

# Rotterdam Citiverse & Open Urban Platform

A digital ecosystem needs an interoperable digital infrastructure

Geospatial World Forum 2026

Amsterdam, April 30th 2026

Municipality of Rotterdam  
Roland van der Heijden

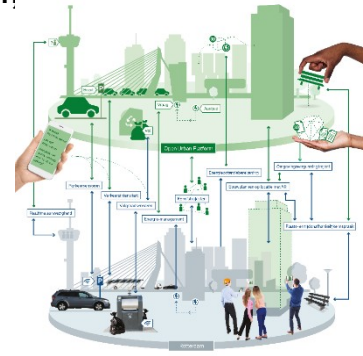
Chief City Officer

# Digital City Rotterdam: 3 main questions

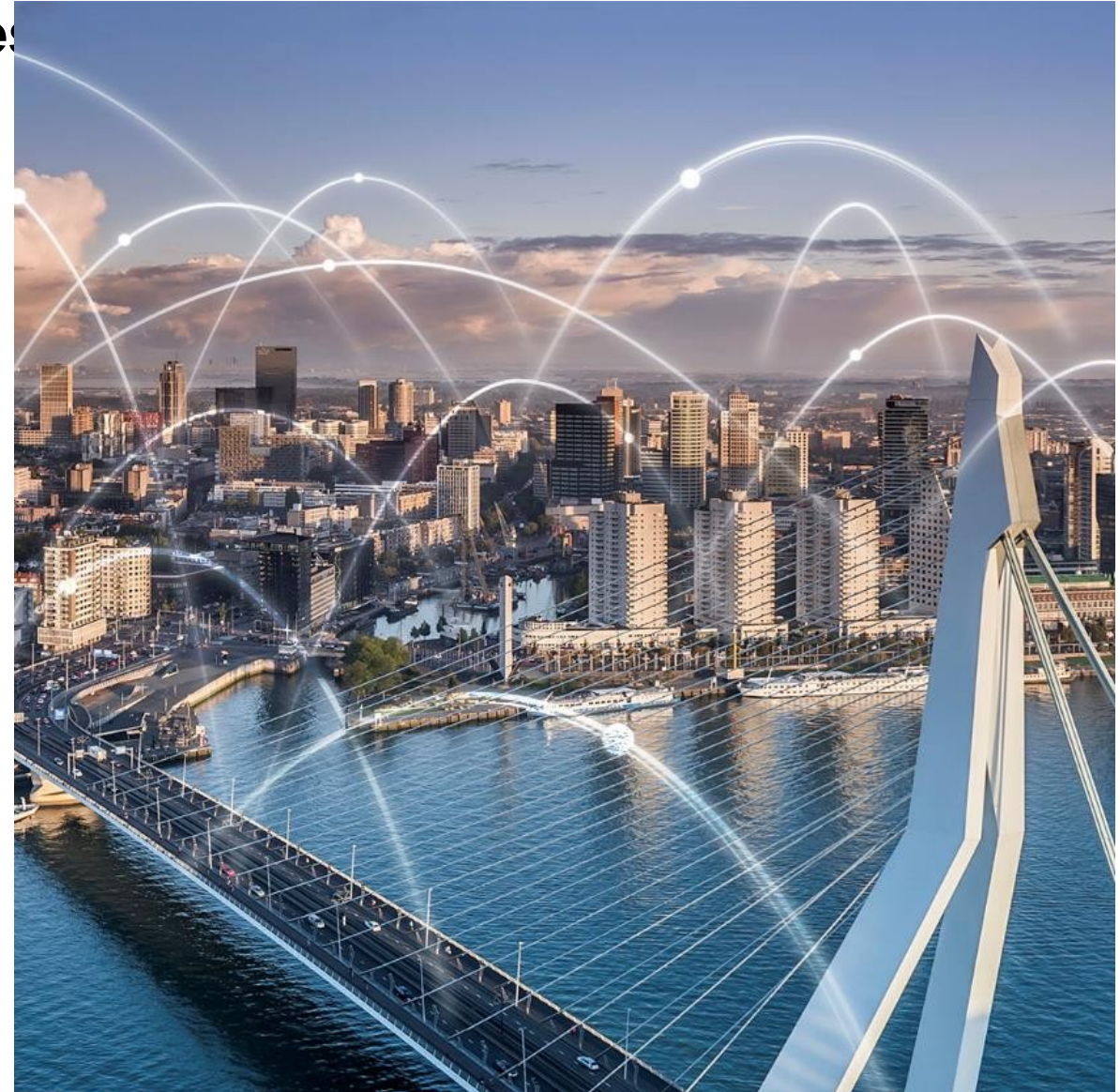
1. What is a digital city? How does it relate to the existing city?
2. What does this do to the challenges the city is facing?
3. Which role(s) does the municipality have in this digital transformation?

