Path to more targeted investment in smart cities and communities

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CONFERENCE 2019

Insights from the EIP-SCC network

17 January 2019 | Dr Marcel van Oosterhout (Erasmus University Rotterdam), Graham Colclough (Urban DNA)

EIP-SCC Lighthouses present a worldwide potential force for betterment

An ambitious set of demonstrator programmes seeking to _speed_ and _scale_ the European market

~100 Cities involved to demonstrate smart cities solutions

€500 million EU stimulus investment
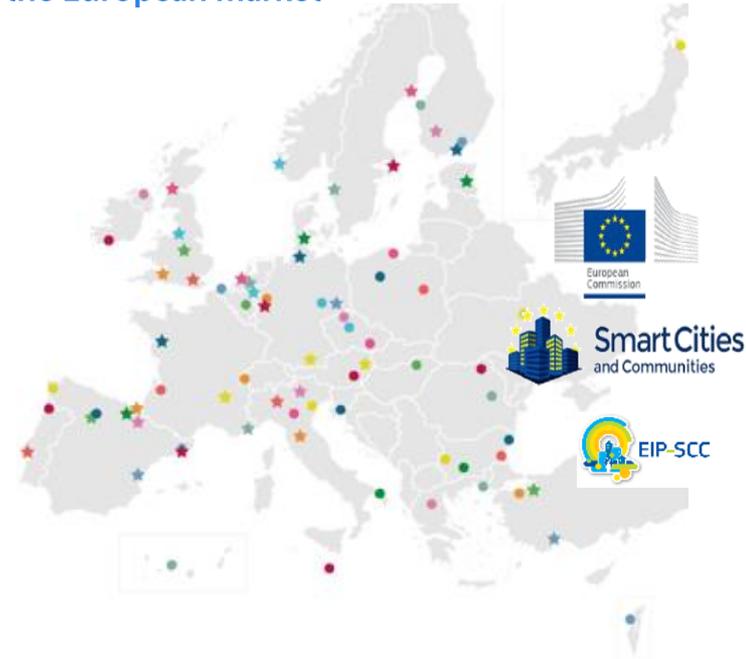
>€500 million Cities co-investment

14 Programmes

1 common 'smart' agenda

4 agreed initial priority solutions for collaboration:

Urban Data Platforms; Social Housing; eBikes; Smart Lampposts

Clear opportunities to exploit and deliver synergies in EU & beyond – however important steps to take to make that so

The market focus is shifting towards stimulating investment

Investors are diverse in type, however nervous, seeing cities as *"too small, too slow, and too risky"*

"Towards a Joint Investment Programme for European Smart Cities" white paper – seeking to stimulate action!

EIP-SCC

Marketplace of the European Innovation Partnership
On Smart Cities and Communities

TOWARDS A JOINT INVESTMENT PROGRAMME FOR EUROPEAN (SMART) CITIES

A Consultation Paper to Stimulate Action

1. Market Context to align stakeholders

2. Emerging Roadmap - 21 specific actions
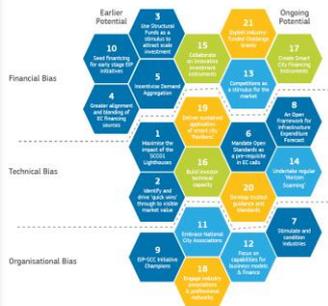
A EC-LED ACTIONS
1. Maximise the impact of the SCC01 Lighthouses
2. Identify and drive 'quick wins' through to visible market value
3. Use Structural Funds as a stimulus to attract further scale investment
4. Deliver greater alignment of EC financing sources
5. Incentivise demand aggregation
6. Mandate Open Standards as a pre-requisite in EC calls
7. Stimulate and condition industries
8. Co-create an Open Framework for Urban Infrastructure Expenditure Forecast
9. Introduce EIP-SCC Initiative Champions
10. Support Seed Financing of Select EIP-SCC Initiatives

B OTHER PUBLIC / MEMBER STATE-LED ACTIONS
11. Embrace National City Associations
12. Focus on capabilities for business models & finance
13. Use competitions as a stimulus for the market
14. Undertake regular 'horizon scanning'

C INVESTOR-LED ACTIONS
15. Collaborate on innovative investment instruments
16. Build investor technical capacity
17. Create Smart City Financing Instruments

