Data spaces: Introducing the concept and relevance in today’s world
Rules of the game

- The webinar will be recorded
- Please mute yourselves during the webinar
- For questions, please use the ClickMeeting chat.
- Please reserve 3 min after the webinar to help us improve by filling in our feedback form
Introduction

Giulia Carsaniga
Research and Policy Lead
Consultant, Capgemini

Daniele Rizzi
Principal administrator and policy officer, DG CNECT

Johan Bodenkamp
Policy and project officer, DG CNECT
Agenda

10.00 – 10.05  Opening and introduction of the series

10.05 – 10.45  Introducing the concept of data spaces and the relevance in today’s world

10.45 – 10.55  Q&A

10.55 – 11.00  Recap and closing
Data spaces: Introducing the concept and relevance in today's world’

data.europa academy webinar, 12 May 2023

Daniele Rizzi, Johan Bodenkamp

European Commission, Directorate-General for Communications Networks, Content and Technology (DG CNECT) - Unit G1 – Data policy and innovation
EU digital transition is at the top of the policy agenda:

- **A European Green Deal**
  Europe aims to be the first climate-neutral continent by becoming a modern, resource-efficient economy.

- **A stronger Europe in the world**
  The EU will strengthen its voice in the world by championing multilateralism and a rules-based global order.

- **A Europe fit for the digital age**
  The EU’s digital strategy will empower people with a new generation of technologies.

- **Promoting our European way of life**
  Europe must protect the rule of law if it is to stand up for justice and the EU’s core values.

- **An economy that works for people**
  The EU must create a more attractive investment environment, and grow that creates quality jobs, especially for young people and small businesses.

- **A new push for European democracy**
  We need to give Europeans a bigger say and protect our democracy from external interference such as disinformation and online hate messages.

Creating a single European market for data

European Data Strategy
- Published Feb 2020
- *Genuine* internal data market
- Built on EU values and rules

A cross-sectoral legislative framework
- [Data Governance Act](#) – July 2022
- [Data Act](#) – Proposal Feb 2022
- [Implementing Act on High-value datasets](#) (Open Data Directive) – December 2022

Common European data spaces
- [Staff Working Document – Feb 2022](#)
  - Overview development data spaces, at request European Council
  - ✓ Horizontal aspects (concept, legislation, EU programmes/funding)
  - ✓ Sectoral/domain-specific initiatives
The European Data strategy

**EU Data Strategy**

**Cloud actions:**
- Cloud Rulebook
- Co-Investments in cloud-to-edge services, cloud federation and marketplaces.

**Data actions:**
- New legislation (Data Act, Data Governance Act, etc.)
- Co-investments in common European data Spaces

**Coordination**

**DIGITAL EUROPE**
**HORIZON EUROPE PROGRAMMES**

**Use cases; technical architecture**

**Support Centre**
**Coordination and governance**

**Common European data spaces**

**Federation & interoperability standards**

**Complementing & integrating private and public initiatives, e.g.:**

- European Alliance for Industrial Data, Edge and Cloud
- IPCEI* on Next Generation Cloud (*Important Project of Common European Interest)
- European Commission
Common European data spaces

Data Spaces Support Centre (dssc.eu)
- Coordinating the development of data spaces
- Assuring common standards and interoperability

Technical infrastructure for data spaces
- Edge & cloud Services
- Smart Middleware solutions (Simpl)
- Marketplace
- High-Performance Computing
- AI on demand platform
- AI Testing and Experimentation Facilities

- Driven by stakeholders
- Rich pool of data of varying degree of openness
- Sectoral data governance (contracts, licenses, access rights, usage rights)
- Technical tools for data pooling and sharing

High Value Datasets from public sector
+ other sectors / domains
c) call for better exploiting the potential of data and digital technologies for the benefit of society, the environment and the economy, while upholding relevant data protection, privacy and other fundamental rights and ensuring the retention of data necessary for law enforcement and judicial authorities to exercise their lawful powers to combat serious crime; we recognise the need to accelerate the creation of common data spaces, including ensuring the access to and interoperability of data; we look forward to the Commission’s proposal for a regulatory framework for Artificial Intelligence, and the accompanying review of the coordinated plan, to accelerate the uptake of this technology while ensuring safety and full respect of fundamental rights; we invite the Commission to swiftly present the progress made and the remaining measures necessary to establish the sectoral data spaces announced in the European strategy for data of February 2020;
The creation of **EU-wide common, interoperable data spaces** in strategic sectors aims at **overcoming legal and technical barriers to data sharing** by combining the necessary tools and infrastructures and addressing issues of trust by way of common rules.