Duration: 2019-2024

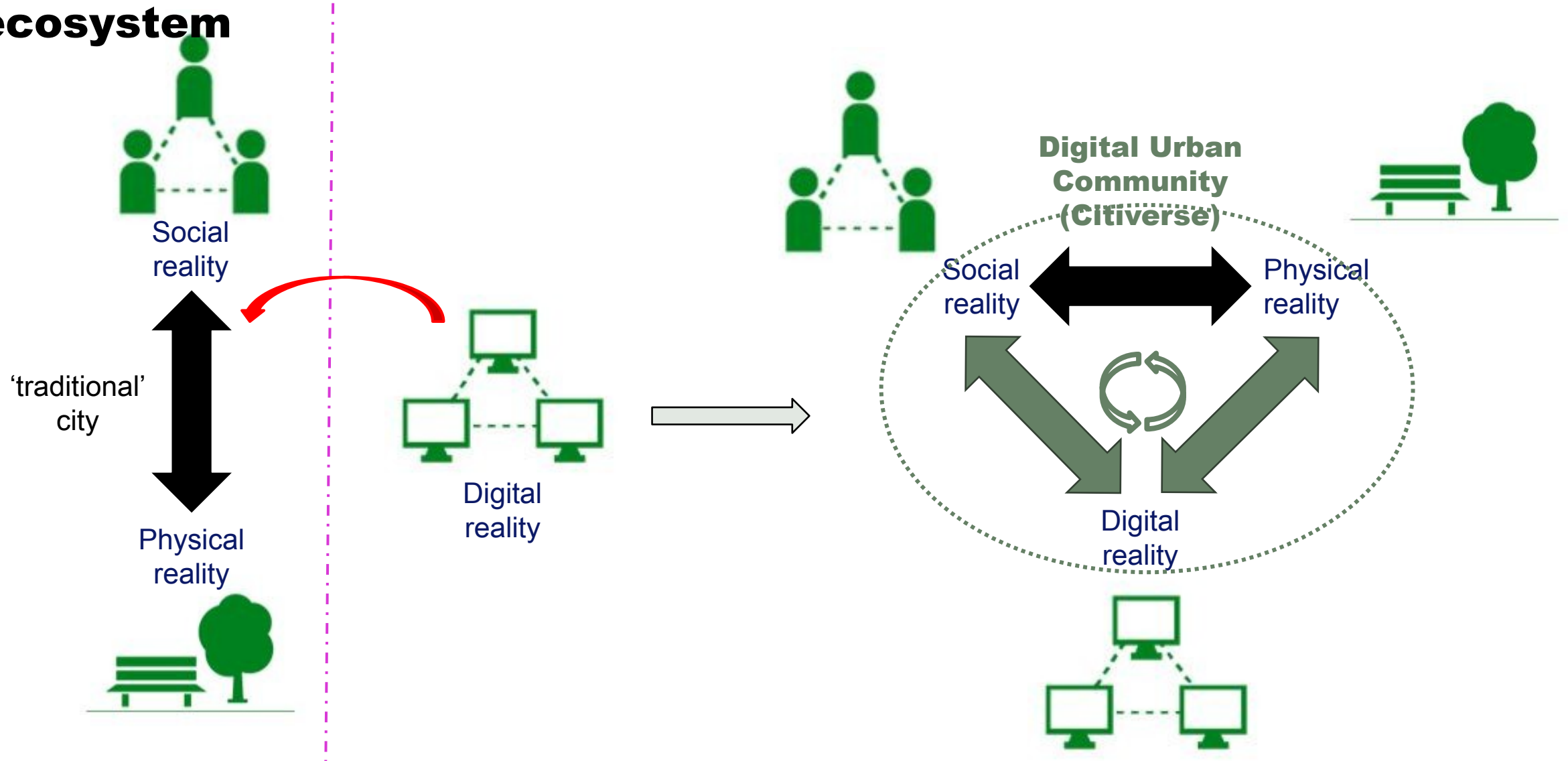
Investment (€): 9M (6M internal, 3M external)



