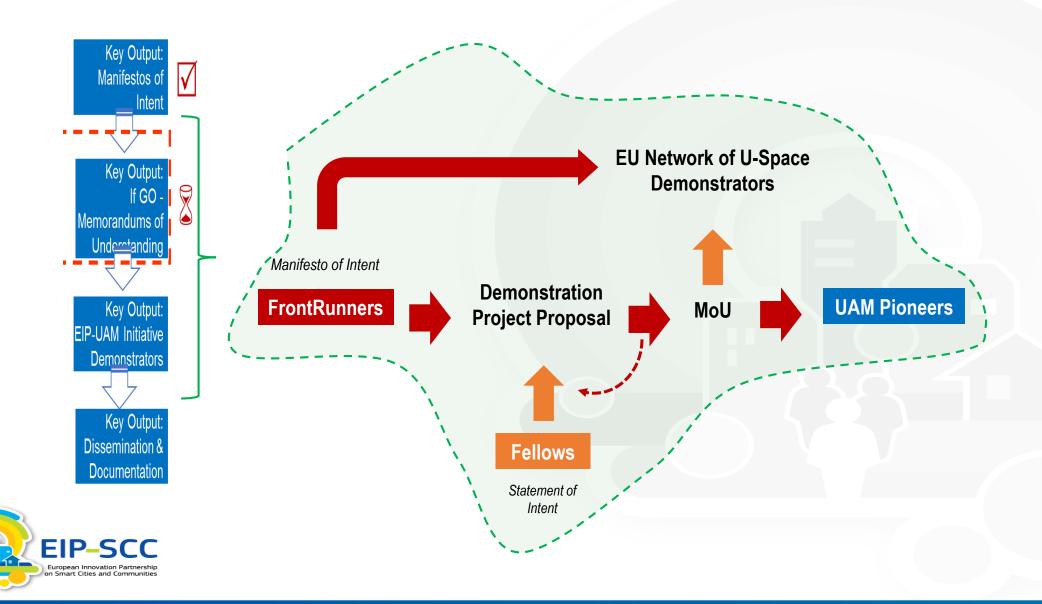
Key Output:

Dissemination &

Documentation



Key steps and evolution of membership & status



A total of 21 cities (as of 30 Nov. 2018)

EU Urban Air Mobility

FrontRunners [] 12 demonstrator projects(incl. 2 Cross-border) / 17 cities

Fellows [] Madrid (SP), Oxfordshire County (UK), County Durham (UK)

(as of 12th Nov. 2018)

Amsterdam (NL), 28 Nov.

More than 500 diverse stakeholders mobilised across **Europe** to work on bringing **urban** mobility to the 3rd dimension!









UIC² **U**AM Initiative **Cities Community**

The 2018 FrontRunner & Fellow Cities / Regions and Ambassadors

JOIN US to...



Innovate & **Invest in**

UIC²

UAM Initiative Cities Community



Amsterdam MAHHL Cities (Maastricht-Aachen-Hasselt-Heerlen-Liege)

Ingolstadt

Madrid

Toulouse Metropole

Region Northern Hesse (incl. Bad Hersfeld)







Smart Mobility in Smart Cities: WALK. RIDE. DRIVE. FLY.









