Data Spaces Symposium

Data spaces for mobility, tourism, cities: How data spaces are transforming our lives

Impact assessment in the European Data Space for Smart Communities
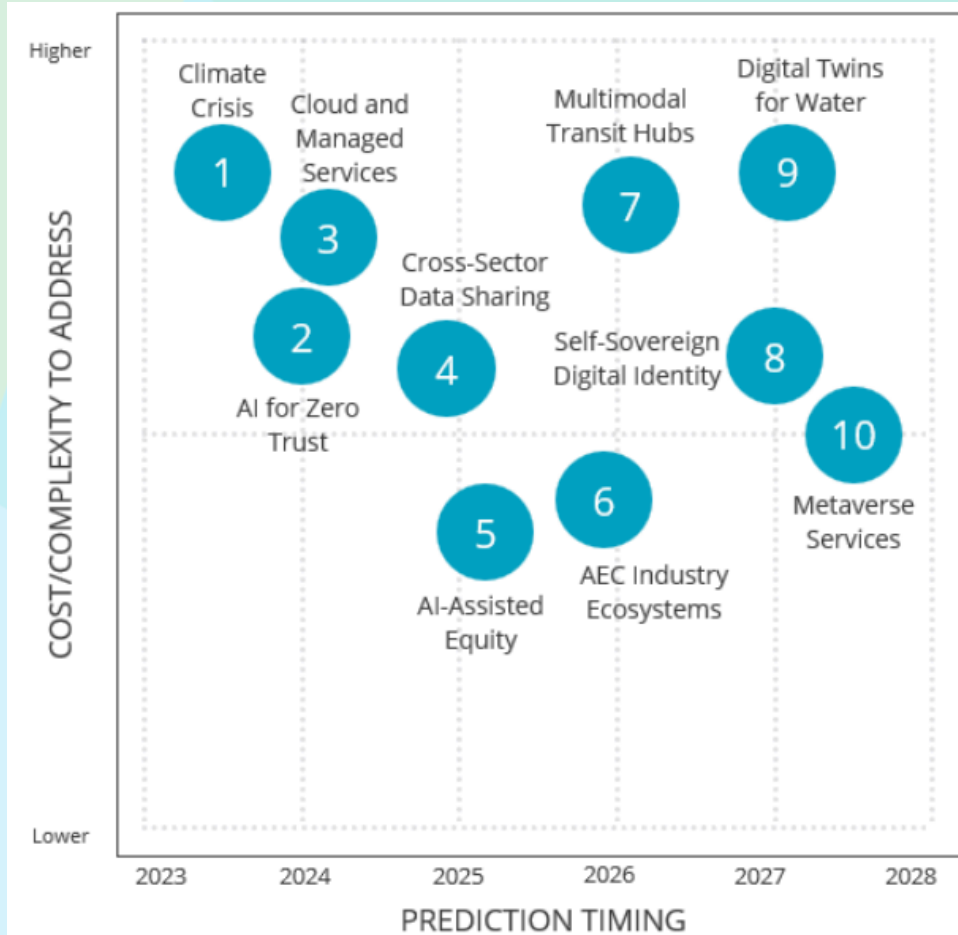### 13th March 2024, Darmstadt

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Consulting Director
IDC, DS4SSCC-DEP

You will get insights about...

- A bit of context of the European Data Space for Smart Communities
- Impact Assessment: what and how?

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Data is a prominent ingredient in major predictions for Smart Cities and Communities