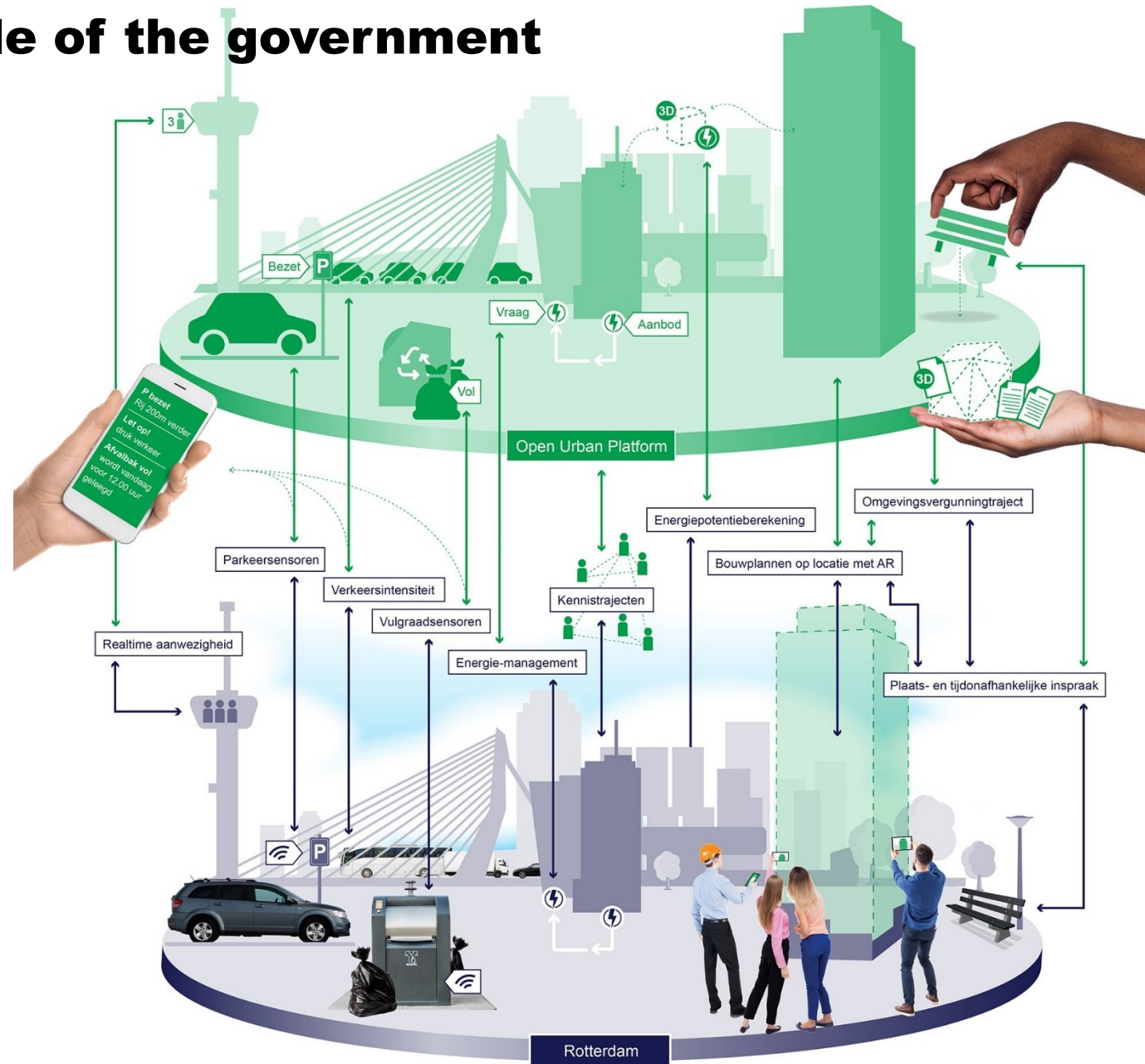
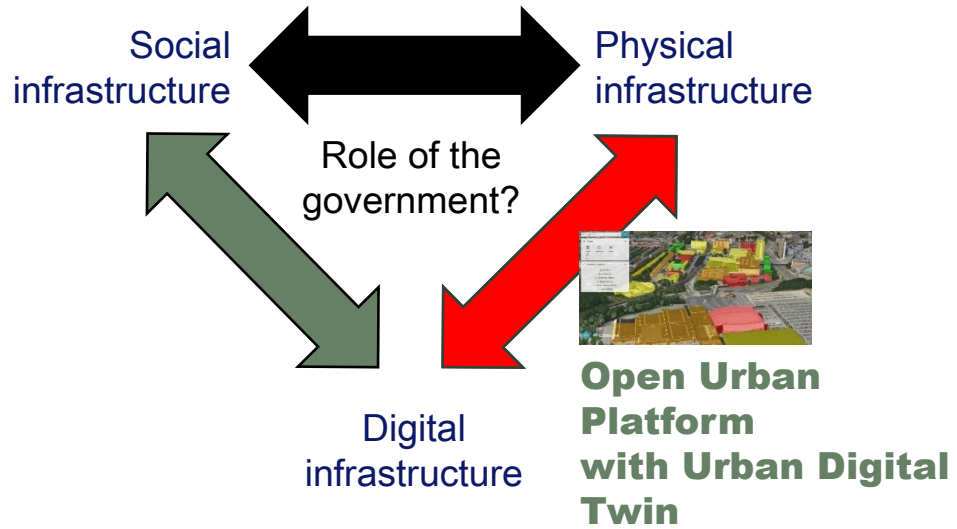
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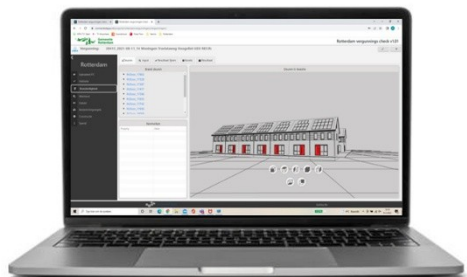
# City in transformation – towards a social-physical-digital ecosystem



