Data Spaces for Manufacturing: the AI REGIO project

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Advances in IOT and related Technologies
To exchange views and learn from each other experiences, on what activities are running in EU and within the different countries.

To identify present and future challenges to be addressed and to provide input for policy-makers at EU and member states level.
EUROPEAN STRATEGY FOR DATA

Data spaces in key sectors

- Manufacturing
- Green
- Mobility
- Health
- Finance
- Energy
- Agriculture
- Public Administration
- Skills

European Data Space

- FAIR, High Value pools of Data
- Infrastructure to use and exchange data
- Appropriate governance models / mechanisms

How to realize?

www.internationaldataspaces.org
Embryonic Data Spaces in Smart Manufacturing Industry ecosystem

The EC viewpoint

Matthias Kuom
Connected Factories pathways & Data Spaces
Manufacturing Data Spaces: two scenarios

Agile supply chain management and execution by continuously monitoring and exchanging status data across the value chain.

Dynamic asset management and predictive/prescriptive maintenance by continuously monitoring and exchanging industrial data.

Example inspired by SECOIIA.
BDVA Data Sharing Space: the value Wheel

Figure 1 The Data Sharing Value ‘Wheel’ - core pillars and principles of the envisioned European-governed Data Sharing Space that generate value for all sectors of society.
Embryonic Data Spaces
In Smart Manufacturing
Industry ecosystem

The IDS viewpoint
and the OPEN DEI Task Force 1

Silvia Castellví – Stakeholder Engagement Senior Consultant
IDSA /OPEN DEI
Cap Gemini study: Data powered Enterprises

Figure 5: US, Germany and UK top the charts in data-driven decision making

Decision making in our organization is completely data-driven

Source: Capgemini Research Institute, Data-powered enterprises survey, August 2020, N=1,004 organizations.
Cap Gemini study: Data powered Enterprises

Figure 4: Banking, insurance, and telecom sectors lead in data-driven decision making

Decision making in our organization is completely data-driven

Source: Capgemini Research Institute, Data-powered enterprises survey, August 2020, N=1,004 organizations.
EC study: Barriers to Data Sharing and Reuse

Data Sharing obstacles

- Licensing (19%): Difficulty to find the suitable means to license data
- Reputation (19%): Fear of reputational costs related to data inaccuracy or misuse
- Localization (27%): Data localization restrictions (e.g., legislation, practices) in place
- Skills (38%): Lack of skilled data workers inside the company
- Monitoring (42%): Difficulties to control usage of the data by others
- Liability (15%): Uncertainty about liability costs in case of damage caused by the data shared
- Technical (73%): Interoperability barriers, safety and security requirements, curator and infrastructure costs, etc.

Data Reuse obstacles

- 58% do not re-use data
- 42% re-use data
- 59% face obstacles

Data Sharing

- 61% do not share data
- 39% share data
- 52% face obstacles

Figure 54. Companies engaged in B2B data sharing and experiencing obstacles

Figure 55. Companies re-using data and experiencing obstacles
Cap Gemini study: Data driven Transformation
Data Spaces for Manufacturing Pathway

**1. No Data Control**
Data are generated, processed and visualised by closed CPPS and I4.0 systems.

**2. Data Silos**
- (Smart Autonomous Factory) Data is locked in SCADA, MES, ERP enterprise applications.
- (Collaborative Product-Service Factories) Data is locked in CAD, PDM, PLM enterprise applications.
- (Hyperconnected Factories) Data is locked in ERP SCM CRM enterprise applications.

**3. Data Bridges**
- Ad-hoc Data Bridges are created between Enterprise Applications for specific purposes.
- Heterogeneous Data Sources integrated on a case-by-case basis.

**4. Data Interoperability**
- Data Interoperability by design, standard data models and ontologies adoption.
- Industrial Data Platforms for Data Processing and Sharing.
- Data Governance models for Data Sovereignty / GDPR.

**5. Data Valorisation**
- Data Economy take-up, Data-driven Innovative Business Models.
- Open Data Ecosystems in Didactic Factories and Experimental Facilities.
- Flexible cross-sector Manufacturing Data Marketplaces.

Pathways to digitalisation of manufacturing.
The AI REGIO Data Pipeline for Quality
Thank you!

Find more:
https://www.opendei.eu/
https://www.effra.eu/connectedfactories
https://kyklos40project.eu/