



# The core of TRUSTS

## *Trusted Secure Data Sharing Space*

Innovating European data markets through trust, security, and federation

29 October 2020



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 871481

# Content of today's webinar

Martin Kaltenböck (SWC)	<b>1. Welcome &amp; Introduction</b>
Peter A. Bruck (DIO)	<b>2. European Data Strategy &amp; Austrian perspective on TRUSTS</b>
Natalia Simon (IDSA)	<b>3. A market study of data markets</b>
Ioannis Markopoulos (Forthnet)	<b>4. Creating innovative data ecosystems</b>
Bert Utermark (G1)	<b>5. Operator business model options in a federated TRUSTS data ecosystem</b>
Charlotte Ducuing (KU Leuven)	<b>6. Legal and ethical pillars of TRUSTS</b>
Benjamin Heitmann (FhG)	<b>7. Technical foundation of TRUSTS to enable and maintain data sovereignty</b>
Silvia Castellvi (IDSA)	<b>8. Future reach-out / stakeholder analysis</b>
Martin Kaltenböck (SWC)	<b>9. Closing</b>

**Notes:** The webinar will be recorded. Slides and recording will be provided ~1 week after the webinar. Please ask questions in the chat of webinar tool.

# TRUSTS - Trusted Secure Data Sharing Space

## ● Project Context

- Aims at developing a data sharing platform for secure, trustworthy, and GDPR-compliant data exchange
- Is based on 2 national data market projects (DMA and IDS)
- Will allow integration and adoption of future platforms in different legal systems

## ● Project Objectives

- Create a secure and trustworthy European Data market for personal and industrial use by connecting different user groups and providing generic functionalities for innovative applications and services
- Identify and overcome legal, ethical, and technical challenges of cross-border data markets to exploit full potential of European data economy ⇒ competitive advantage over China, the US, and others

# TRUSTS - Trusted Secure Data Sharing Space

- **3 use cases** in financial and telecommunications sector
  - Anti-Money Laundering Compliance
  - Agile Marketing through Data Correlation
  - Improved Customer Support Services by Data Acquisition
- TRUSTS technology and use cases accompanied by business considerations ⇒ project results are sustainable beyond duration of funding
- **Consortium** of 17 partners based in 9 countries:
  - Austria, Belgium, Cyprus, Germany, Greece, Israel, the Netherlands, Romania, and Spain
- TRUSTS brings together technology providers, data providers, research institutions, and multipliers
- Horizon 2020 project, Grant agreement ID: 871481, 01/01/2020 – 31/12/2022



# European Data Strategy & Austrian perspective on TRUSTS

Prof. Dr. Peter A. Bruck | CEO, Research Studios Austria Forschungsgesellschaft  
Data Intelligence Offensive, Austria

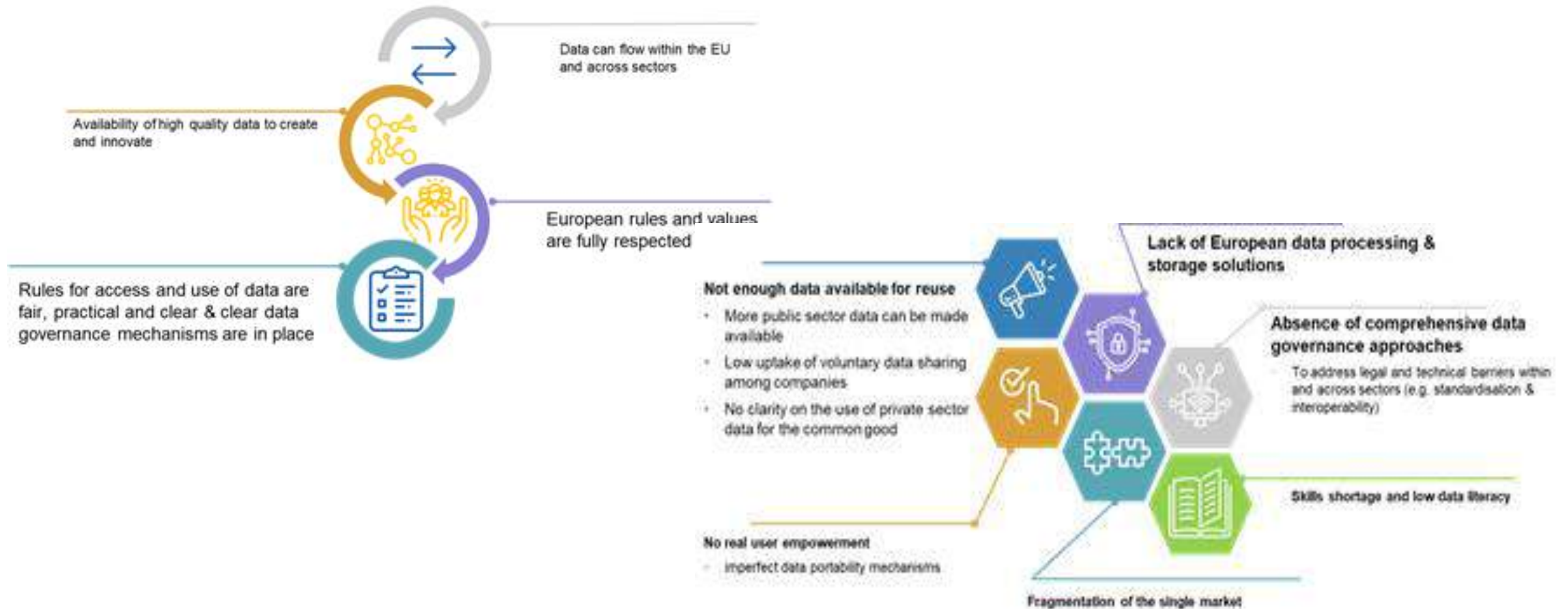
[www.dataintelligence.at](http://www.dataintelligence.at)



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# European Data Strategy: Single market, single space

## *Integration via rules, regulation and technology*





# European Commission: Deploying the Data Strategy

*4 pillars, 9 data spaces*



**A cross-sectoral governance framework for data access and use**  
including a legislative framework for the governance of European data spaces and other cross-sectoral measures for data access and use