Higher

COST/COMPLEXITY TO ADDRESS

Climate Crisis

Cloud and Managed Services

Multimodal Transit Hubs

Digital Twins for Water

1

3

7

9

Cross-Sector Data Sharing

2

4

Self-Sovereign Digital Identity

8

10

AI for Zero Trust

5

6

Metaverse Services

AI-Assisted Equity

AEC Industry Ecosystems

Lower

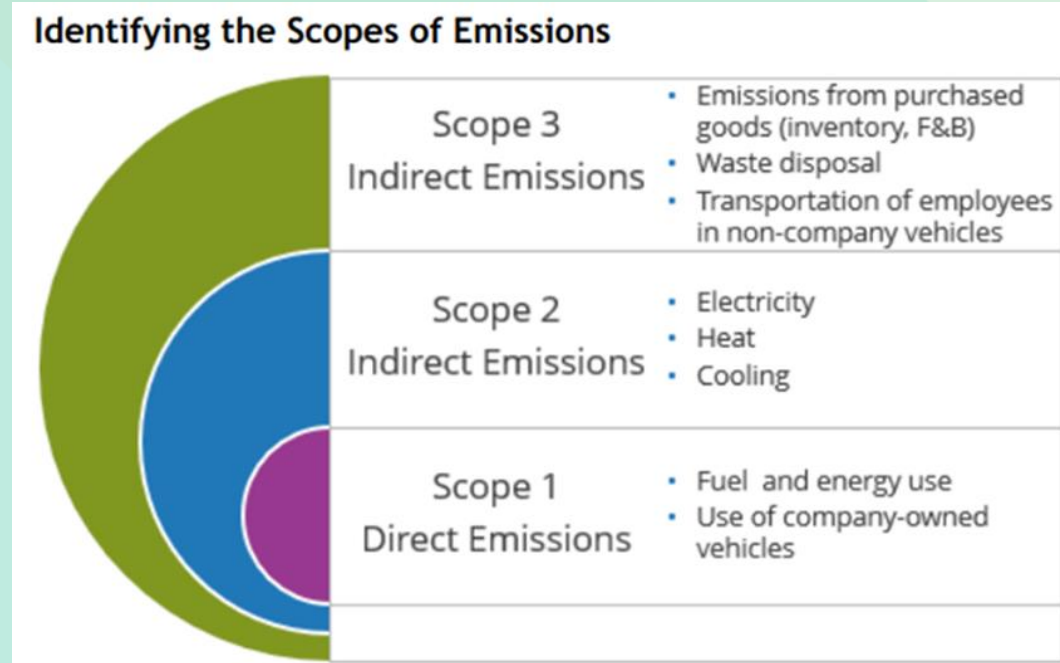2023 2024 2025 2026 2027 2028

PREDICTION TIMING

- Prediction 1: By 2023, **60% of cities and communities will have been impacted by the global energy and climate crisis**, despite some efforts in climate tracking, climate intelligence, and green procurement.

- Prediction 4: By 2024, **25% of states, provinces, and local governments will create platforms to enable data sharing** between government, the private sector, and users to improve processes and the user experience.

- Prediction 6: By 2025, **75% of large cities and communities will form industry ecosystems with IT, architectural, engineering, and real estate firms to share data, applications, and expertise to address ESG issues**.

- Prediction 9: Threatened by water scarcity and extreme weather, by 2027, **40% of large cities will have digital twins of their water resources to manage water supply, quality, resilience, and behavioral change.**

- Prediction 10: By 2027, **20% of city products and services will be delivered using metaverse or augmented reality solutions**, transforming services delivery, planning and simulation, and constituent interactions.

IDC FutureScape: Worldwide Smart Cities and Communities 2023. Top Predictions

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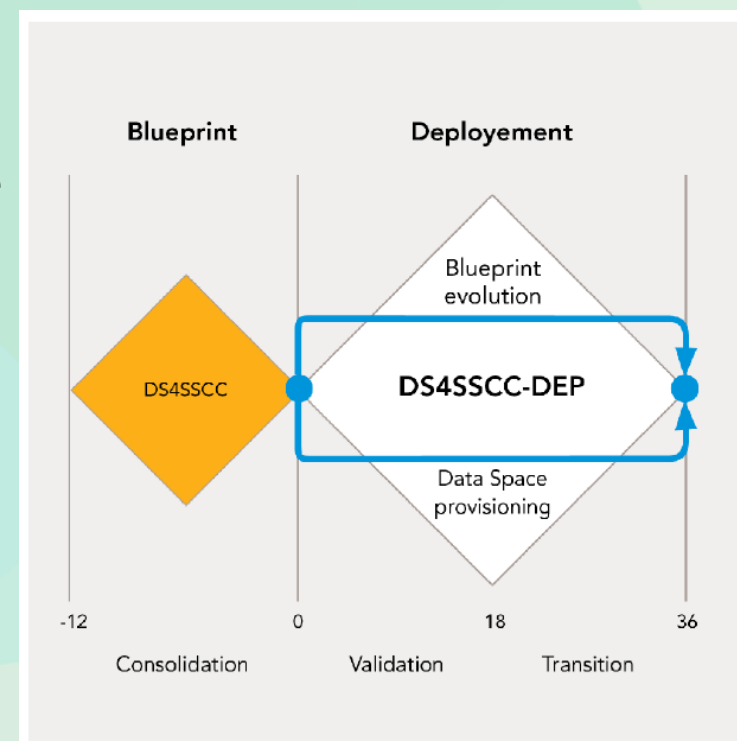# Mainstream ESG/ IT for sustainability: Environmental, social and governance