D MARKET-LED ACTIONS
18. Engage industry associations and professional networks
19. Deliver sustained application of smart city "Pavilions"
20. Develop trusted guidance and standards
21. Exploit industry-funded challenge grants

- **Deep collaboration required**
- **Clear role for SCC01s**
- **Open standards & guides**
- **New Financial Instruments**
- **Blending of funds**

The Lighthouse community has the opportunity to exploit the SCC01 cities' commitments; deliver scale; embrace open standards; evidence improvements; and <u>build investor confidence</u>

Helping cities make faster decisions is critical
The smart cities market has some recognized challenges

RSM *Erasmus*

Slow decisions

- On average a public sector organisation takes ~4.5yrs to move from idea to action
- Silo complexities inhibit collaboration
- Individual approaches engender caution
- Public value is just complex!

Modest scale

- A general market of bespoke city-specific solutions
- A penchant for pilots
- ~300 SCC01 small-scale, city-specific solution demonstrators
- Different approaches and methods in SCC01s make collaboration hard
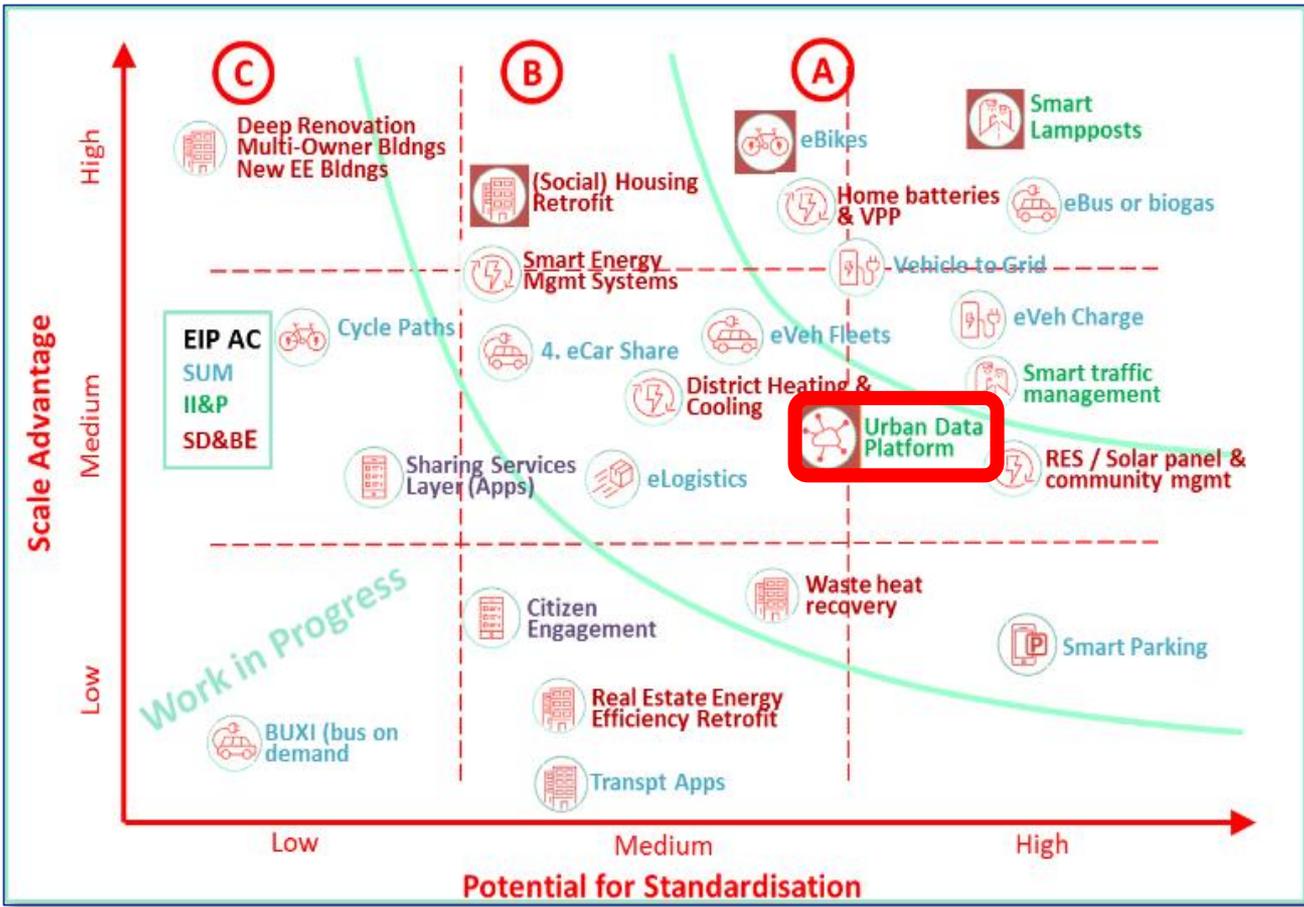
Fragmented Content