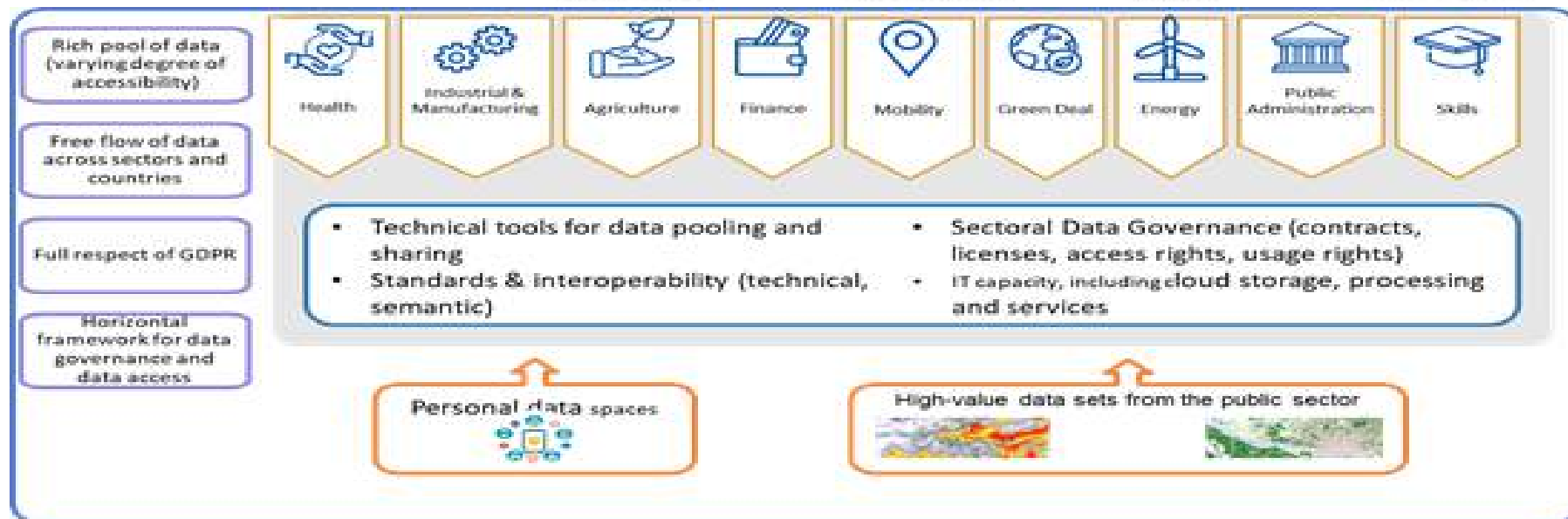
**Enablers**  
Total investments of € 4-6 billion in a High Impact Project on European data spaces and federated cloud infrastructures



**Competences**  
Empowering individuals, investing in digital skills & data literacy and in dedicated capacity building for SMEs.

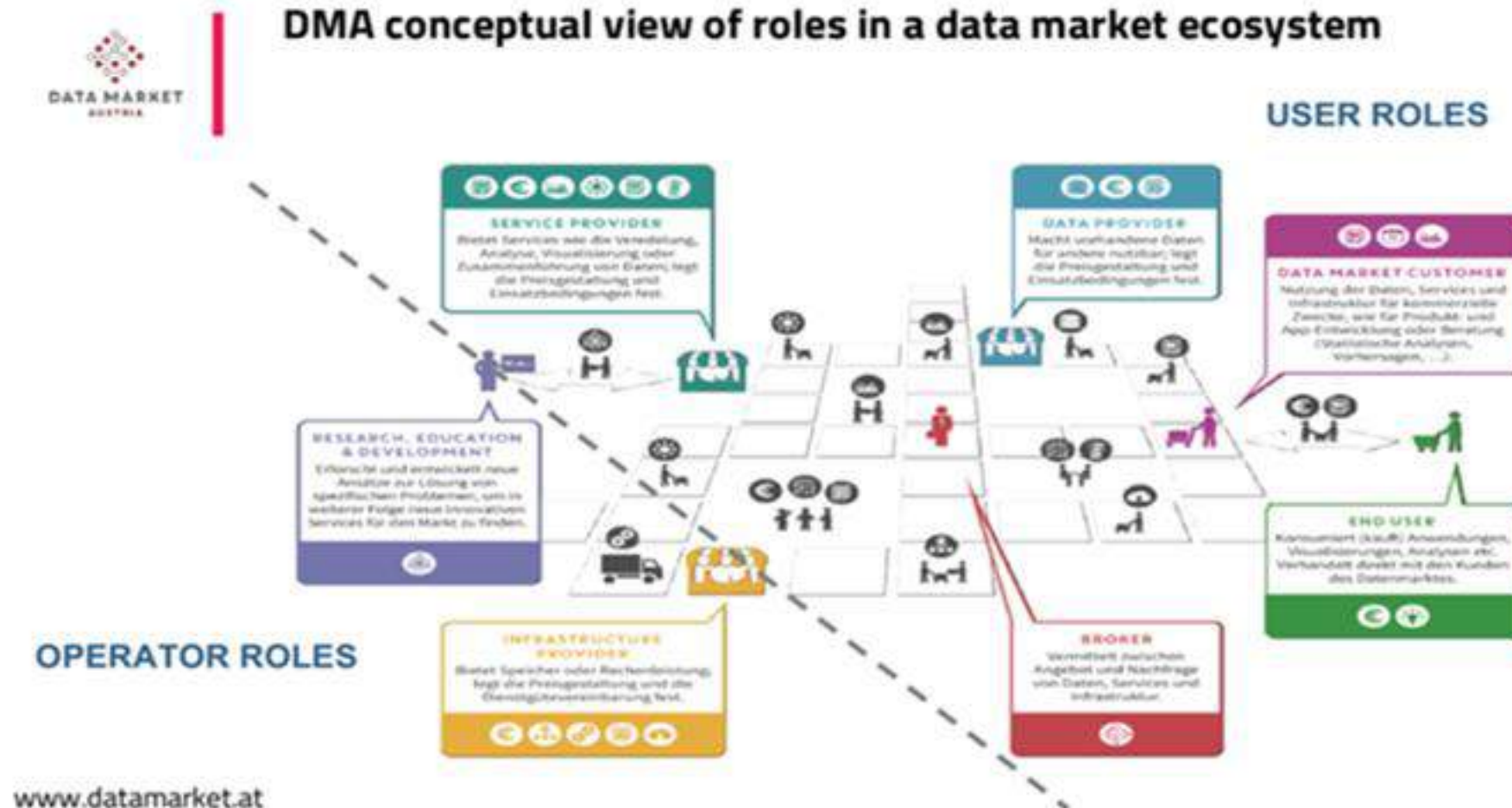


**Rollout of common European data spaces**  
in crucial economic sectors and domains of public interest, looking at data governance and practical arrangements.