A common European data space **brings together** relevant **data infrastructures and governance frameworks** in order to facilitate data pooling and sharing.
Key characteristics of a data space

- A secure and privacy-preserving IT infrastructure to pool, access, process, use and share data.

- A data governance mechanism, comprising a set of rules of administrative and contractual nature that determine the rights to access, process, use and share data in a trustful, transparent manner and in compliance with existing legislations.

- Data holders are in control of who can have access to their data, for which purpose and under which conditions it can be used.

- Presence of vast amounts of data that are made available on a voluntary basis and can be reused against remuneration or for free, depending on the data holder’s decision.

- Participation by an open number of organisations/individuals in full respect of competition rules and ensuring non-discriminatory access for all participants.
A data lake is a repository that allows to store structured and unstructured data at any scale. You can store your data as-is, without having to first structure the data, and run different types of analytics — from dashboards and visualizations to big data processing, real-time analytics, and machine learning to guide better decisions.

If you have access to the data lake, you have access to all the data contained in it.
A data space can be defined as a federated data ecosystem based on shared policies and rules. The users of such data spaces are enabled to access data in a secure, transparent, trusted, easy and unified fashion.

Data holders are in control of who can have access to their data, for which purpose and under which conditions it can be used.

From a technical perspective, a data space can be seen as a data integration concept which does not require common database schemas and physical data integration, but is rather based on distributed data stores and integration on an “as needed” basis.
Data spaces = data infrastructures + governance frameworks

**Current situation**
One to one sector-specific data sharing based on contractual agreements.

**Taking shape**
Data sharing infrastructures with centralized data hosting, and/or data marketplaces to enable discovery and reduce transaction costs where data is not held in a central repository.

**Data space**
Links are created between data space participants. Federated data is stored in a distributed manner with tools to enable discovery, access, and analysis across industries, companies, and entities.
Evolution of data spaces

Legend:
Roles: ● Participant (Data Provider | Data User); 〇 Data intermediary.
Data Exchanges: — Payload data incl. metadata between participants; —— Metadata between participant and federator; ——— Metadata between federators.
Ecosystems: ○ Closed; ◌ Open.
Role EC in supporting the creation of data spaces

**Bring stakeholders together** with a common EU data policy

**Support the Commission in:**

- **Issuing guidelines** to facilitate the development of the common European data spaces
- Identifying the relevant standards and interoperability requirements for cross-sector data sharing

**EU financial contribution** (notably DIGITAL) to deploy common European data spaces as European digital infrastructures in specific sectors/domains

**Ensure TRUST** in data transactions, e.g. neutral data intermediaries

**Ensure FAIRNESS** in the allocation of data value among the actors of the data economy

**European Data Innovation Board (EDIB)**

**Data Governance Act**

**Data Act**

**Offer a technical solution**

**Simpl Smart Middleware**

**DIGIT building blocks**

**Work with stakeholders**

**Funding**
### Funding – Data Spaces in DIGITAL

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<th>Green Deal</th>
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<td>Language</td>
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Funding – Data Spaces and infrastructure in DIGITAL

- Bring together stakeholders.
- Identify the data infrastructure needs
- Build the data spaces

- Technical building blocks
  Simpl Smart Middleware

- Edge and cloud services

- European Data Spaces Technical Framework

- Data Spaces Support Centre (DSSC)

- Sectoral Data Spaces

- Marketplace
Apart from EU policy and legislation on data, the Commission offers technical building blocks to create data spaces in a harmonised manner.

Choose your Building Block

A Building Block is an open and reusable digital solution. It can take the shape of a framework, a standard, a software, or a software as a service (SaaS), or any combination thereof.

Building Blocks are endorsed by the European Commission and ensure that your digital service will be fully compatible with others on the market. We offer support and guidance on your journey to an interoperable, EU-compliant final product. What’s your challenge?