- SCC01s in particular will deliver >500 deliverables in general about ~20 similar solutions – how to make sense of all that?
- Fellow cities claim these documents are not helpful to stimulate action
- Fragmented, and questionable quality, inventory of guidance out in the market – how to build trust?
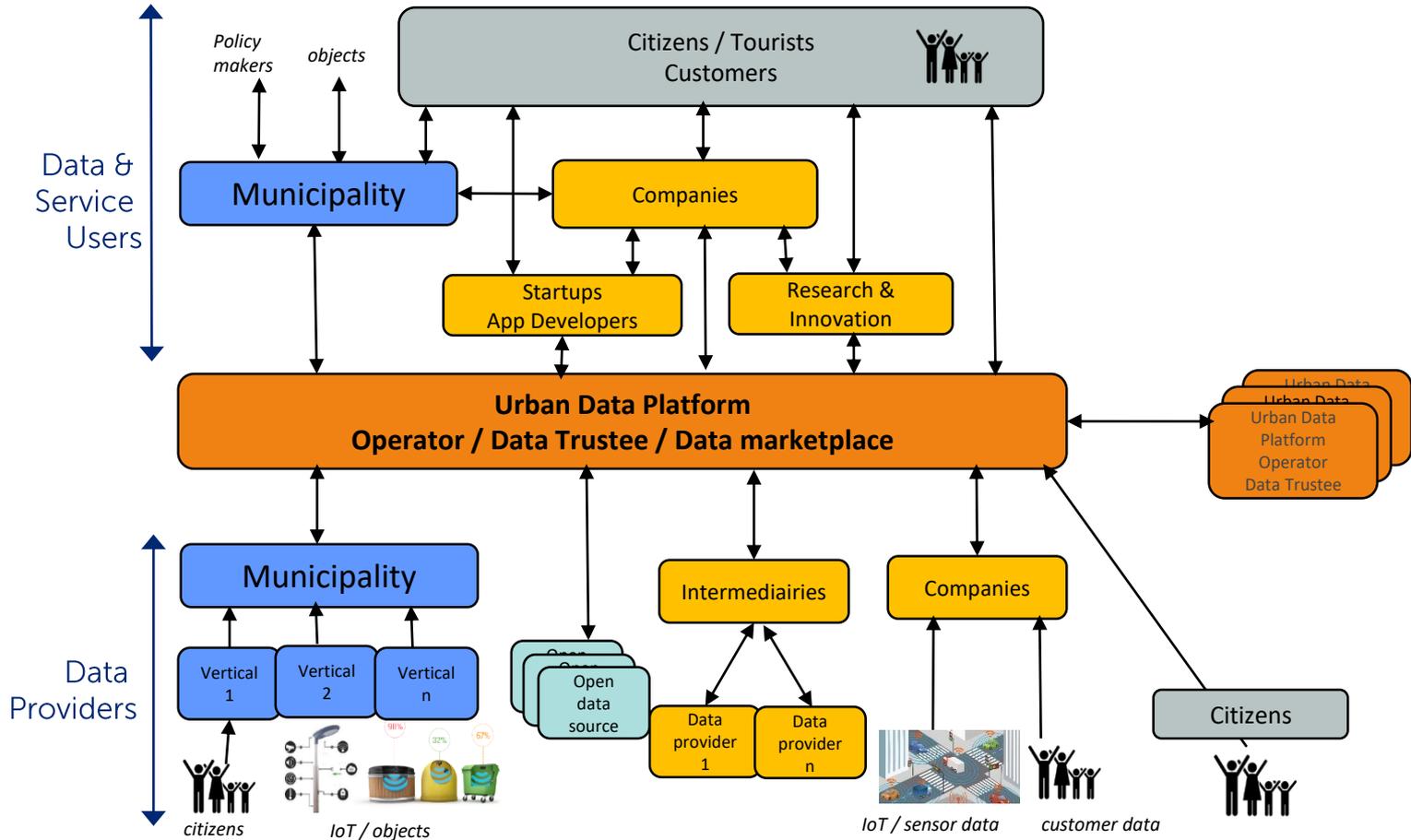
Issues / Needs Analysis	Ideas / Concepts	Outline Value Case	Market Analysis / Testing	Outline Design / Biz Case	Design & Spec	Procure / Commiss	Implement / Roll-out	Operation Improve't