# Austrian perspective: Data Market Austria

## *Learnings from the lighthouse project 2016-2019*





# Austrian perspective: Data Market Austria

## *Learnings from the lighthouse project 2016-2019*

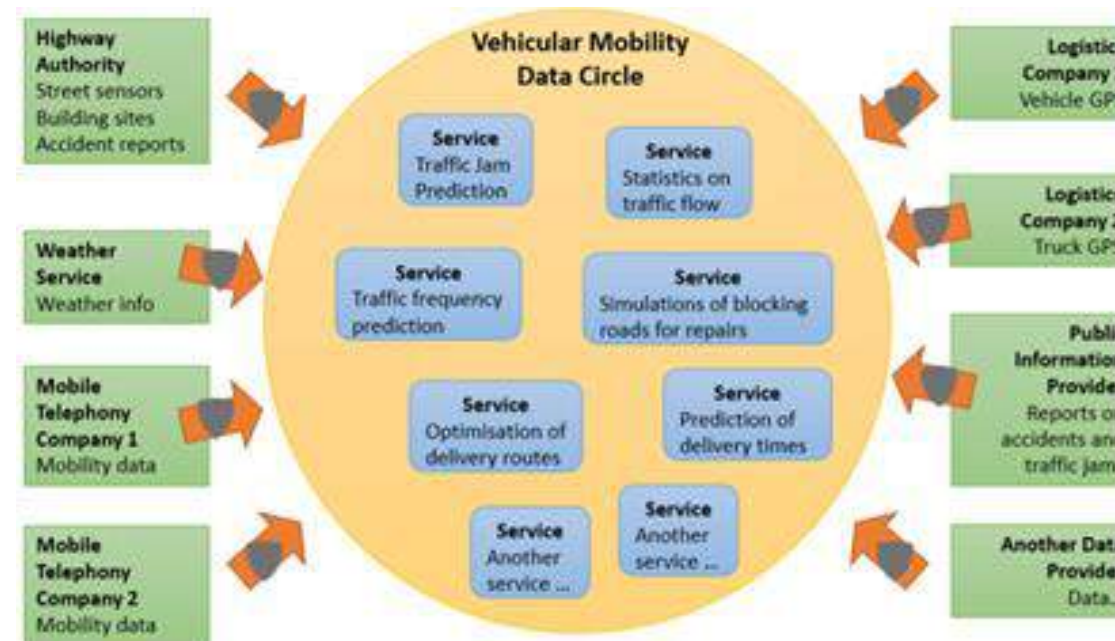
### 1. Very uneven understanding and readiness to work with data sharing and data exchange:

- It is a tech / CIO topic
- Safe use, secure rights, privacy rules, robust tech are key concerns
- Solutions not trusted, vendor lock in feared,
- Dominance of AWS, Azure, Google recognized

DIO

### 2. Need for practical examples, best practice cases for sharing and data exchange:

- Data Circles:



### 3. Importance of federated, European solutions for sharing and data exchange:

- EU Project TRUSTS:



# European Data Strategy

## Reference

European Commission, Directorate-General Communications Networks, Content and Technology

Slides built on PPP from Daniele Rizzi for DIO DIALOGUES, September 9 and 16, 2020

Unit G1 - Data Policy and Innovation within the Dialog series of workshops

## Further reference

<https://ec.europa.eu/digital-single-market/en/open-data>

<https://eur-lex.europa.eu/legal-content/EN/LSU/?uri=celex:32019L1024>

[https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-data-strategy\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-data-strategy_en)



# Study on Data Markets

Natalia Simon | International Data Spaces Association

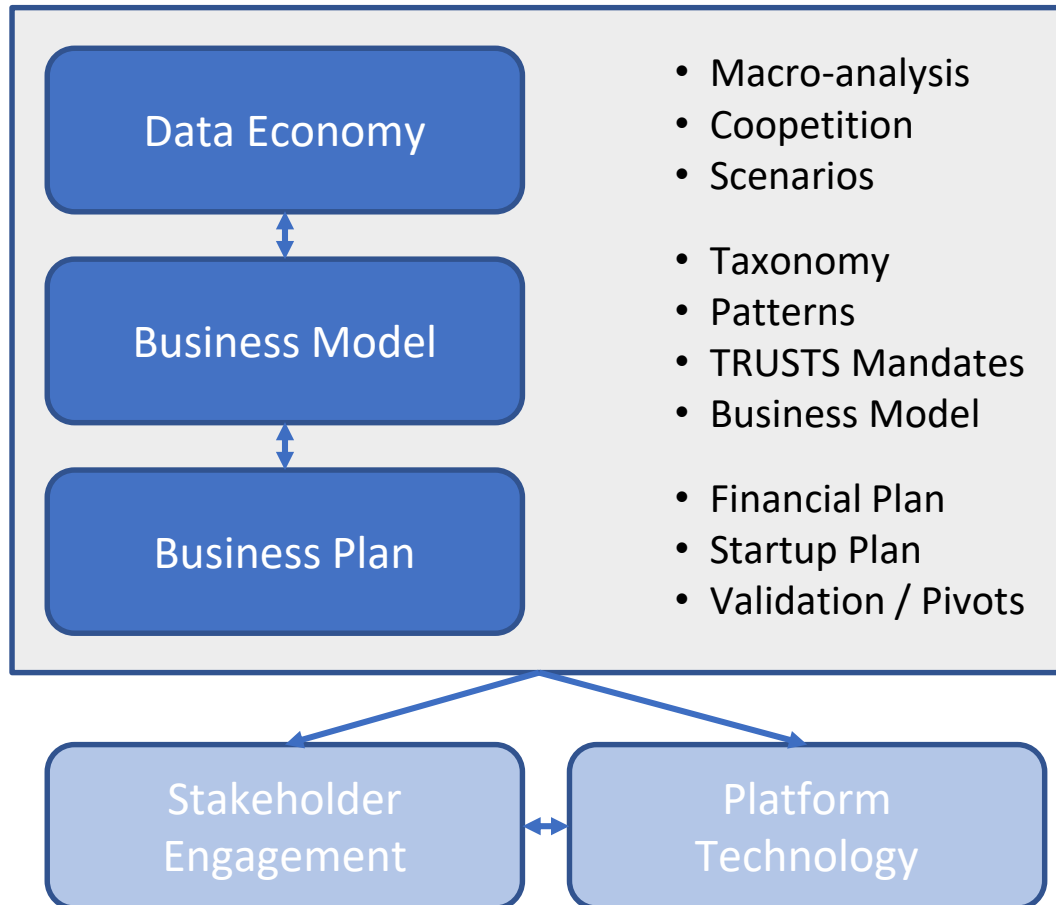
<https://www.internationaldataspaces.org/>