- **Collection/reporting of CO2 emissions**:
  - 42% companies are not doing anything
  - 43% collect scope 1 data (internal sources of CO2 emissions) → only 28% report data
  - 7% collect scope 2 data → 7% collect and report data
  - From those that do not collect and report data on CO2 emissions, 73% say this is due to a **lack of access to enough quality data** to accurately assess and report on emissions
  - 18% claim **lack of quality data**
- **Carbon neutral**= scope 1 + scope 2 (internal and energy supplier sources of emissions)
- **Net-zero**= scope 1 + scope 2 + scope 3 (data sources outside the company)

Source: Can IT Make It Easy to Be Green? — Hospitality and Travel Turn to Technology Investments to Achieve Sustainability Initiatives (IDC, 2023)

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What is the **European Data Space for Smart Communities**?

- From Preparatory Action towards Deployment
  - Both actions co-funded by the Digital Europe programme
- The overarching aim is:
  - To create a large-scale cross-sectorial data space for smart communities in the EU...
  - ... and to advance its implementation **to support policy priorities of cities and communities within the EU**...
  - ... by validating the governance and technical blueprint developed by the preparatory action

Website update - inventory.ds4sscc.eu/

CALL FOR PILOTS

These pilots will implement the governance and technical blueprint established by the European data space for smart communities preparatory action (DS4SSCC).

Through the piloting, city ecosystems can expect to:

Be placed in a forefront of innovative smart community development in Europe;

Enter into an expansive network of European communities, experts, and policymakers;

Be recognized as leading examples of sustainable and smart communities development;

Receive support and guidance in aligning with the DS4SSCC blueprint and integrating with broader European data ecosystems;

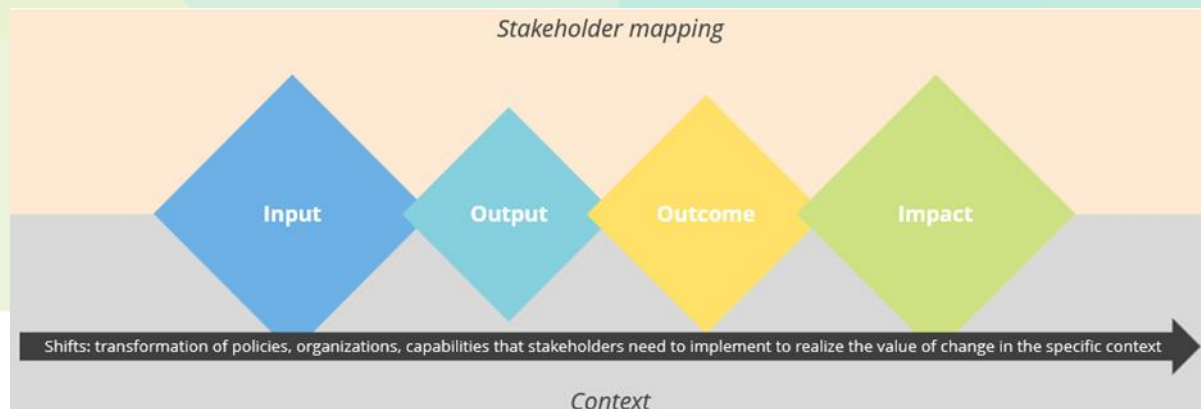Directly contribute to the shaping of Europe's green and digital future.