# Digital infrastructure and the role of the government



# Open Urban Platform (with Digital Twin) as generic digital infrastructure for applications & services

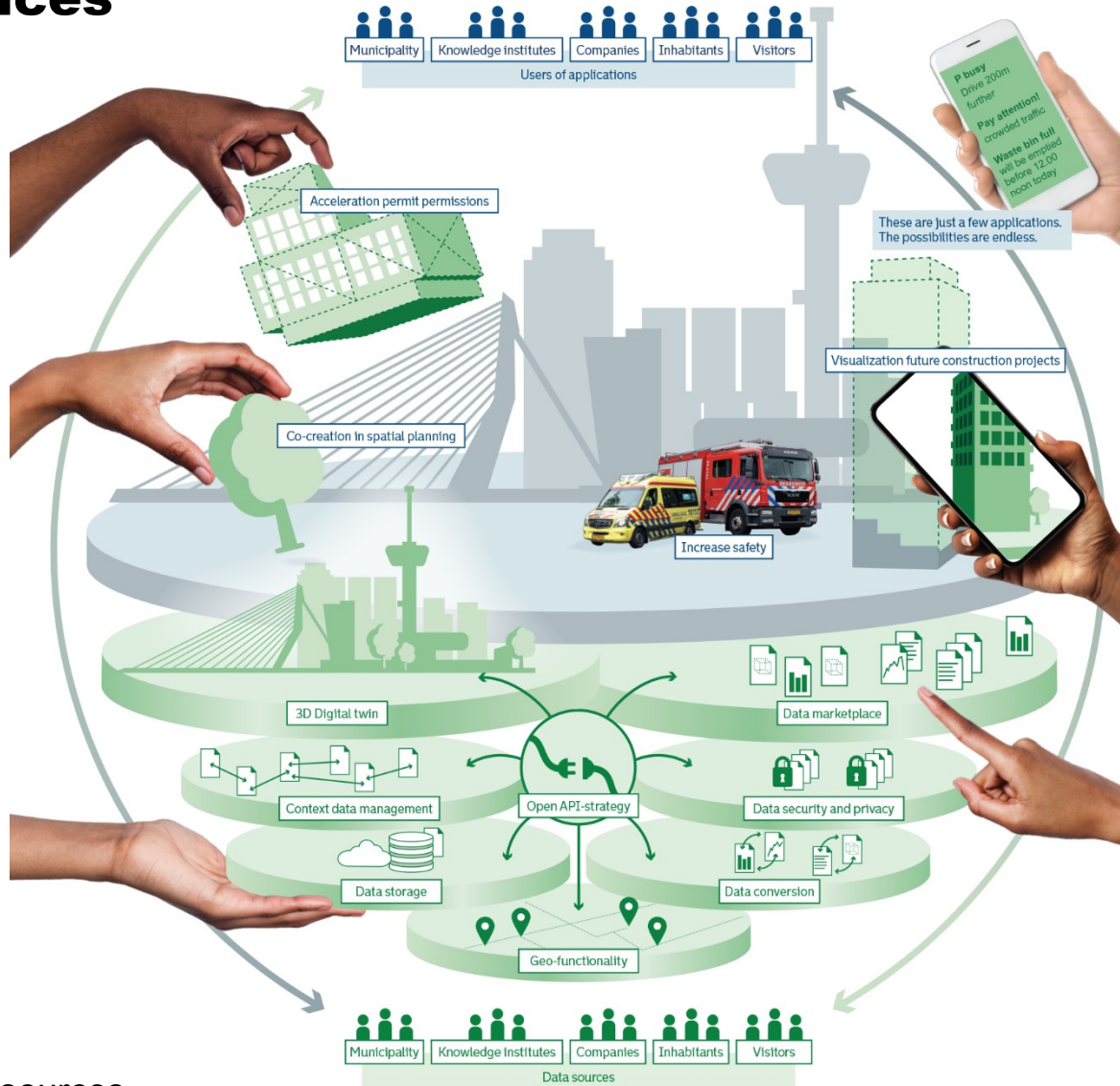


## Smart spatial planning:

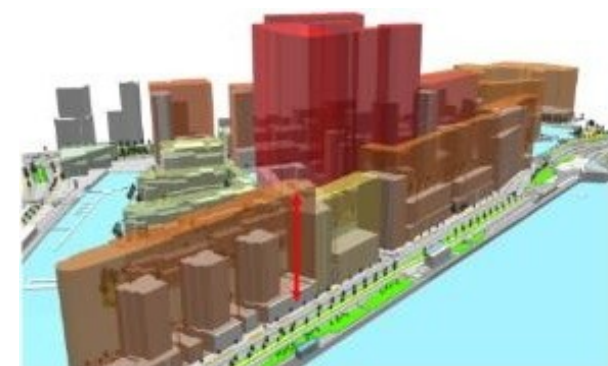
- Building permit check service
- Co-creation in the digital city