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# Context

## Project Interdependencies



## Purpose of the market study

- Build a common knowledge base
- Provide insights on current trends in the field of data markets
- Provide recommendations for the implementation of TRUSTS

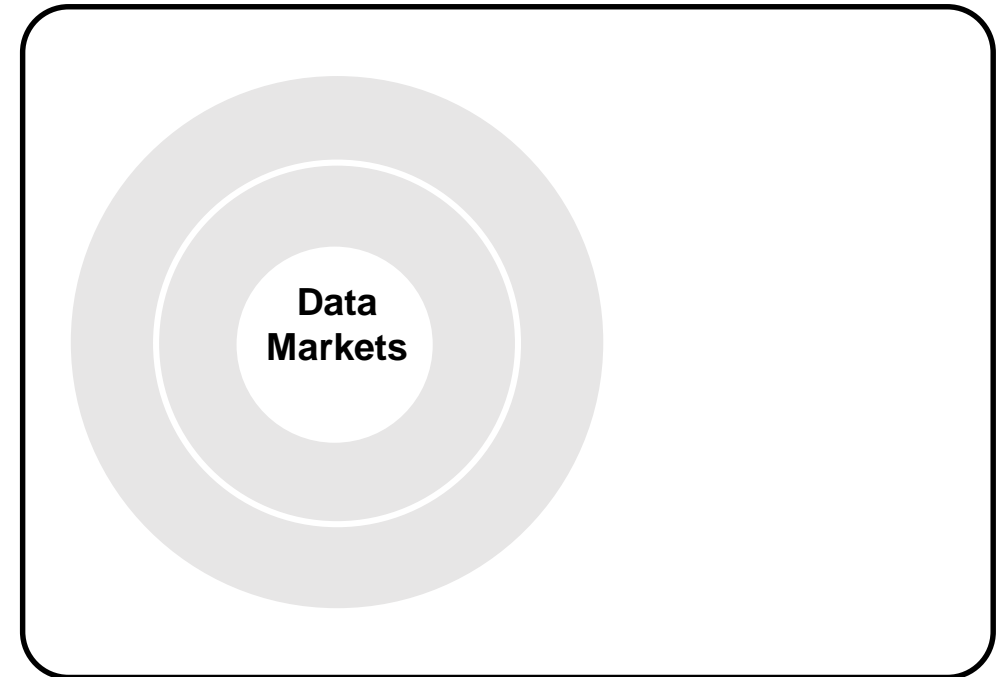
# Data markets and contemporary challenges

- Defining a X2B2X “data market”

*... an intermediary that matches data providers and data buyers, and that facilitates data exchange and financial transactions via features provided by data marketplace owners and third-party providers (TPPs).*

- Current challenges

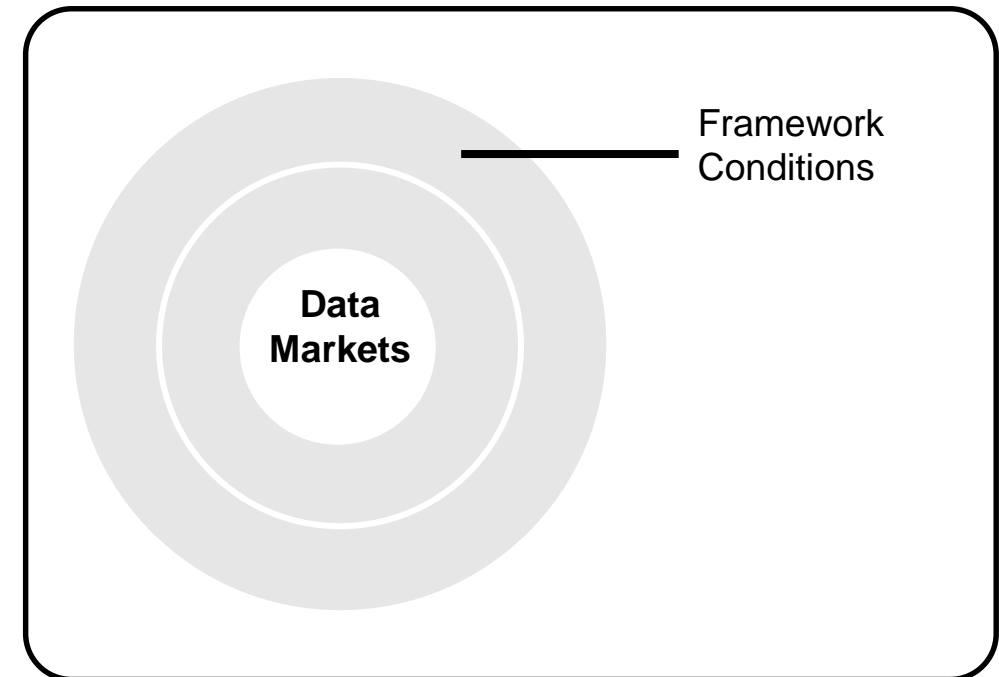
- Pricing mechanisms and data valuation
- Monetization schemes
- Control over data
- Data quality and integrity
- Privacy and security