- **eDelivery**
  Exchange electronic data and documents in an interoperable and secure way
  [Learn more](#)

- **eID**
  Offer services capable of electronically identifying users across Europe
  [Learn more](#)

- **Once-Only Technical System (OOTS)**
  Reduce administrative burden on citizens and businesses
  [Learn more](#)

- **eSignature**
  Create and verify electronic, paperless signatures
  [Learn more](#)

- **eInvoicing**
  Send and receive electronic invoices with automated processing, in line with the European standard
  [Learn more](#)
Offer a technical solution – Simpl Smart Middleware

Simple deployment, easy to use and extend

Simple

Build security, trust, confidence and compliance with regulations into the system.

Secure

Allow to monitor its environmental performance and add new users without affecting performance

Green, scalable and elastic

Ensure that data sets and their infrastructures can be seamlessly interconnected and made interoperable.

Interconnection and interoperability

Allow for insights into all parts of the architecture (without any proprietary claims)

Open source

Allow the replacement or addition of components without affecting the rest of the system.

Smart And modular

Simpl will enable cloud-to-edge federations and support the common European data spaces
Data Spaces Support Centre – key features

- Coordination and Support Action
- Project duration: 42 months
- Start date: 01/10/2022
- End date: 31/03/2026
- Consortium of 12 partners
- Coordination: Fraunhofer (DE)
- 16 associated partners
- Budget: 14 mln euros
- 100% funded by the DIGITAL Europe programme
Consortium members
Data Spaces Support Centre – dssc.eu

Associated and collaboration partners
OVERALL MISSION

- Create a **network of stakeholders** and **community of practice**
- Provide tools to address **organisational and technical matters** required for every data space
- This includes a **blueprint, building blocks**, best practices, common standards, reference implementations and identification of **data governance models**
- Provide **support** and enable data spaces to focus on their domain-specific business challenges
- Enable data spaces to reach a higher flight level faster: **quick start** and an **accelerated scale-up**

SPECIAL FOCUS ON INTEROPERABILITY

- Ensure that participants of one data space can also **participate in other** European data spaces
- Can only be achieved if data spaces conform to certain **standards**, which will be part of the DSSC blueprint

GENERAL

- Create **economies of scale** and **synergies** on a European level for the development of common European data spaces
# DSSC – Network of Stakeholders

| Community of Practice | • DIGITAL Data Space initiatives and sectoral/domain specific Coordination and Support Actions.  
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<th>• SIMPL and building blocks implementers</th>
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<tbody>
<tr>
<td>Strategic Stakeholder Forum</td>
<td>• Think-and-do-tank to continuously deliver on the policy objectives and market needs</td>
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<tr>
<td>Collaboration with relevant initiatives and Stakeholders</td>
<td>• Public Sector Open Data for AI and Open Data Platform, the Cloud-to-Edge infrastructure and services projects, AI initiatives, EDIHs, Hubs, Advanced Digital Skill initiatives, EuroHPC, Research projects (H2020, HE), space programmes, partnerships, Standardisation Bodies and organisations, National initiatives, Industry and SME associations, international initiatives, etc</td>
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| Collaboration with EDIB and Policymakers | • EDIB (European Data Innovation Board)  
|                                          | • Relevant policymakers to enable a steadily and potentially iteratively evolving regulatory and policy environment for the data spaces |
DSSC – Community of Practice

- Green Deal
- Agriculture
- Energy
- Skills
- Tourism
- Smart communities
- Mobility
- Health
- Manufacturing
- Language
- Cultural Heritage

- Europeana
- EUCAIM
- GREAT
- DATA SPACE
- TOURISM DATA SPACE
- AGRI DATASPACE
- PREP.DSPACE4MOBILITY
- DATES

- Cultural Heritage Data Space (EUROPEANA, DS4CH)
- European Federation for Cancer Images (EUCAIM)
- Cultural Heritage
- Health
- Health (Genomics)
- Interoperability Network for the Energy Transition (IntNET)
- Energy
- Language Data Space (LDS)
- Cultural Heritage
- Agriculture
- Green Deal
- Manufacturing
- Mobility
- Skills
- Language
- Smart Communities Data Space (DS4S5CC)
- Tourism Data Space (DATES)
- Tourism DataSpace (DSFT)

- Smart Cities
- Tourism
- Tourism
Data Spaces Support Centre – Assets

**Definition:** An open resource managed by the Data Spaces Support Centre that can be used to develop, deploy and operationalize data spaces and to enable the knowledge sharing around data spaces.