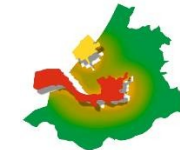
Digital Twin Sustainability & Generic, scalable and maintainable data sources



SAFE 3D Rotterdam



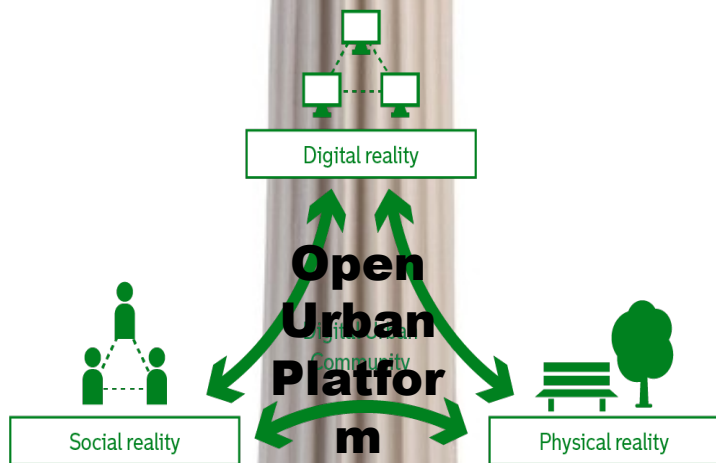
Smart Zoning Plans (Smart planning rules)



Regional cooperation 'Borderless data landscape'

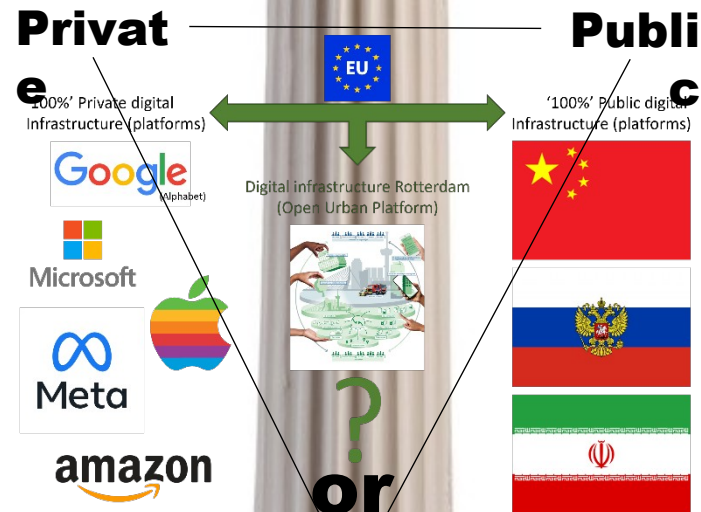
# Building up a digital ecosystem: 3 pillars