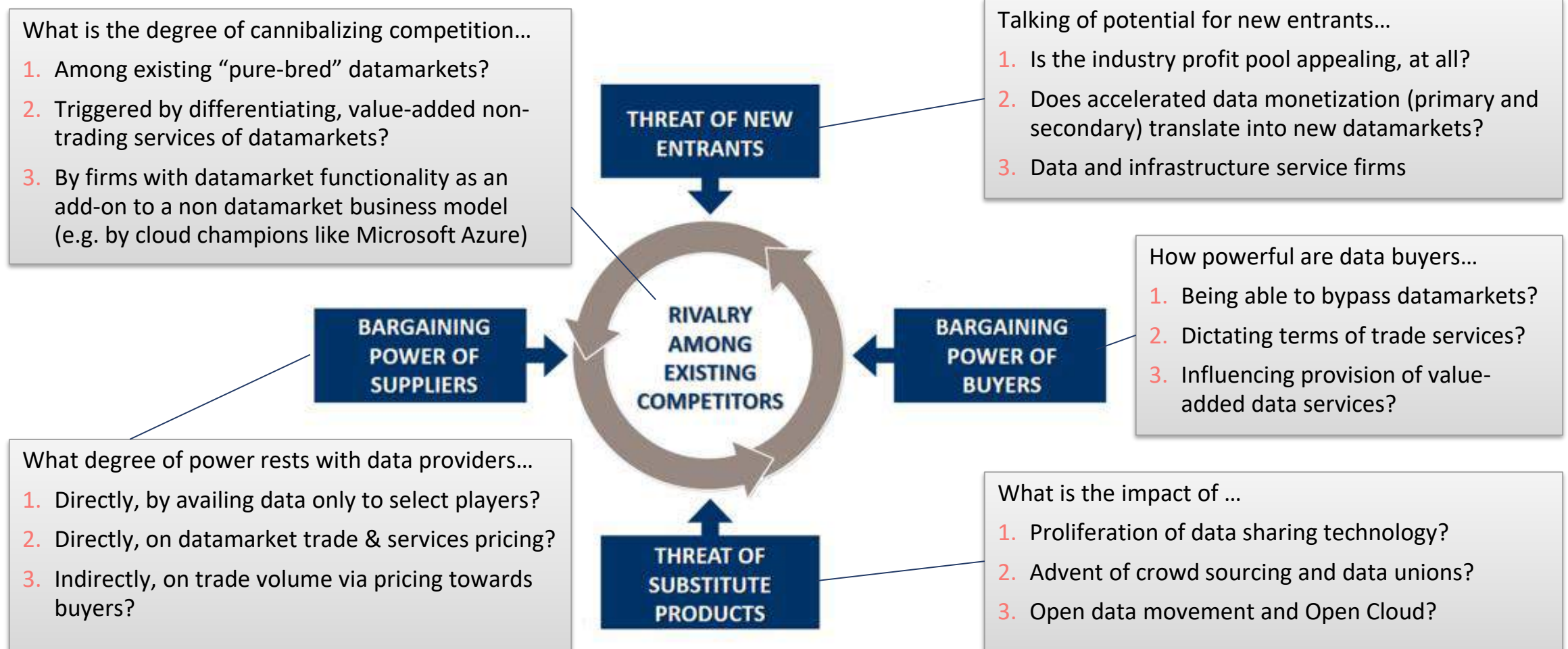


# Environment analysis of data markets

- European data strategy and its implementation
- Economical aspects
  - Emergence of data ecosystems
  - Expedited digitalization and AI
- Technological analysis
  - Architecture & infrastructure (centralized vs. federated)
  - Components and standards
  - Current trends
- Legal framework
  - Interjurisdictional regulations, contracting and enforceability

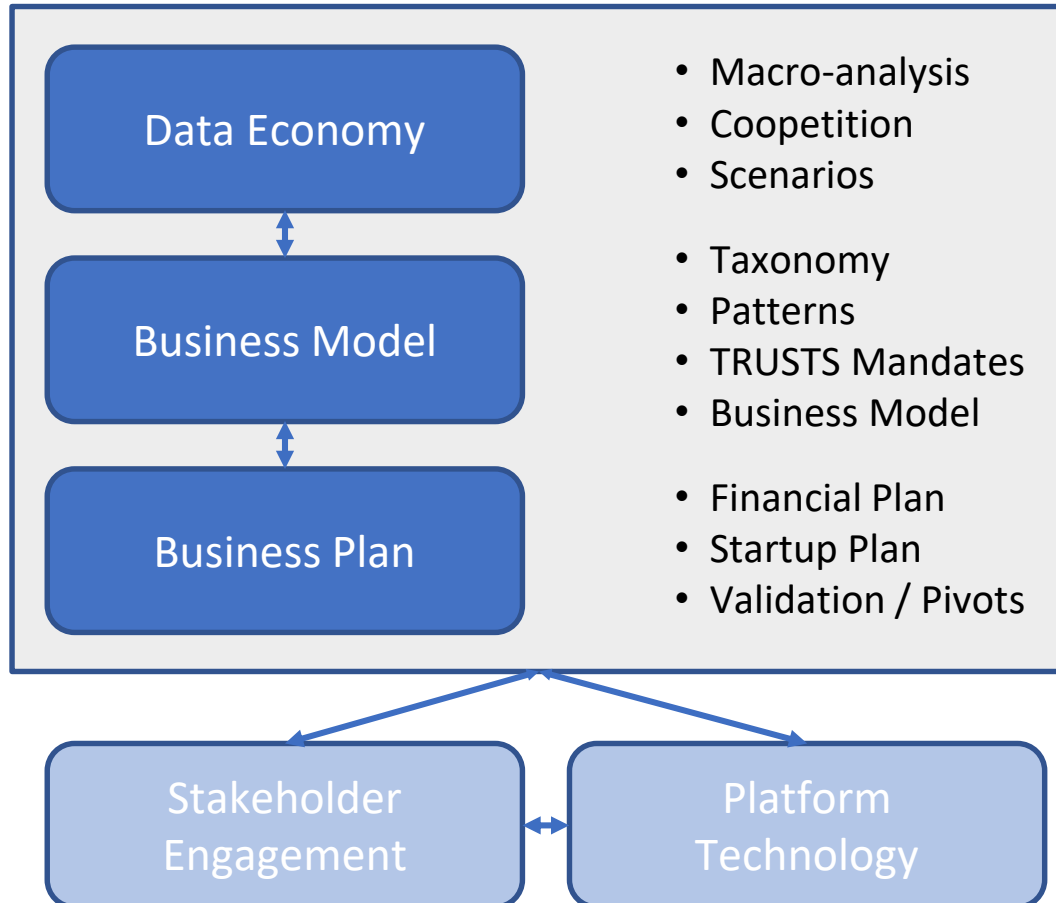


# Coopetition or competition?



# Getting engaged ...

## Project Interdependencies



## Collaboration platforms

- TRUSTS Advisory Board
- Focus Groups
- Workshops
- Regular Webinars
- Surveys

<https://www.trusts-data.eu/>



# Creating Innovative Data Ecosystems

**From vertical sectors to horizontal exchanges with trust-based technologies**

Ioannis Markopoulos | Forthnet

<https://www.nova.gr/el/epikoinwnia>



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# TRUSTS value add to the digital economy ecosystem