KEEP YOUR CITY MOVING

Wouter de Bruijne, December 2018

ParkBee

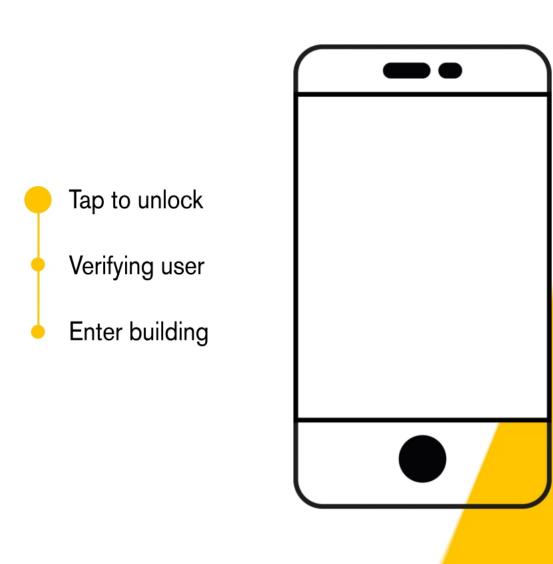
OUR CITIES ARE GETTING FULL



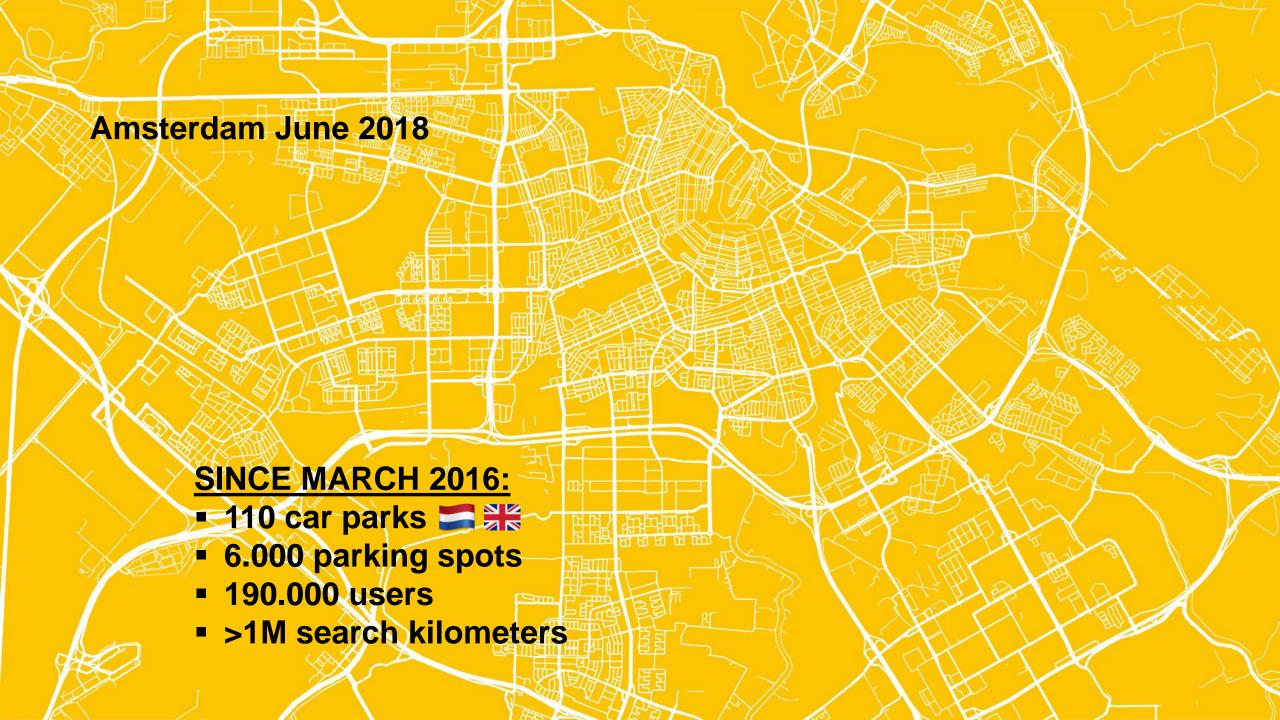


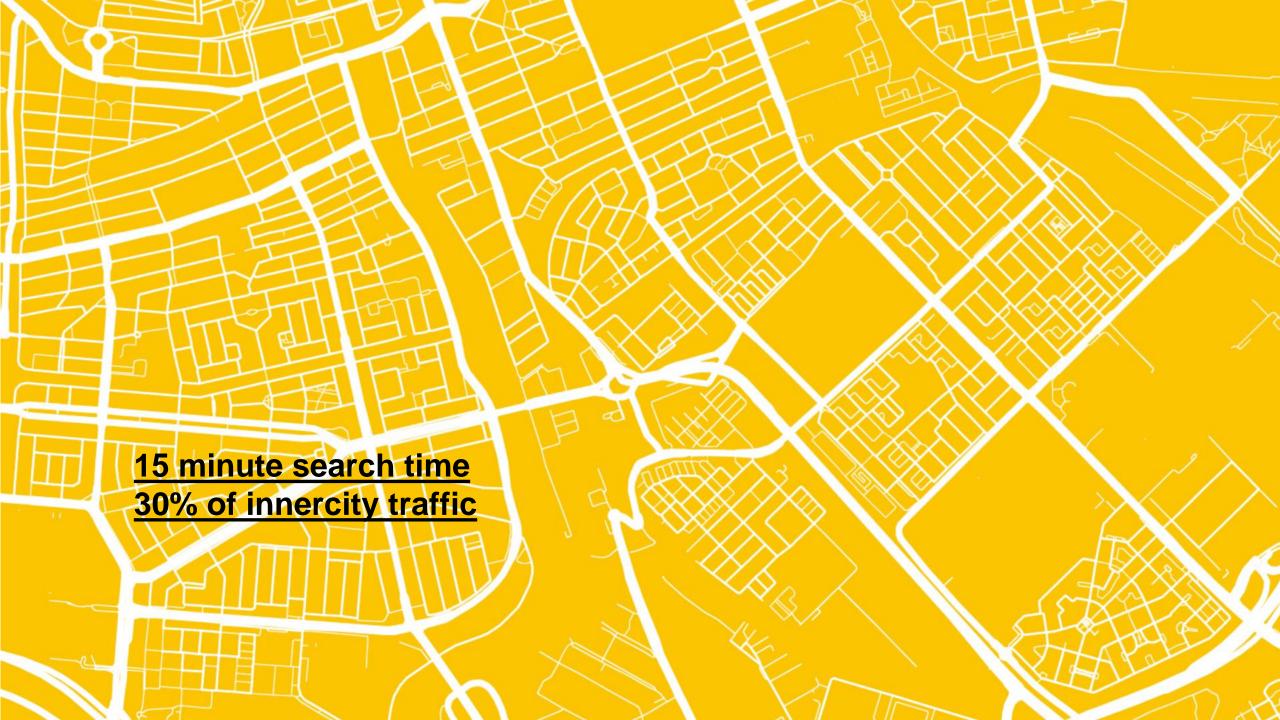


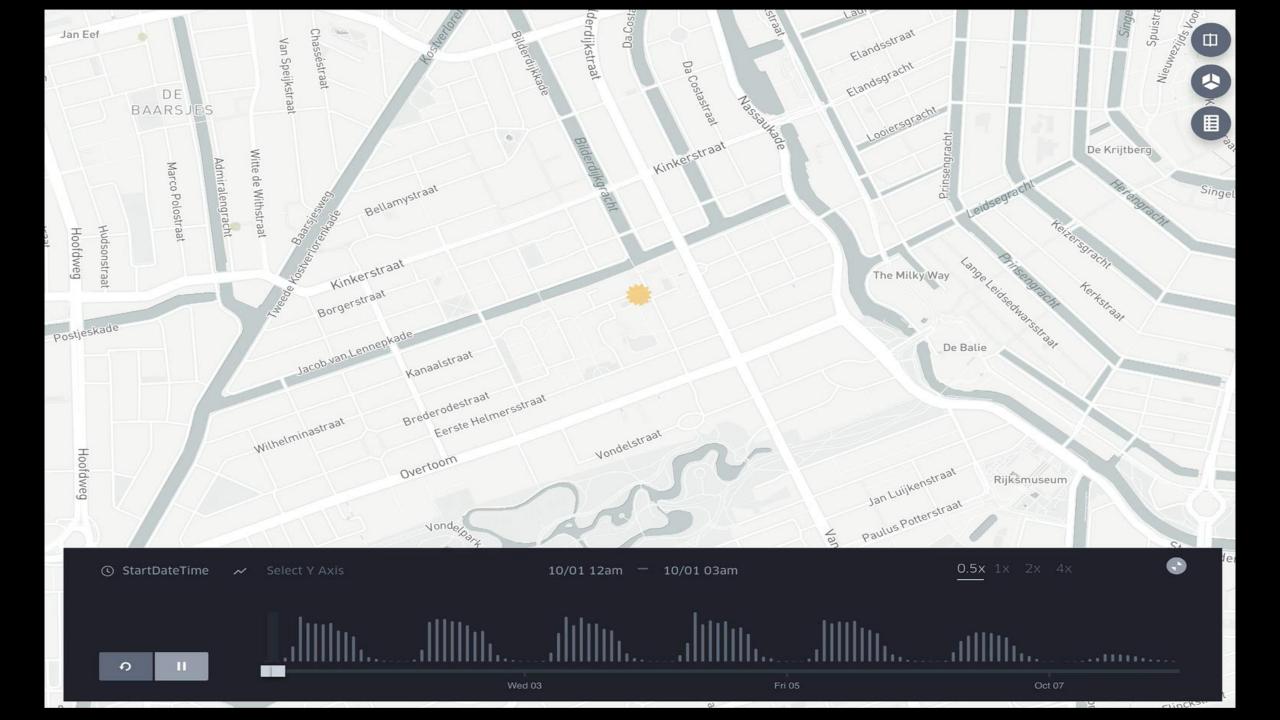


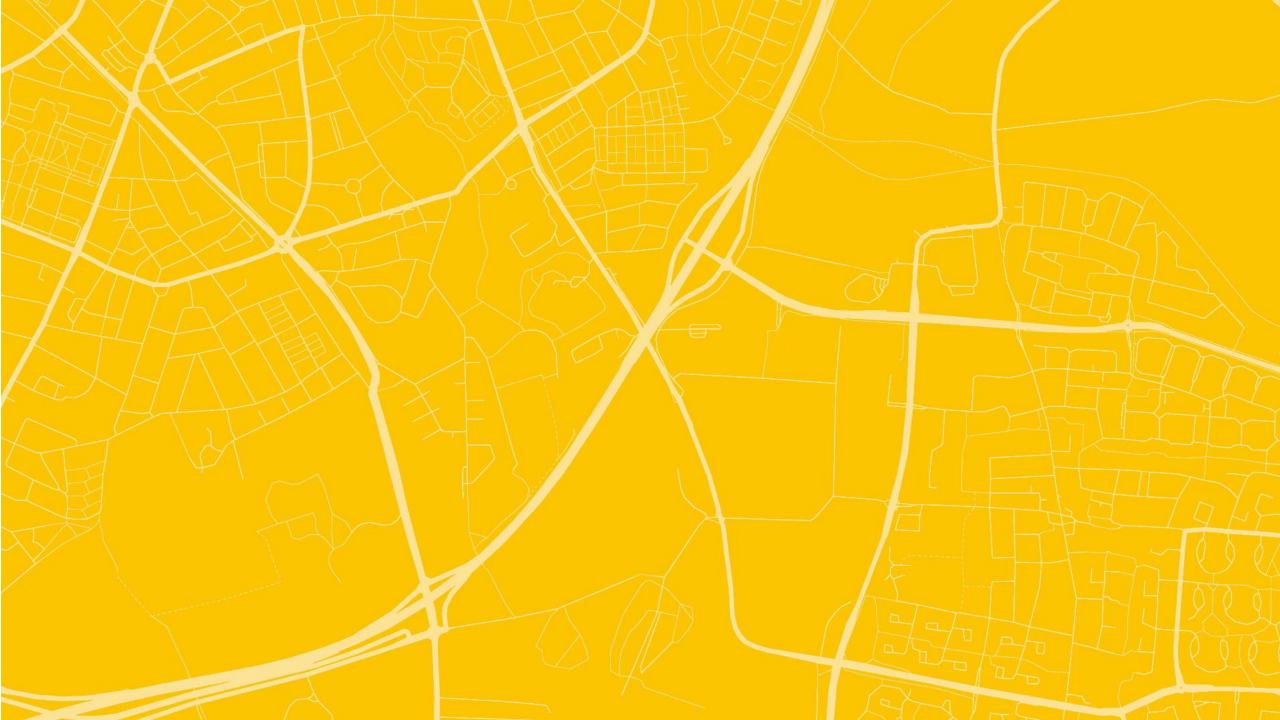










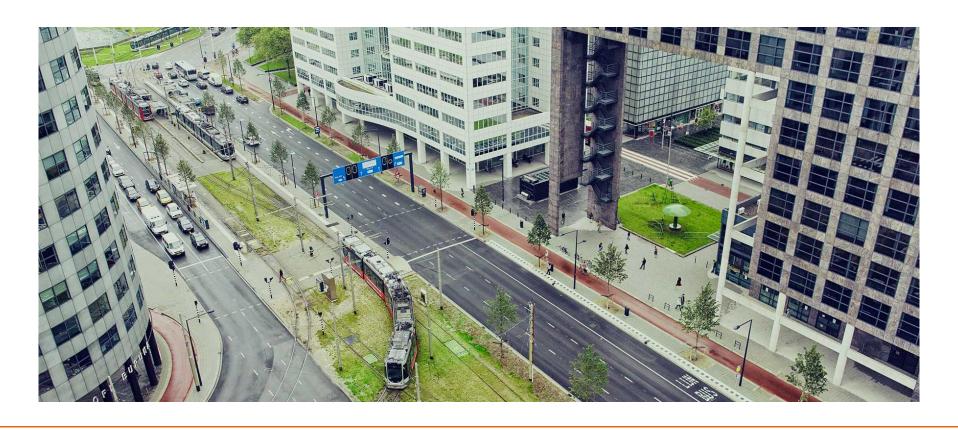






NN Group

Investor in Europe's built environment





Leading Dutch insurer with strong businesses in European insurance, asset management and Japan

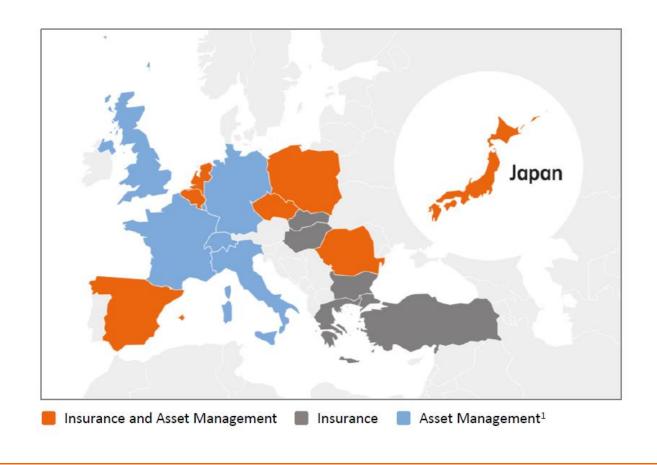
Some facts and figures

- History dating back to 1845
- Strong business positions
- Active in 18 countries