Pilot

6 mos – 3 yrs   9 mos – 2 yrs   6mos –2yrs   5-50 yrs

There is a gap between our scale ambition and the current market & SCC01 programme realities What can be done to speed the process?

Where to start?
The portfolio of Smart City 'Lighthouse' Programmes point us towards a set of use cases and solutions to tackle first
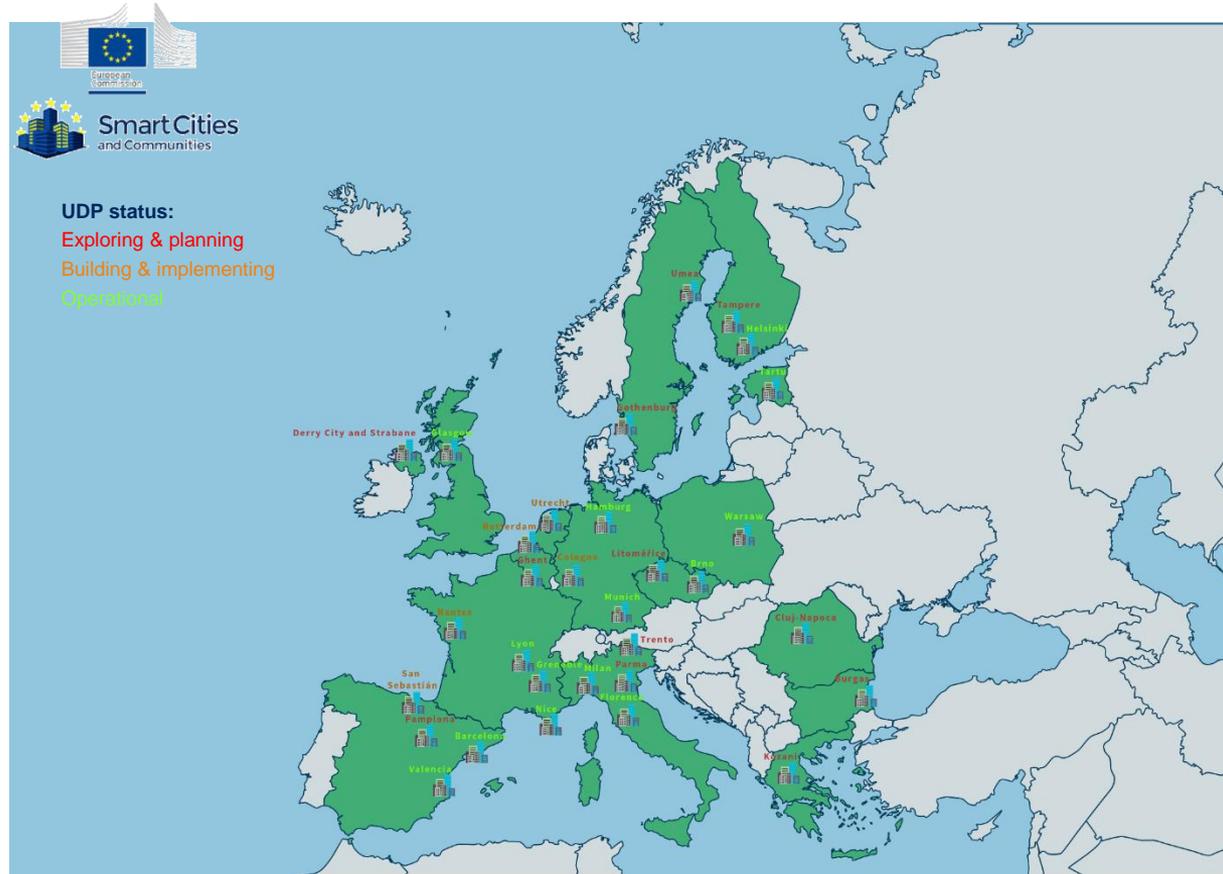
RSM *Erasmus*

A two-by-two matrix chart titled with axes:
- Y-axis: **Scale Advantage** (Low, Medium, High)
- X-axis: **Potential for Standardisation** (Low, Medium, High)

Zones labelled C, B, A across the top.