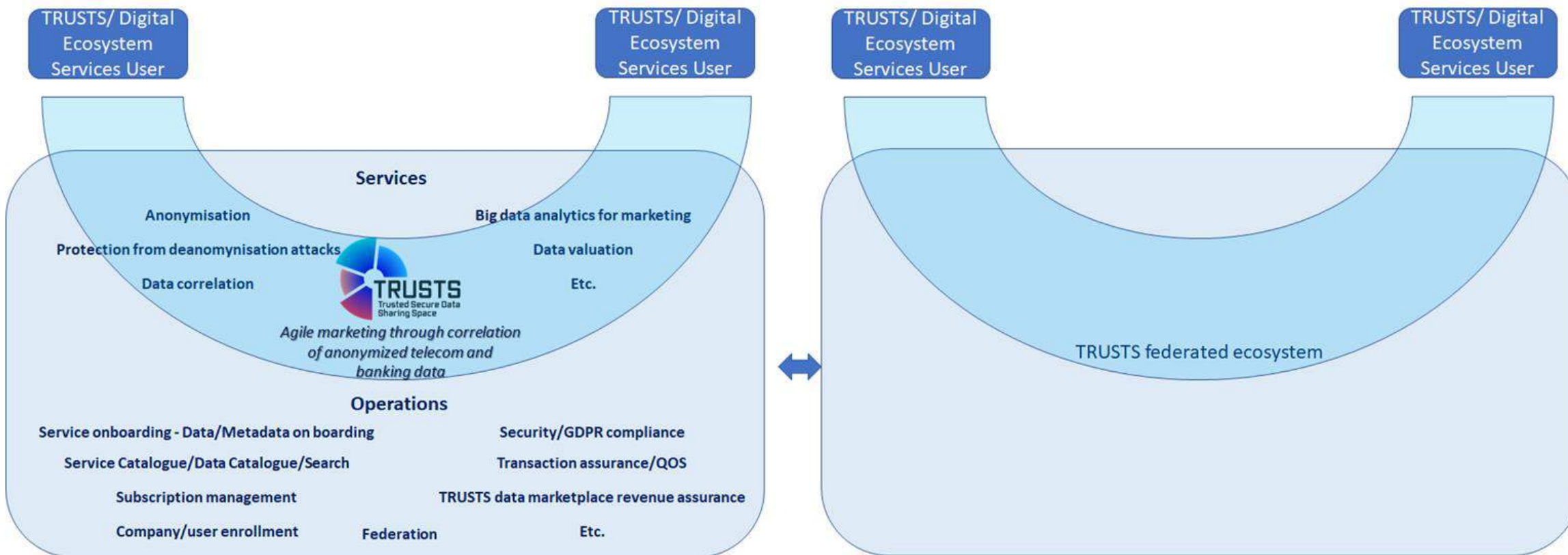
The lack of trusted and secure platforms and privacy-aware analytics methods for secure sharing of personal data and proprietary/commercial/industrial data hampers the creation of a data market and data economy by limiting data sharing mostly to open data. This trend will continue if different technical standards, quality levels, and legal aspects are allowed to diverge uncontrollably.

TRUSTS will ensure trust in the concept of data markets as a whole via its focus on developing a platform based on the experience of two large national projects (Data Market Austria and International Data Spaces), while allowing the integration and adoption of future platforms.

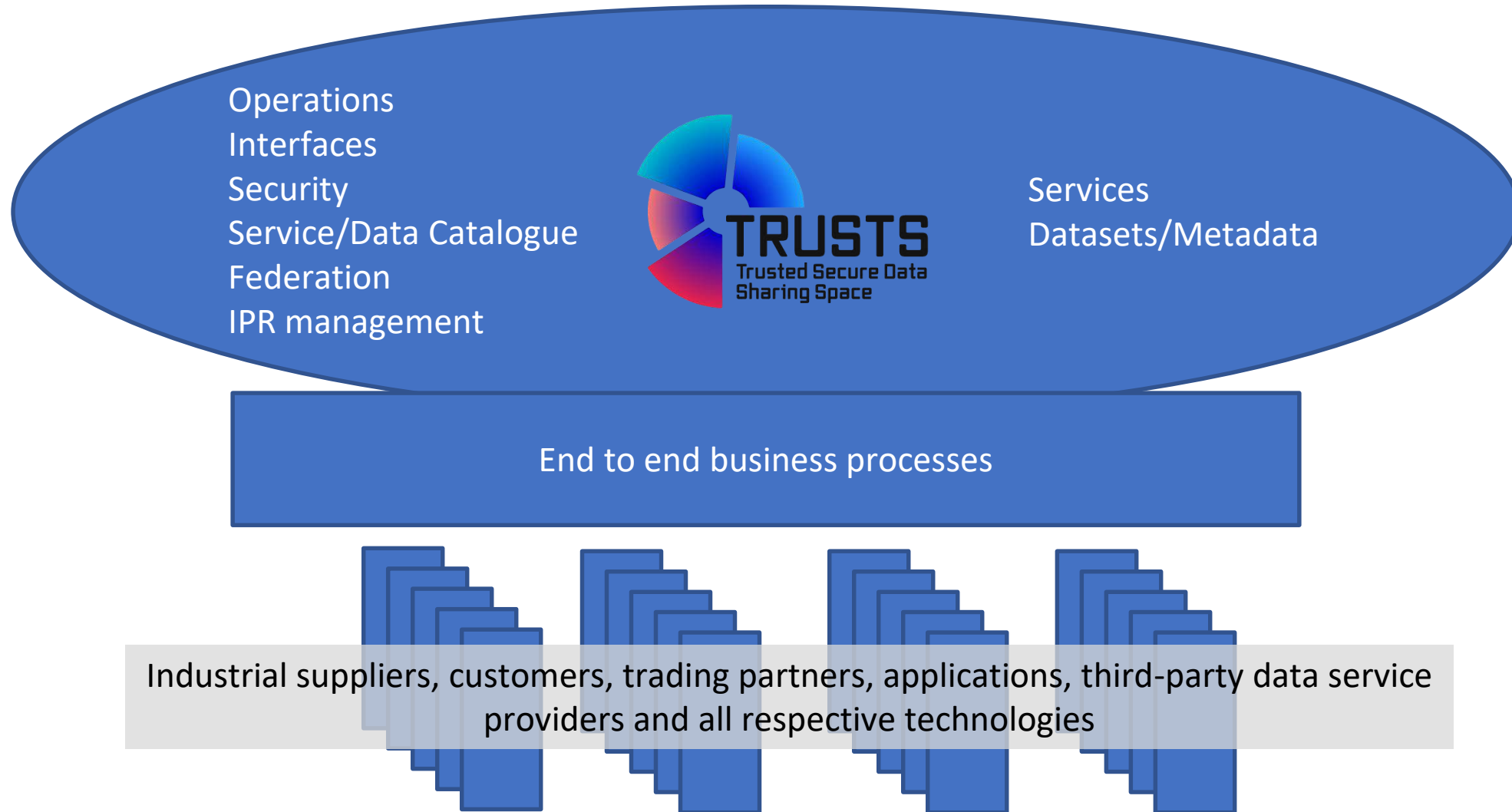
The TRUSTS platform will act independently and as a platform federator, while investigating the legal and ethical aspects that apply on the entire data valorification chain, from data providers to consumers.