## CONNECTIVITY



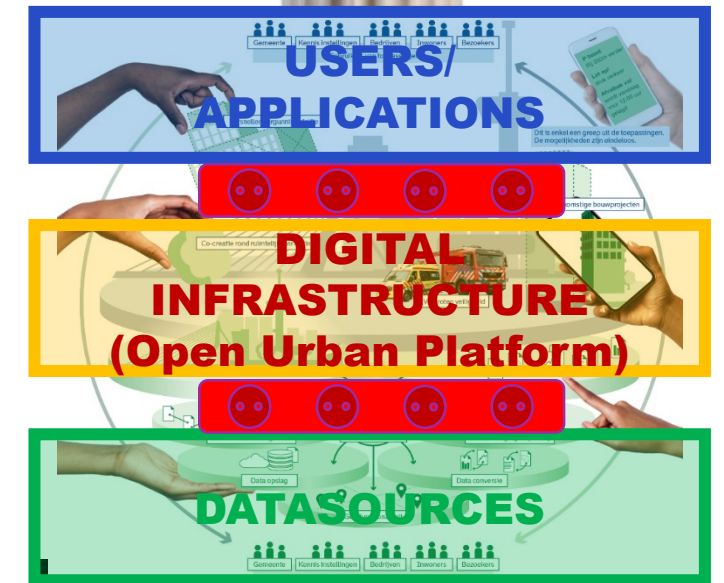
**TRUST**

## GOVERNANCE



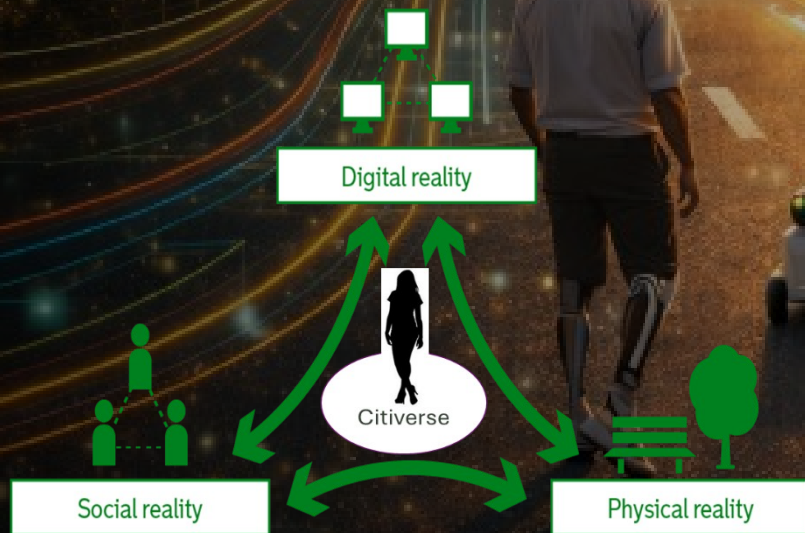
**PUBLIC-PRIVATE PARTNERSHIP**

## ARCHITECTURE



**INTEROPERABILITY**

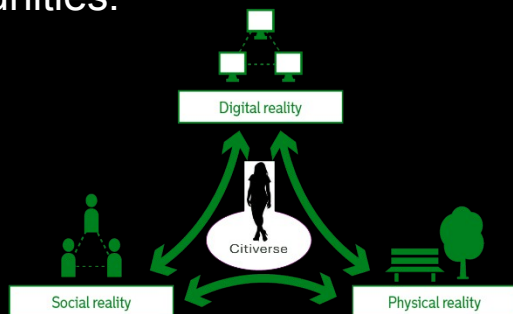
# Next step: Rotterdam Citiverse



# Human centered concept 'Citiverse'

The Citiverse ('Citizens Verse') concept helps us better understand the impact of digital transformation on the social-physical-digital city in general and the living environment of the citizen in particular.

By better understanding this new social-physical-digital reality, we can better anticipate and thereby increase the resilience and adaptability of the city and its citizens, as well as better utilize opportunities.





**Vision on Rotterdam Citiverse (end 2027): angles, building blocks and workplaces**

**12 Building blocks**

- 1. Circular Economy**
- 2. Adaptive Infrastructure**
- 3. Port Economy**
- 4. Future of Work and Skills**
- 5. Youth-Led Innovation & involvement**
- 6. Digital Identity and Autonomy**
- 7. Security and (Cyber)crime**
- 8. Societal Responsible Entrepreneurship**
- 9. Preventative Healthcare**
- 10. Citizen-Centric Government Services**
- 11. Citizen-centred Public Spaces**
- 12. Sustainable Spatial Development**

**5 Workplaces**

- 1. Digiderius**
- 2. Web3.0 – Datavault**
- 3. x-CITE**
- 4. Ecosystem of applications (Appstore+)**
- 5. Digital tools for participation and co-creation**

**4 'Angles of approach'**

- 1. Digital inclusion**
- 2. Digital economy**
- 3. Digital public services**
- 4. Facilitator digital infrastructure (governance, compliance)**



# Rotterdam Citiverse & Open Urban Platform



Rotterdam Citiverse Vision 2030  
The Physical, Social, and Digital Realms  
Converge to Enhance the Quality of Life for all