Plotted items:
- Deep Renovation Multi-Owner Bldngs New EE Bldngs
- eBikes
- Smart Lampposts
- (Social) Housing Retrofit
- Home batteries & VPP
- eBus or biogas
- Smart Energy Mgmt Systems
- Vehicle-to-Grid
- Cycle Paths
- 4. eCar Share
- eVeh Fleets
- eVeh Charge
- EIP AC / SUM / II&P / SD&BE
- District Heating & Cooling
- Smart traffic management
- Sharing Services Layer (Apps)
- eLogistics
- Urban Data Platform
- RES / Solar panel & community mgmt
- Citizen Engagement
- Waste heat recovery
- Smart Parking
- BUXI (bus on demand)
- Real Estate Energy Efficiency Retrofit
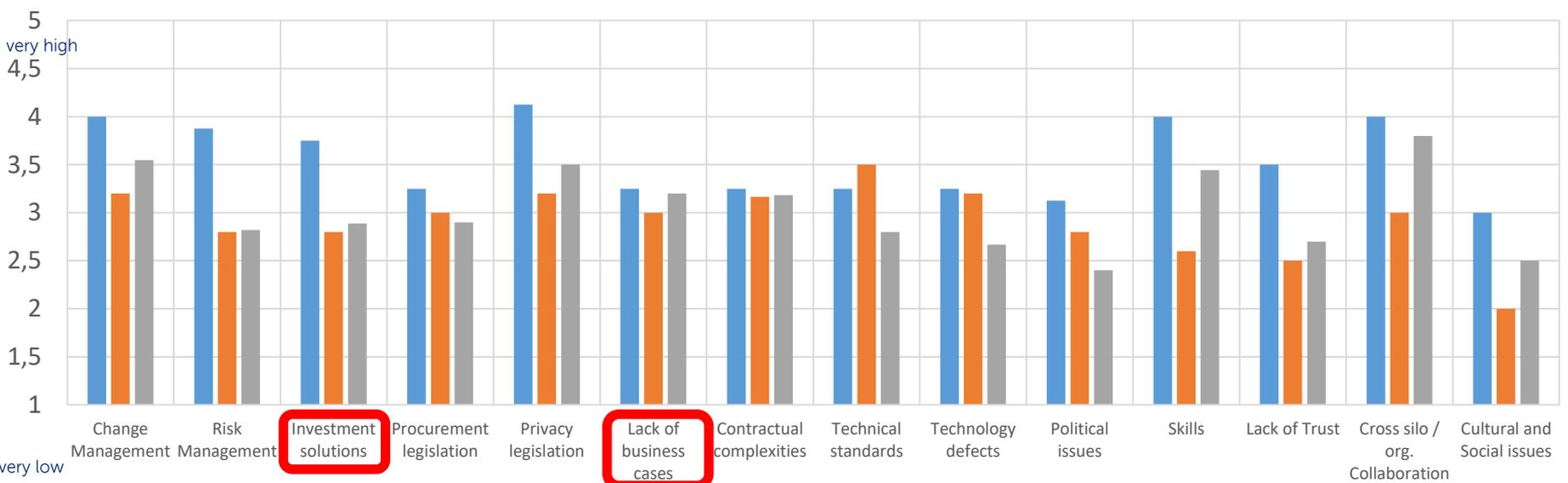- Transpt Apps
- Work in Progress

Stage of development of Urban Data Platforms in Europe

1. **More cities** (compared with EIP 2015 survey), **have adopted (vision to develop) an UDP, but it is still early days**

2. **Most of UDPs are still under development, some use cases operational**

3. **Most UDPs are focused on use cases to make city more efficient** (linked to EU SCC project objectives)

4. **Few examples yet of commercial business models enabled by the UDP**

Source: RSM (2018) Study on Urban Data Platforms in Europe

UDP implementation barriers & risk importance (per development phase)