# TRUSTS vision



# TRUSTS innovation





# TRUSTS Business Model Development

Bert Utermark | Governance One

<http://www.governance.one/>



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# Roles of TRUSTS

## Select TRUSTS project mandates

“Build a datamarket for B2C and B2B”  
(with certain leading-edge technical attributes)

“Leverage existing datamarket project experience  
of TRUSTS partners (IDS, DMA) and interoperate  
with current and future datamarkets”

“Make a sustainable impact on the EU data economy  
supporting the European Data Strategy”

## 3 business roles of TRUSTS

**Datamarket**

**Datamarket Federator  
(Meta-Market)**

**Ecosystem Facilitator**

# Data business model archetypes



## Primary Data Business Model Archetypes

Product	Selling of Data
Service	Processing of Data
Trade	Connecting Data & Services Vendors & Buyers

## Secondary Data Business Model Archetypes

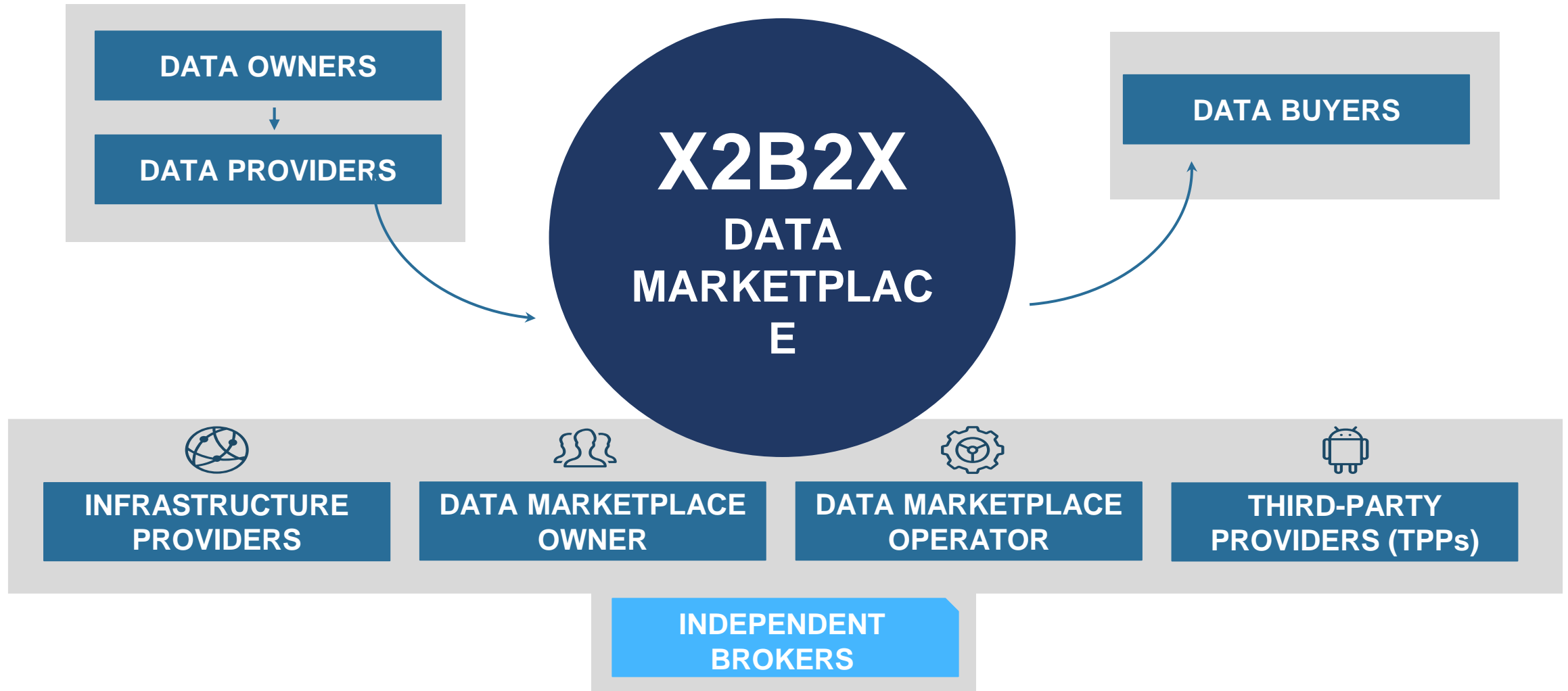
Brokerage	Data Trade as a Service
Subscription	Productized / Semi-automated Data Services
Marketplace	Productized Data Trade on a Platform
	Self-Service Platform