European data space for smart communities

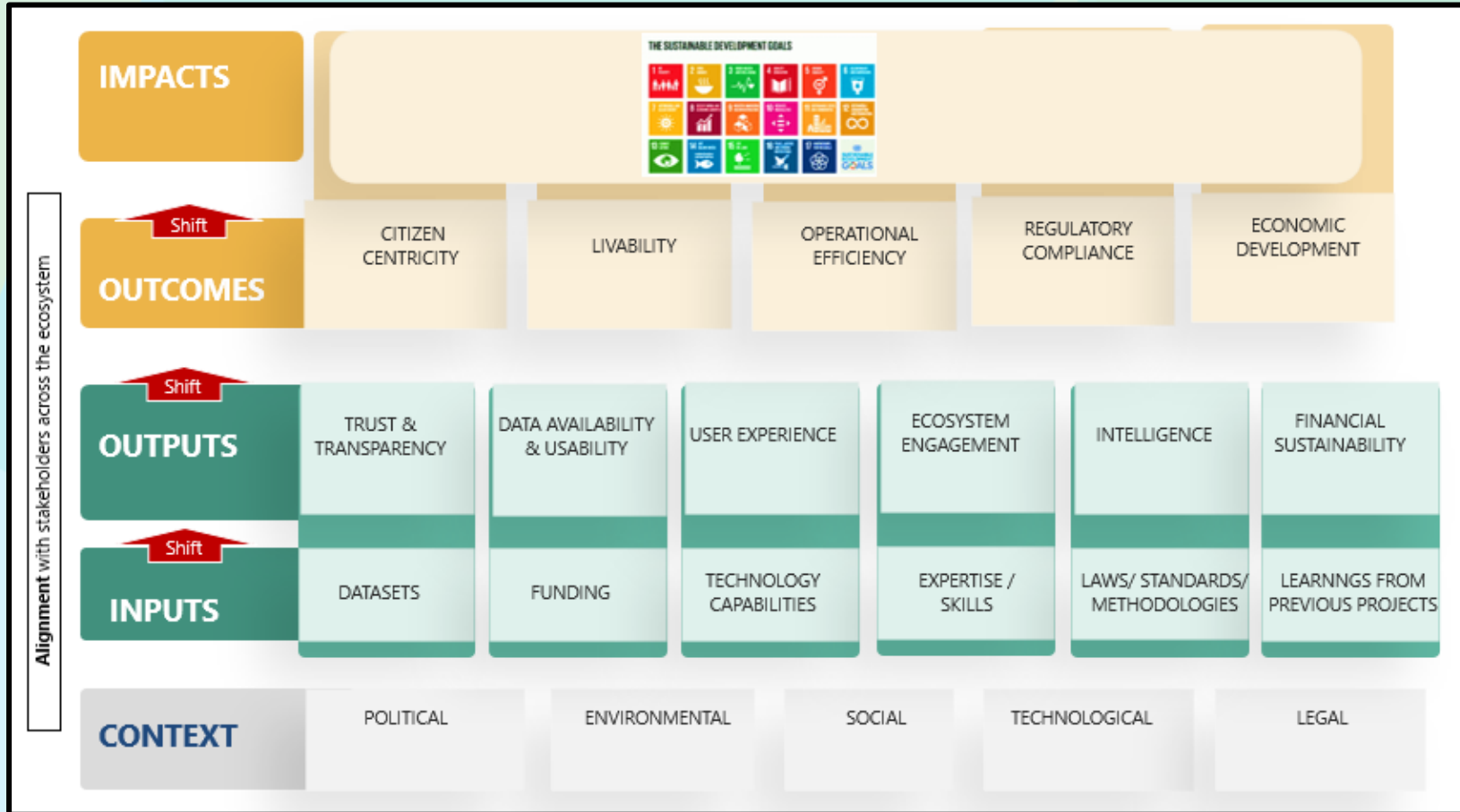# Impact Assessment. Challenges and Considerations