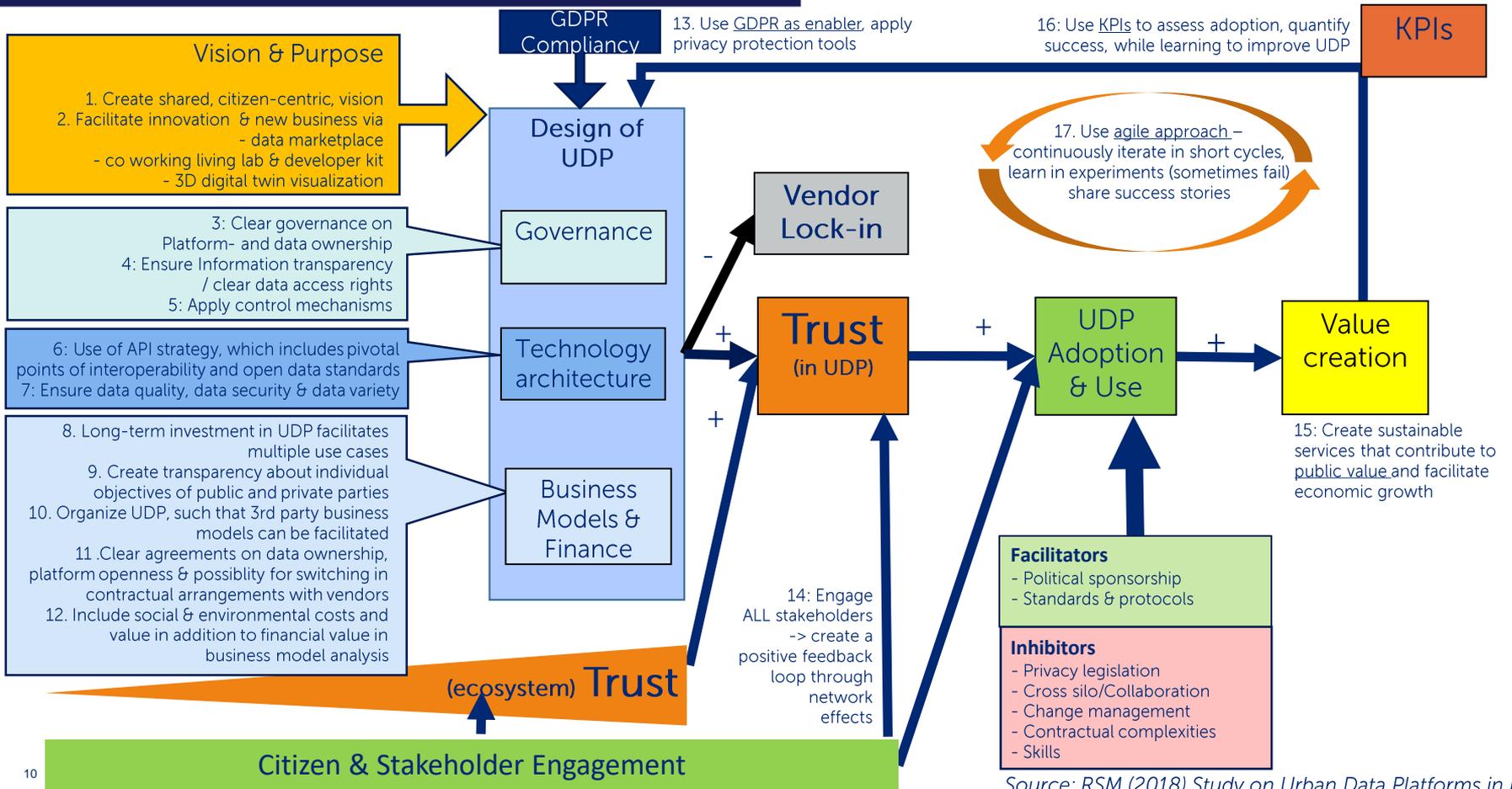*Source: RSM (2018) Study on Urban Data Platforms in Europe*

Investments in Urban Data Platforms

1. Investment in UDPs should be viewed as a policy decision – a means to integrate data for better service delivery across a city and enabler for different use cases [rather than ROI investment of itself]

2. Decent ROI is possible by linking together a platform with a few services as a package of work, and a proof point of value.

3. This requires that there is a commitment and sensible pathway to pull in other infra/services and other stakeholders onto the platform over time to maximise benefits.