List of assets (in the pipeline):

- Starter Kit
- Glossary
- Building Blocks
- Blueprint
- Radar/Data Spaces Inventory
- Community of Practice
- Overall network of Stakeholders

Other assets:

- DSSC platform, events, Data Space Design principles, Conceptual Model
What is the Starter Kit?

- Starting point for data spaces that guides to relevant community resources and DSSC material that will be made available

Content

- A 'quick start' to data spaces
  - Start-up checklist following BLOFT framework (business, legal and governance, operational, functionality and technology)
  - DSSC support references
  - Resource inventories

What is it not?

- Not a moderated package – for instance, list of available and known resources but no evaluation of maturity of the solutions
- Not a textbook, cookbook, or guidebook
- Does not provide a blueprint for developing data spaces

Information gathering and finalization

- Community Process: workshop, survey and interview methodologies

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<tr>
<th>Release Interim Version</th>
<th>Final Release</th>
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| Dec 22                  | Mar 23       

Download the Starter Kit on the [DSSC-Website](#)
Common European data space actors

Data Spaces Support Centre (DSSC)
- coordination of all relevant actions on sectoral data spaces in Europe
- blueprint, best practices, common standards, support activities and knowledge transfer
- funded by the DIGITAL Europe Programme

Data Space Coordination and Support Actions (CSAs)
- for sectoral/domain-specific data spaces
- community of practice, priority datasets, stakeholder engagement, governance/business models, roadmap
- funded by the DIGITAL Europe Programme

European Data Innovation Board (EDIB)
- Consultative and advisory body established by the Data Governance Act, to be set up in September 2023
- guidelines for interoperability of common European data spaces
The Commission shall establish a European Data Innovation Board in the form of an expert group, consisting of representatives of the competent authorities for data intermediation services and the competent authorities for the registration of data altruism organisations of all Member States, the European Data Protection Board, the European Data Protection Supervisor, ENISA, the Commission, the EU SME Envoy or a representative appointed by the network of SME envoys, and other representatives of relevant bodies in specific sectors as well as bodies with specific expertise. In its appointments of individual experts, the Commission shall aim to achieve gender and geographical balance among the members of the expert group.
The European Data Innovation Board shall consist of at least the following three subgroups:

(a) a subgroup composed of the competent authorities for data intermediation services and the competent authorities for the registration of data altruism organisations, with a view to carrying out the tasks pursuant to Article 30, points (a), (c), (j) and (k);

(b) a subgroup for technical discussions on standardisation, portability and interoperability pursuant to Article 30, points (f) and (g);

(c) a subgroup for stakeholder involvement composed of relevant representatives from industry, research, academia, civil society, standardisation organisations, relevant common European data spaces and other relevant stakeholders and third parties advising the European Data Innovation Board on tasks pursuant to Article 30, points (d), (e), (f), (g) and (h).
EDIB – Tasks
See Article 30 from the Data Governance Act

- **advise and assist the Commission**
  - **... developing a consistent practice**
    - (a) of Chapter II competent bodies
    - (b) for data altruism across the Union
    - (c) of competent authorities (for data intermediaries & data altruism orgs)
  - **... developing consistent guidelines**
    - (d) for data altruism across the Union
    - (e) of competent authorities (for data intermediaries & data altruism orgs)
  - **... taking into account the input from standardisation organisations**
    - (f) on prioritising cross-sectoral standards
    - (g) in addressing fragmentation of the internal market → aim of encouraging the creation of common European data spaces
  - **(k) ... evaluating whether the implementing acts are to be adopted**
  - **(l) ... developing the European data altruism consent**
  - **(m) ... improving the international regulatory environment (including standardisation) for non-personal data**

- **propose guidelines**
  - (h) ... for common European data spaces

- **facilitate cooperation between**
  - (i) ... Member States with regard to setting harmonised conditions for Chapter II
  - (j) ... competent authorities (for data intermediaries & data altruism orgs)
Thank you for your attention

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European Commission
Questions & Answers
Stay up-to-date on our 2023 activities!

• **Webinar series** dedicated to **use cases** continued – 26 May, 'Stories of Use Cases: Open Data and a new push for European democracy'

• **New webinar series** on **data spaces** and open data – **to be continued**

• **Webinar series** dedicated to the **Open Data Maturity dimensions** – **To be continued during July**
Please provide your feedback!
Thank you