



Setting the Scene Digital Water and the Twin Transition

SMART.MET Final Conference

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EU Green Deal & Europe Fit for the Digital Age: '*Twin green and digital transitions*' ; need to tackle the twin challenge in a **holistic and systemic way**

Smart cities and communities use digital technologies to reduce resource input and improve the quality of life for their citizens (- > at the heart of the '*twin digital and green*' transition)

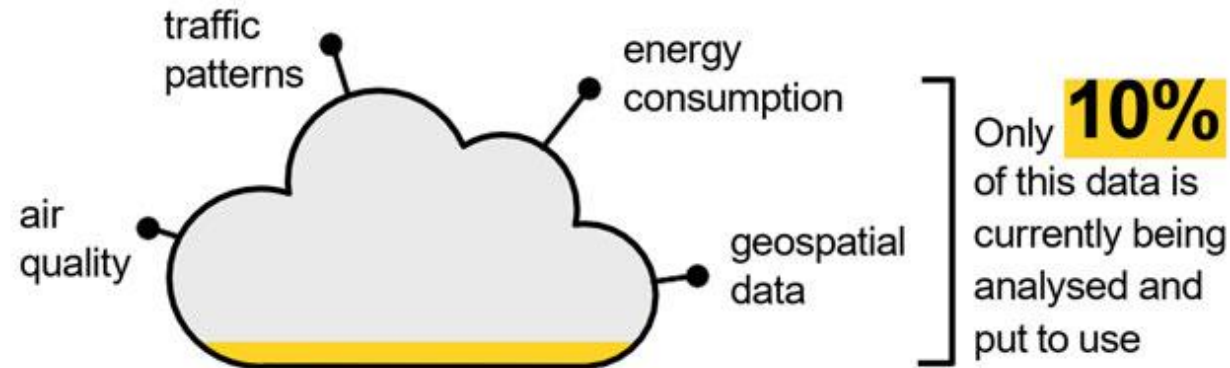
Digital Day 2021 - A Green and Digital Transformation of the EU (Ministerial Declaration)

- Work with local authorities and other relevant stakeholders to set up a European network of digital twins of the physical environment
- Support EU cities and regions to use green digital solutions in their transition to climate neutrality

Potential of digital in smart cities

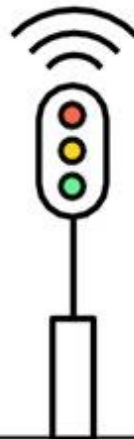


By **2021:**
83 billion
connected devices and
sensors will be creating
large, diverse datasets
on a wide range of topics:



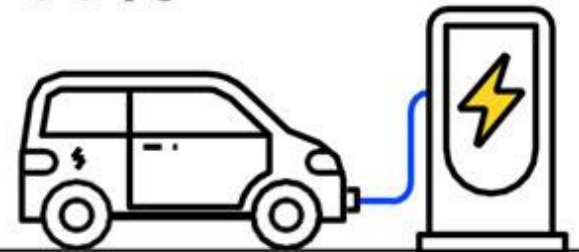
Smart traffic management
systems can:

reduce
congestion by
8%



increase
travel
speeds by
30%

Smart charging can reduce
EV impact on peak demand by
60%



Energy efficiency in water
treatment plants can save
municipalities

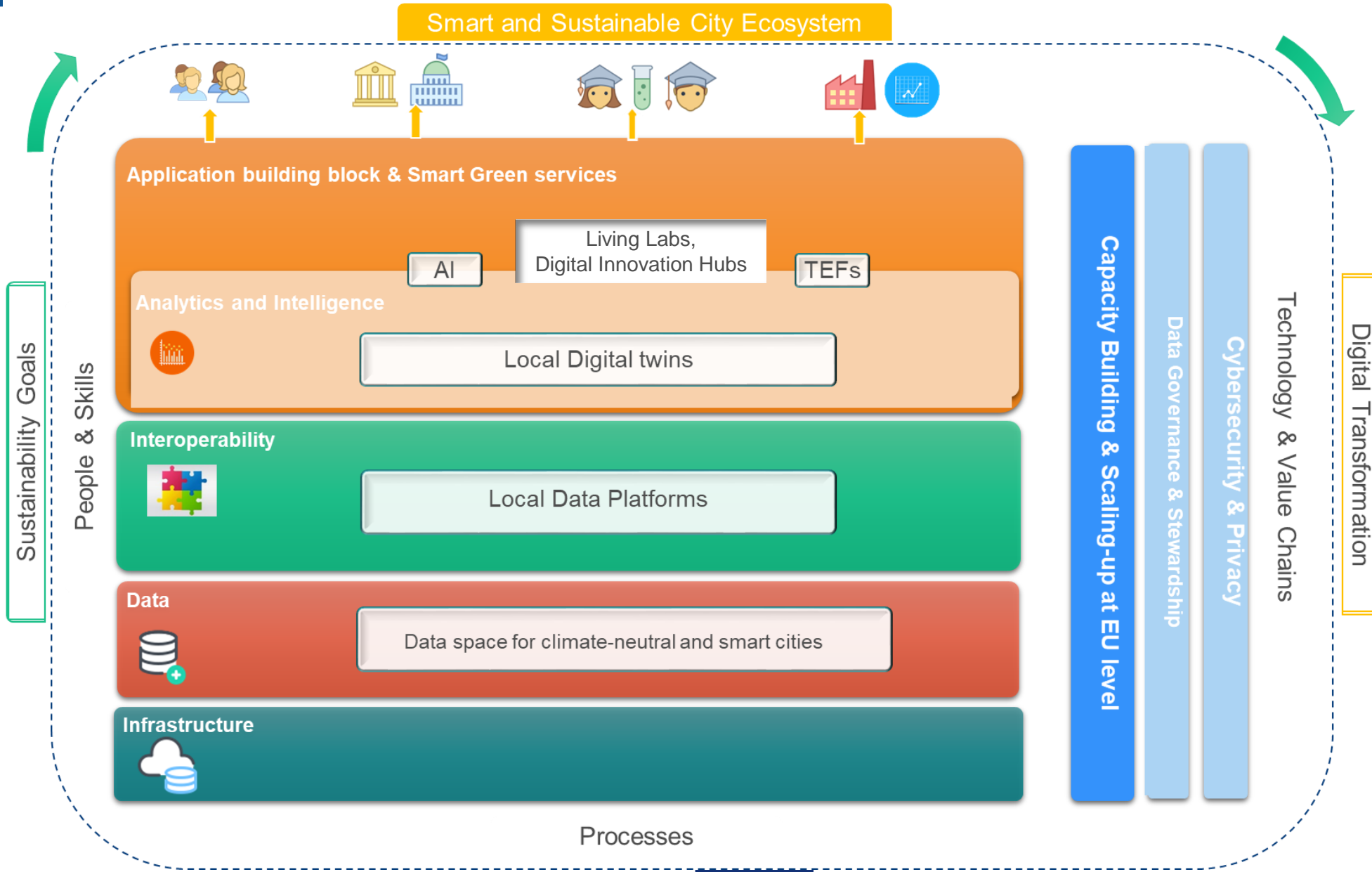


15-30%
of their
expenditure

New competences and functions in data-driven cities



- **(Horizontal) Local data platforms** (e.g. connecting all the sensors installed in the city, aggregating data from different sources, repackaging the collected data for daily consumption by different city stakeholders, etc.)
- **Operation centers and dashboards** (e.g. interlinking real-time data streams to provide an integrated view of the city, to track the performance of the city, using automated systems to respond to citywide events by making immediate decisions pertaining to various urban areas, etc.)
- **Strategic planning and policy office** (e.g. making extensive use of data to guide urban long-term planning and design, identifying patterns, and recognising and solving city problems, etc.)
- **Training, education and capacity building** (e.g. big data science and analytics, etc.)
- **Innovation labs and research centres** (e.g. multi-disciplinary teams, testing, etc.)





LIVING-IN.EU

The European way of digital transformation
in cities and communities

*Over 100 signatures so far...
From Mayors, Regional and national Ministers*

<https://www.living-in.eu/>



Rationale

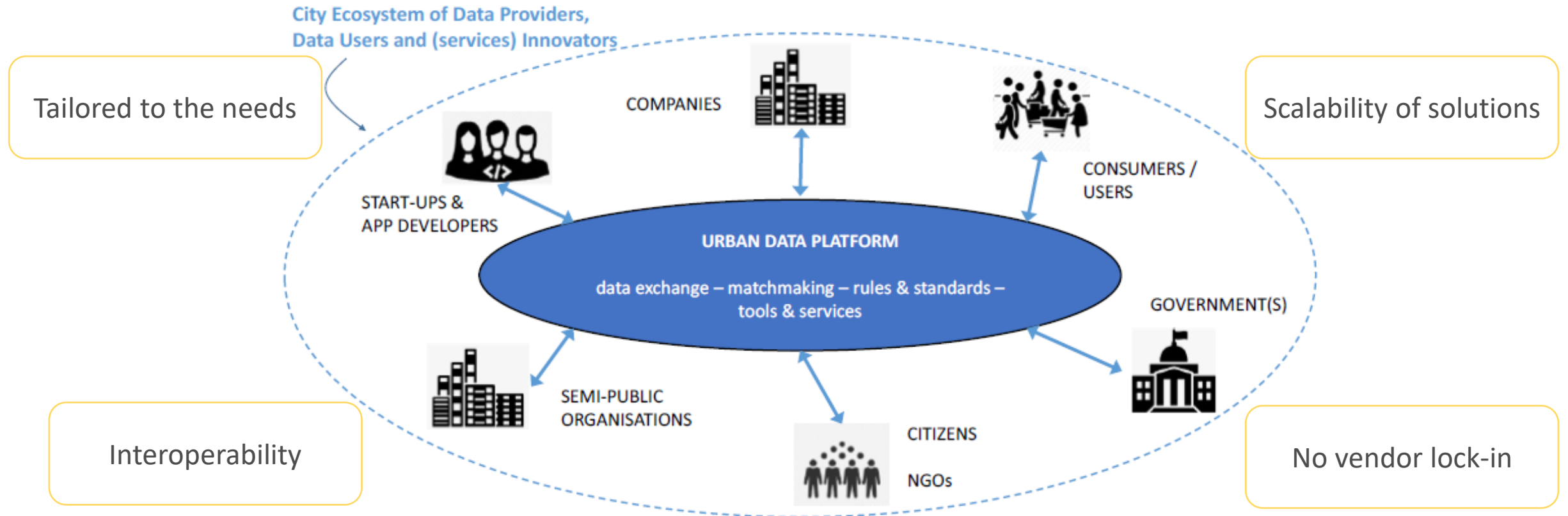
- Access to public, but sensitive data (for analytics/AI) – Data Governance Act
- Access and reuse of private data with public interest (B2G data sharing) – Data Act
- European cities need to ensure citizens' digital rights (personal data management)
- Smart cities strive for portable and affordable, innovative cross-sector services (city-to-city & cross-border)