Use cases of UDP

Analytical sophistication and use of 3D

■ 3D visualization ■ prescriptive ■ predictive ■ diagnostic ■ descriptive

Source: RSM (2018) Study on Urban Data Platforms in Europe
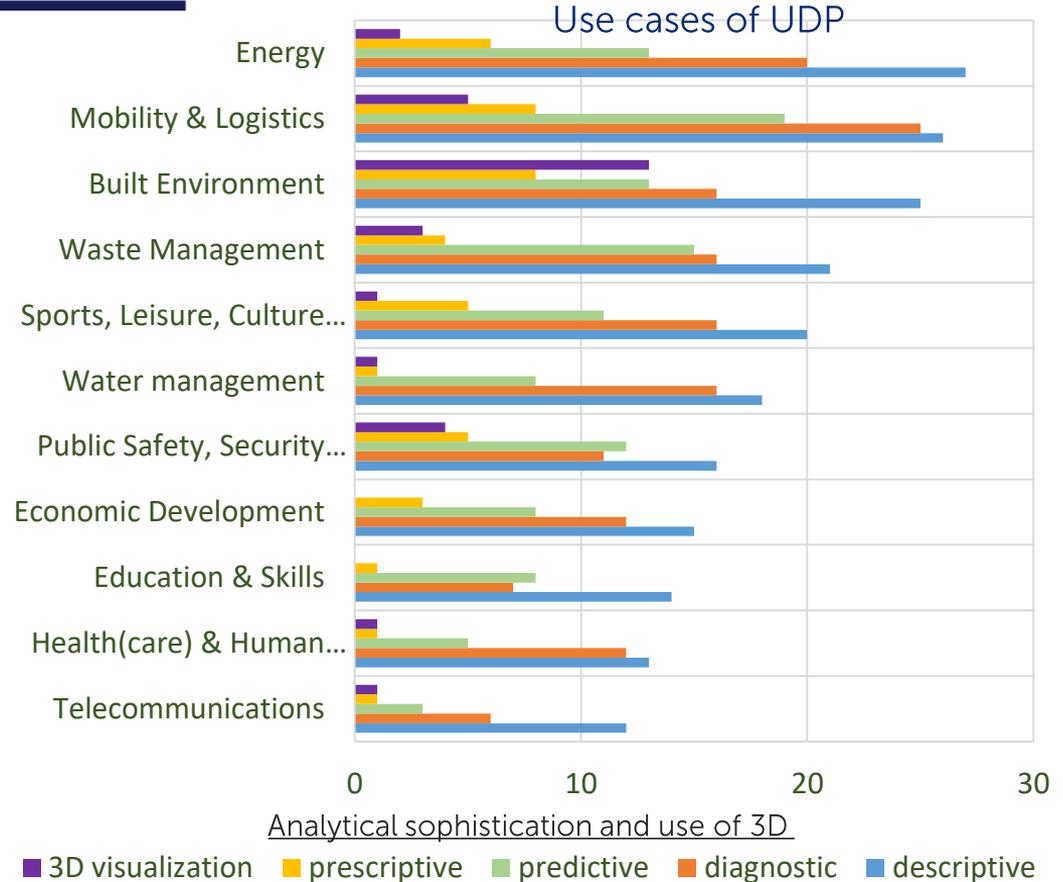
Urban Data Platforms route towards value

Source: RSM (2018) Study on Urban Data Platforms in Europe

City perspective on de-risking investment in UDPs
Recommendations

1. Develop **clear set of business use cases** to justify modest (€1-1.5million) 'enabling investment' in UDPs

2. **Link UDP investment (as horizontal enabler) to several domain specific challenges** (vertical business cases), such as urban mobility and smart lighting. This requires a **city-wide perspective** on the basis functionality of urban data platforms

3. Create a **continous learning process** to minimize risks and learn from failures, share success stories

4. Create **trust** (among all stakeholders involved)

5. Develop **clear governance on platform- and data** ownership, access rights, rules & regulations

6. Make clear agreements with vendors to **avoid vendor lock-in**

7. Increase value of the platform - platform value includes social and environmental value in addition to financial value - by ensuring its **openness** to third parties (data suppliers, developers, research & innovation, other UDPs)   -> apply pivotal points of interoperability and use open data standards

8. Develop commitment and pathway to **pull in other vertical sector infra/services and other stakeholders onto the UDP over time** to maximise benefits