- Unified international culture with shared best practices
- Approx. 17 million customers
- Successful IPO on Euronext Amsterdam on 2 July 2014
- Acquisition of Delta Lloyd completed in April 2017
- Shareholders' equity of EUR 23.0bn at 30 September 2018
- Credit ratings¹: A/stable (S&P), A+/stable (Fitch)





NN has a large international footprint and invests globally, with a focus on Europe





Real estate investment portfolio

- Real estate has an important role in our investment portfolio: NN invests roughly € 7.5bn in European real estate
- Of this, a third is invested in residential real estate: roughly 15.000 houses in The Netherlands, Spain, Belgium and the UK. 30% of this is social housing
- We invest in senior housing and healthcare like nursing homes, medical care centers
- And provide accomodation to more than 7000 students in the Netherlands, Germany, France, Spain and Denmark
- Furthermore, we invest in shopping centers, high street shops, office buildings, hotels, logistics (distribution centers, 'last mile' e-commerce facilities)
- And put effort in enhancing the ESG performance of the portfolio, like installing 70.000 m2 of solar panels on our logistic buildings in NL and BEL the equivalent of almost 10 Champions' League football fields



... but the strong link to the European society is not only about real estate

- Total investments of the NN Group are EUR 156bn
- Of which a large amount is invested in European government and corporate bonds
- NN provides mortgages to many Dutch and Belgian households
- Many European commercial real estate owners
- Finances infrastructure projects like onshore and offshore wind parks, solar parks, roads, tunnels, power distribution, water and waste facilities
- Invests in small and medium sized enterprises throughout Europe, including in pollution control and resource efficiency, through our private equity and private corporate loan portfolios,

Strong, sustainable and vital cities are of crucial importance to us as a long term investor in Europe!