- **Lack of information and empirical evidence on impact** due to several factors:
    - This kind of information is not always documented in publicly available documents
    - Data on the impact of these initiatives is not systematically collected.
    - Productivity gains from technological innovation occur with a time lag (in fact, most data spaces talk about expected outcomes rather than realized outcomes due to the current maturity of data spaces-most in pilot phase)
- Impact Assessment should follow an **iterative approach** and measure **impact of both: i) the data space and ii) the pilots**
- Considerations/factors:
    - Impact through the whole life cycle (acknowledging the **evolution** of the data space)
    - Complex and **dynamic** stakeholder ecosystem
    - **Evolving** external context

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Impact Assessment. Approach

- **Theory of Change + Design Thinking**
  - **Casual chain** linking inputs, activities, outputs, outcomes and impacts
  - **Context of the initiative** (economic, social, political and environmental conditions influencing the casual chain)

- This enables stakeholders to map out and **connect data space interventions with expected long-term goals** in order to enable:
  - **Better planning** by understanding how change happens throughout the entire process, from the launch of pilots to the achievement of long-term goals.
  - **Better evaluation** by measuring progress of the DS4SSCC initiatives throughout the full cycle

Stakeholder mapping

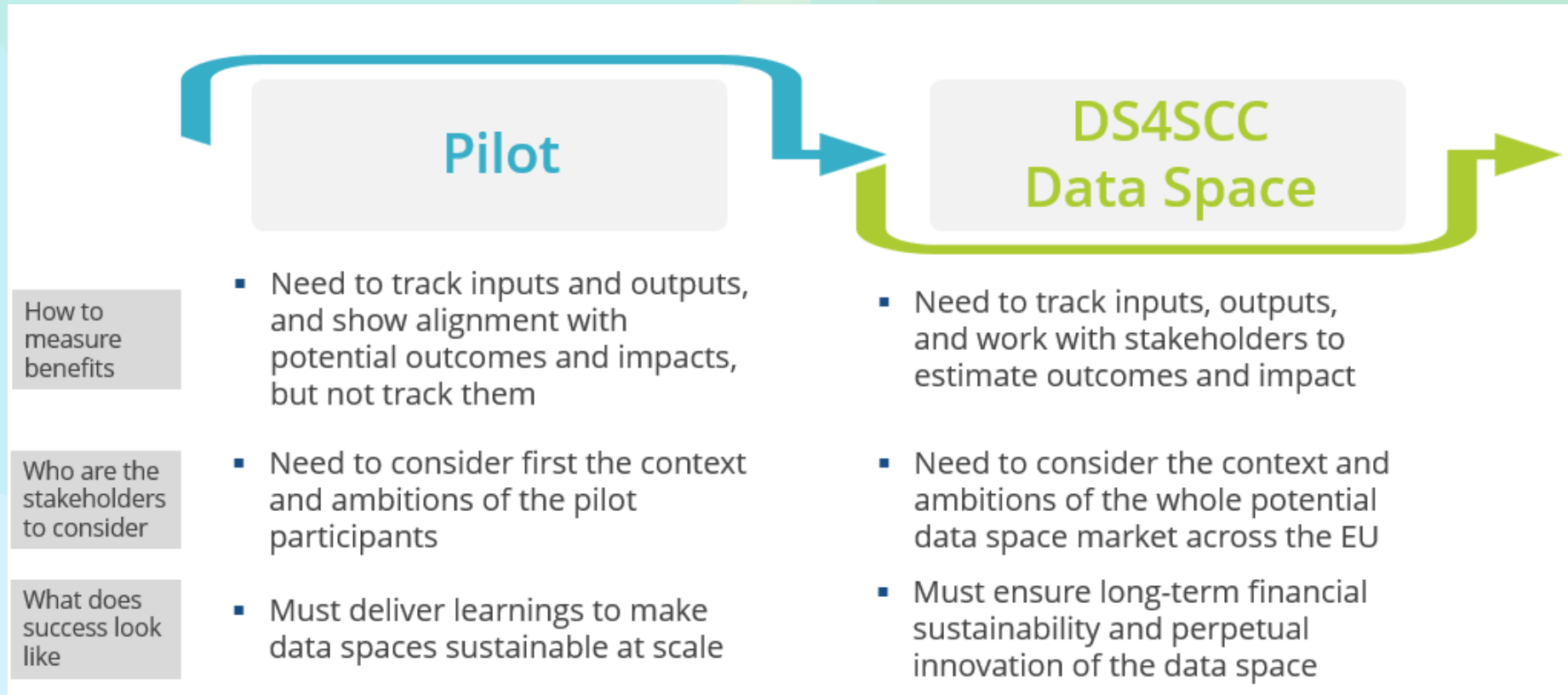Input   Output   Outcome   Impact

Shifts: transformation of policies, organizations, capabilities that stakeholders need to implement to realize the value of change in the specific context