Rollout of common European data spaces

in crucial economic sectors and domains of public interest, looking at data governance and practical arrangements.

Data space: interoperable and secure environment, where currently fragmented and dispersed data can be shared among those, who become part of this data space based upon voluntary agreements and under certain conditions



A **Local Data Platform** is the “operating system” on which digital services can be provided to smart cities and communities, integrating data flows within and across city systems by exploiting modern technologies, such as sensors, cloud services, mobile devices, analytics, etc.



Local Digital Twins can save USD 280 billion in city planning, development and operating plans

(Source: ABI Research)

Local Digital Twins can:

- Reduce operating costs by 35%
- Boost productivity by 20%
- Cut emissions by 50-100%

(Source: CityZenith)

- Operational decisions (short-term) - reactive

Public safety and crowd dynamics , traffic management, public transport and pedestrian management, facilities management, etc.

- Strategic (long-term) decisions - predictive

Urban planning and development, asset and infrastructure management, environmental and climate monitoring & planning, energy usage and solar deployment, etc.

Digital twins of the city are virtual replicas of urban environments, connected to both static and dynamic data sources that allow modelling multidimensional urban processes and perform simulations to improve decision-making.

Examples of local digital twins in the EU



Port of Rotterdam



3D copy of Antwerp



Helsinki



Athens, Berlin, Flanders, Sofia



Madrid, The Hague, Budapest, Lyon, Oslo and Porto



Flanders, Athens, Pilsen

+ Amsterdam, Angers, Gothenburg, Hamburg, Herrenberg, Kongsberg, Munich, Rennes, Stockholm...

EU funding DIGITAL Programme



Data



Data space for climate-neutral and smart cities

- Developing data governance scheme
- Blueprint of data space (governance)
- Priority data sets aligned with blueprint standards and principles
- Roadmap
- Validation of the blueprint on at least two of the European Green Deal action areas

Interoperability



Local Data Platforms

Help prepare the procurement and deployment of the interoperable local platforms

Application building block & Smart Green services

AI

TEFs

Analytics and Intelligence



Local Digital twins

Procure a European toolbox for Local Digital Twins that all European cities could use when developing their digital twins



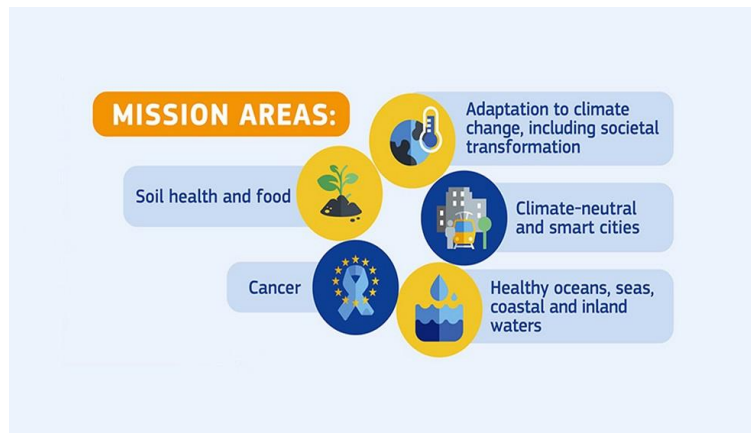
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The European way of digital transformation in cities and communities

Horizon Missions:

- Climate Adaptation (help at least 150 European regions and communities to become climate resilient by 2030)
- Climate-neutral and smart communities (deliver at least 100 climate-neutral and smart European cities by 2030 and putting all European cities in a position to become climate-neutral by 2050)

-> These Missions will be supported by the underlying technical infrastructure (data spaces, platforms, AI-enabled solutions) supported by the Living-in.eu community and the Commission (Destination Earth, European Green Deal Data Space)



Thank you!