July 2025



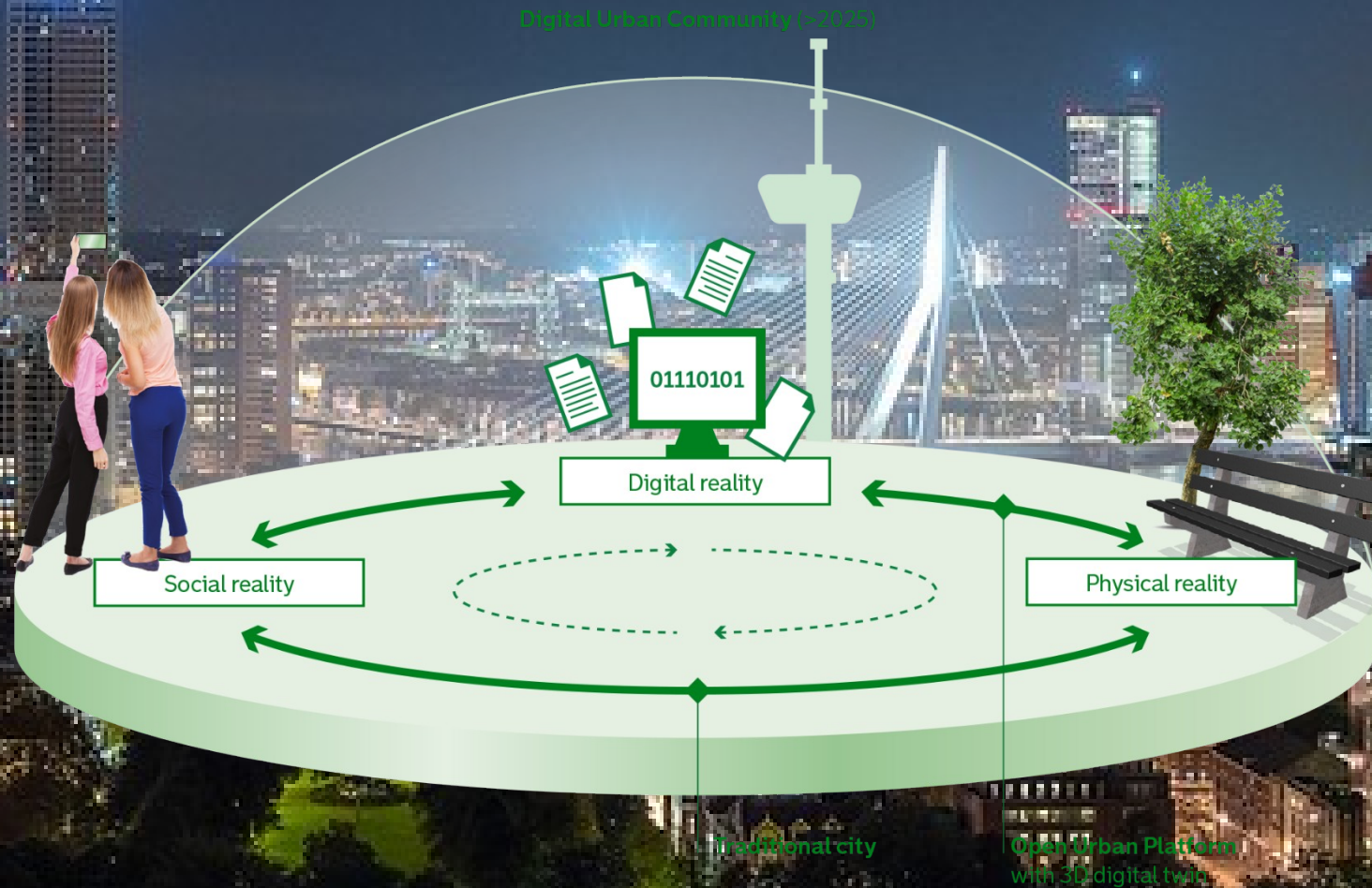
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Mail: [rjmm.vanderheijden@rotterdam.nl](mailto:rjmm.vanderheijden@rotterdam.nl)



More info:  
[National launch OUP](#)  
[Open Urban Platform](#)  
[www.digitaalecosysteem.nl](http://www.digitaalecosysteem.nl)  
[Heatstress, water flooding and mobility in Unreal view](#)

DUTCH SOCIETAL  
INNOVATION HUB

# Thank you for your attention!



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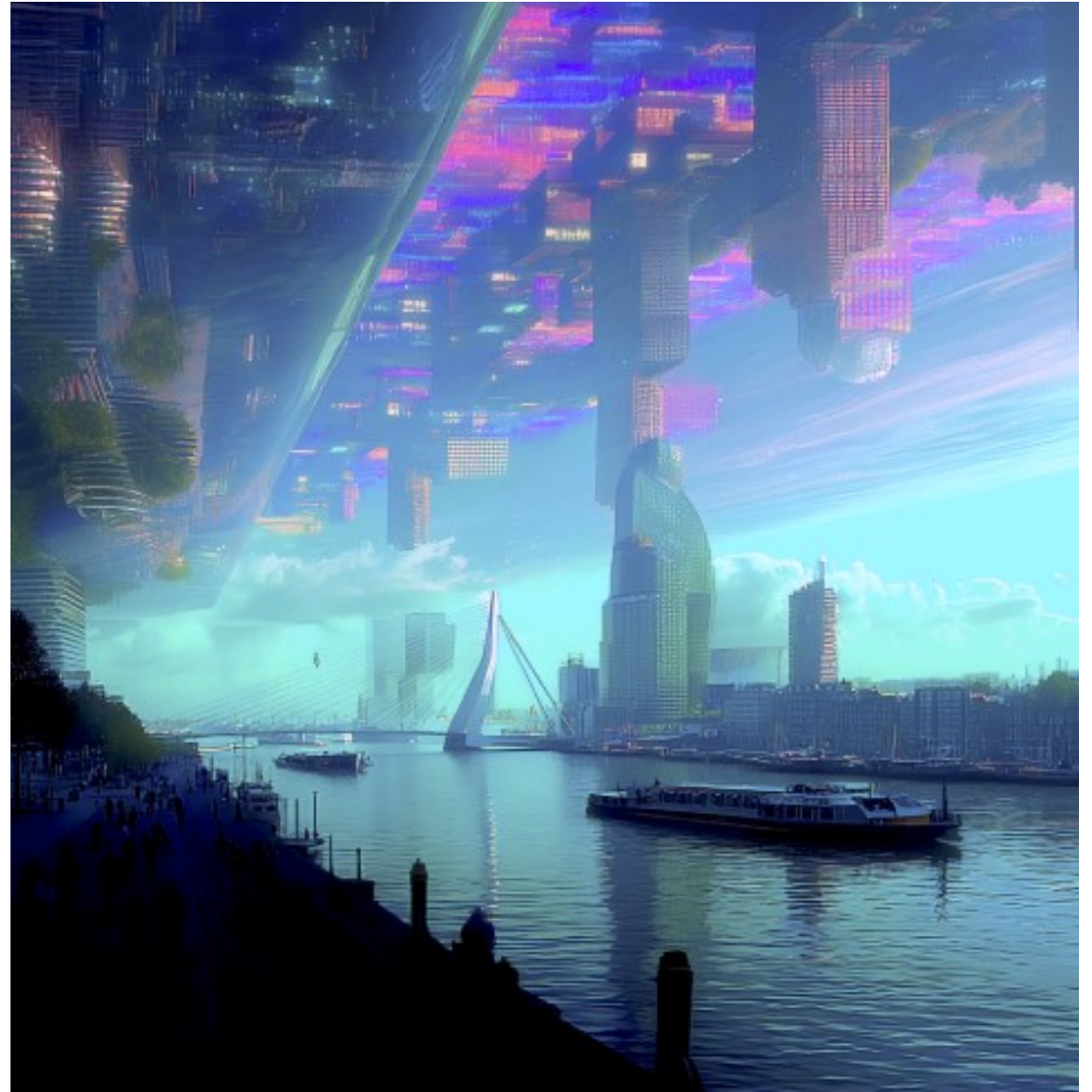
# Biography Roland van der Heijden