Context

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D4SSCC Impact Assessment Framework. Components

DS4SSCC-DEP; March 2024

- **Impacts**: long-term effects produced as a result of an intervention
- An **outcome** is a likely or achieved short-medium term effect of an intervention's outputs
- **Outputs** are the products, goods and services which result from implemented change activities including new policies, legislation, technological solutions, infrastructure.
- **Inputs** are the required set of resources needed for a transformation process
- The **context** refers to specific features and dimensions to drive transformation and impact through data space use cases and initiatives

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Application of the Impact Assessment Framework

	Pilot	**DS4SCC Data Space**
How to measure benefits	▪ Need to track inputs and outputs, and show alignment with potential outcomes and impacts, but not track them	▪ Need to track inputs, outputs, and work with stakeholders to estimate outcomes and impact
Who are the stakeholders to consider	▪ Need to consider first the context and ambitions of the pilot participants	▪ Need to consider the context and ambitions of the whole potential data space market across the EU
What does success look like	▪ Must deliver learnings to make data spaces sustainable at scale	▪ Must ensure long-term financial sustainability and perpetual innovation of the data space

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Impact Assessment Framework. Preliminary indicators/KPIs

- ### OUTPUT KPIS

Trust and transparency	• Compliance with cybersecurity regulation • Compliance with digital identity regulation • Adoption of international cybersecurity standards • Compliance with GDPR • Compliance with EU data regulation (e.g., Data Act, Data Governance Act, AI Act, Open Data Directive) • Adoption of ethics policy
Data availability and usability	• Number of datasets • % distribution of datasets across smart city domains • Compliance with MIMs • Compliance with Interoperable Europe Act • Compliance with INSPIRE Directive • Number of downloads / views / API calls • % distribution of downloads / views / API calls across datasets
User experience	• Compliance with accessibility regulation • Adoption of international accessibility standards • User satisfaction score • Omni-channel experience
Ecosystem engagement	• Number of data users • Number of data providers • Number of data intermediaries • % distribution of users/providers/intermediaries across countries • Participation in communication and dissemination events • Social media engagement
Intelligence	• Availability of analytical dashboards visual • Number of third-party analytical and AI applications developed using DS4SSCC datasets • % distribution of third-party applications across smart city domains

- ### OUTCOME KPIS

Citizen-centricity	• Citizen satisfaction • Level of personalization and proactivity of smart cities services enabled by the data space • Number of datasets available on the city open data portal • Number of downloads / views / API calls out of the city open data portal
Liveability	• Availability and downloads of data and insights on cities and communities' safety and security • Availability and downloads of data and insights on cities and communities' environmental sustainability • Availability and downloads of data and insights on cities and communities' sustainable mobility • Availability and downloads of data and insights on cities and communities' social inclusion
Operational efficiency	• Employee productivity • Responsiveness to citizen requests • Time to market of new services
Regulatory compliance	• Compliance with European Data Act • Compliance with European Data Governance Act • Compliance with Open Data Directive • Compliance with Interoperable Europe Act • Compliance with Inspire Directive • Compliance with GDPR
Economic development	• Number of SMEs involved in the Data space • Number of new products and services launched based on the Data space dataset • Type of skills nurtured through the dataspace

for smart communities

Website

- Project information
- News, events, Press releases & Publications
- Open Calls
- Pilots
- Stakeholder Forum
- Contact information & Newsletter

Social Media

- Project News & Updates
- Open Call announcement & updates
- Pilot updates
- Events announcements
- Stakeholder Forum Updates
- Project collaborations

Youtube

- Stakeholder Forum meetings
- Online Workshops
- Stakeholder Engagement

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