Linking the UDP to sectoral infra investment areas
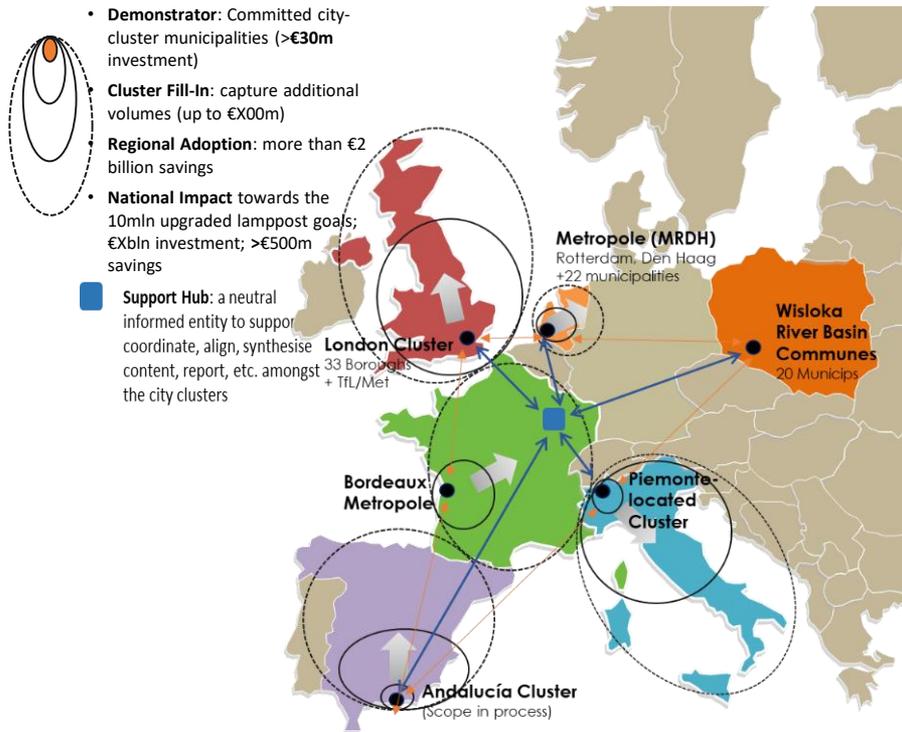## The *Trans-EU Humble Lamppost initiative*

Again, all presently investment in the belief that we are doing the right thing

- **Six 'city-clusters'** committed to collaborate to scale the smart lamppost

- Common design; **packaged** approach ('what'); potential joint procurements

- Staged **coordinated readiness** of city clusters, with a templated approach for efficiency ('tools')

- **City-needs-led** and **demand-driven**

- Combined **SCC01 & EIP-SCC** actors

- Aligned with EIP-SCC ambition to **upgrade 10 million lampposts across EU cities**

- Between **400k-1 million** addressable lampposts

Scale-Up Market Potential:

- **Demonstrator**: Committed city-cluster municipalities (>**€30m** investment)

- **Cluster Fill-In**: capture additional volumes (up to €X00m)

- **Regional Adoption**: more than €2 billion savings

- **National Impact** towards the 10mln upgraded lamppost goals; €Xbln investment; >€500m savings

- **Support Hub**: a neutral informed entity to suppor coordinate, align, synthesise content, report, etc. amongst the city clusters

Metropole (MRDH) Rotterdam, Den Haag +22 municipalities

Wisloka River Basin Communes 20 Municips

London Cluster 33 Boroughs + TfL/Met

Bordeaux Metropole

Piemonte-located Cluster

Andalucía Cluster (Scope in process)

A very real proof point for a collaborative packaged approach to scale the market – 3 years of persistence; we must stimulate the process to deliver what the market deserves!

EU perspective on de-risking investment in UDPs / smart cities
Recommendations

1. Create a learning process among the network of EIP SCCs

2. Work on agreed standards

3. Develop a collaborative city needs led approach to engage with the investor community on targeted use cases and solutions (that have scale advantage and can be packaged)

4. Launch smart city funds

40 hand-picked collaborators from Lighthouse programmes and smart city investors to shape a pathway forward for scale investment

important step to investment confidence
Next edition in March/April 2019

References & Contact

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Partner in EU SCC SHARINGCITIES project http://www.sharingcities.eu/

Other References
EIP-SCC: https://eu-smartcities.eu/
SCC projects overview: https://eu-smartcities.eu/projects