- From origin Urban Planner (RUN, since 1997)
- Since 2010 mainly active on data & digital (GIS)
- 2019-2024 Program manager Digital City Rotterdam
- 2024-present Program manager Rotterdam Citiverse
- October 1th, 2025: Chief Citiverse Officer Rotterdam
  
- UN Global initiative on Virtual worlds & AI – Discovering the Citiverse: Member Steering Committee (> jun 2025) & Co-Lead Track 16 Interoperable Citiverse (> nov 2025)
- European Digital Infrastructure Consortia – Network for Local Digital Twins (EDIC – nLDT): Member NL Strategy Board (> sep 2024)
- Open & Agile Smart Communities (OASCities.org): Coordinator Council of Cities (jul 2023-jun 2025); Taskforce Leader Interoperable Citiverse (> aug 2025)
- Member Societal Advisory Board Hybrid Intelligence Centre (> jun 2025)



# Most important 'lessons learned' Digital City: embrace uncertainty!

1. Development digital infrastructure is a long term, concernwide and iterative process: 'think big, act small';
2. Think 'inside-out' and 'outside-in', top-down and bottom-up, demand- and supply driven, strategic and operational; and do it simultaneously!
3. Confidence is essential for activating an ecosystem successfully;
4. Seek for the right balance between a reliable exploitation and a responsible governance structure;
5. Go where the energy is, organize a 'coalition of the willing' over silos and sectors;
6. Importance of generic, scalable, maintainable and FAIR data sources;
7. Data-driven means that data must be able to flow: data interoperability (PPI's) is key, software follows;
8. Create images/videos/infographics etc.;
9. Data governance within an ecosystem is something else than data governance within an organisation;
10. Innovation is 25% content/technique and 75% organisational and cultural change.



# Advantages using the Urban Digital Twin concept

1. Gives 'meaning' to the OUP
2. Gives visualisation of current and historic state
3. Offers common and shareable image as startingpoint for cooperation (less 'noise' between results)
4. Basis for numerous applications and services (i.e. analyses, design, scenario planning, AI)
5. Enhances the ecosystem way of thinking
6. Stimulates the use of generic, scalable and maintainable datasources (FAIR; open, well-known standards)
7. Consistent user experience
8. Offers new possibilities for citizens participation and empowerment
9. Stimulates economic innovation



# Advantages Open Urban Platform with Ecosystem of Applications (Appstore+)



## For companies (app developers):

- Broader market for selling digital products
- Lower costs
- Easier to scale and expand
- Easier further development of products
- Less barriers for customers to use a product
- Together with others offering a more integrated landscape of applications

## For users (including governments):

- Availability of data
- Availability of applications and services
- Less data management
- Less application management
- More integrated use and results of different applications and services
- Pay per use

## For governments (public role):

- Offering responsible, safe and transparent digital infrastructure
- Low costs (private exploitation and maintenance OUP)
- City/government more in control of governance digital infrastructure

## For datasource holders:

- Broader market/1:n disclosure
- One data delivery agreement
- IAM arrangements
- Potential commercial sales