## Ecosystem

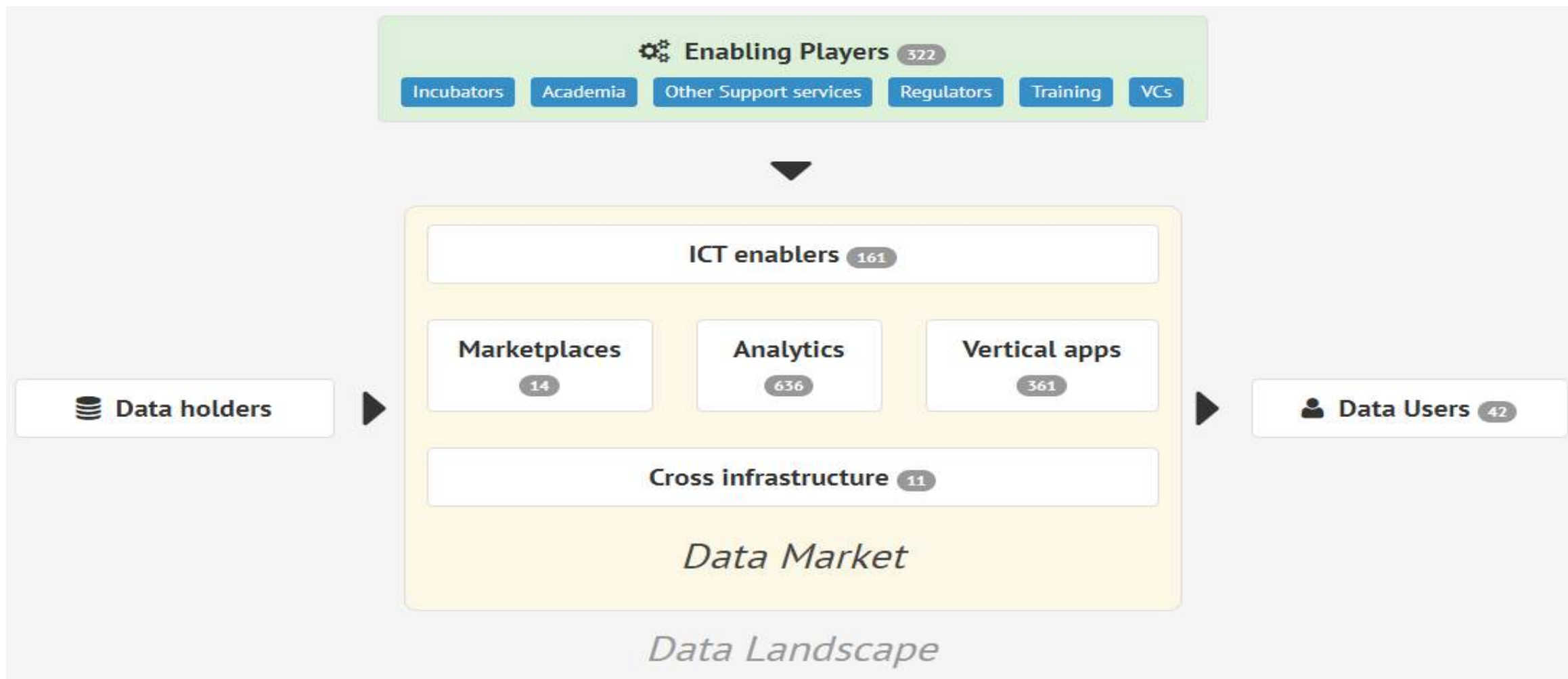
Federated platform and incubator for data & data solution businesses, combining all data business model archetypes across players



# Datamarket concept



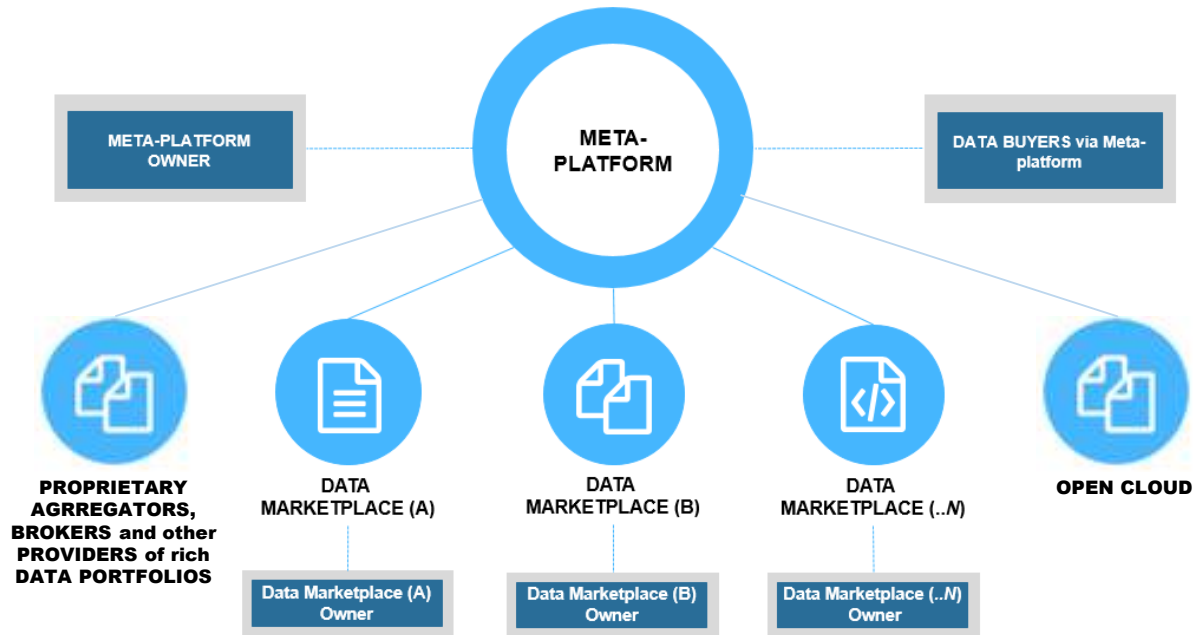
# Ecosystem snapshot



Source: <https://datalandscape.eu/eu-data-landscape> (as of Oct-20-2020)

# TRUSTS: more than a datamarket

## Datamarket federator: architecture



- Hierarchical meta-platform as starting point
- Enablement of interoperable with industrial data clouds
- Emergence of P2P federation structure in the future

## Ecosystem facilitator: illustrative options

- ... a champion among datamarkets/ select aspects, propagating federatedness: leading the way by example?
- ... an evangelist industry association of European datamarkets and data-rich data providers: driving open standards and shaping policy?
- ... an innovation hub, providing experimental environment(s) and brokerage of associated services?



Ultimately, TRUSTS needs to match ambition with coopetition realities and emerging clarity around/ manifestation of the European Data Strategy



# Legal & ethical pillar

Charlotte Ducuing, Yuliya Miadzvetskaya and Lidia Dutkiewicz | CiTiP – KU Leuven

<https://www.law.kuleuven.be/citip/en>



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# Challenges & Objectives

- Data markets as a new data exchange mechanism: not anticipated by the law (yet), especially when personal data are processed!
  - Commodification of data >< context-specific legal regulations
  - Legal regulation as an obstacle to scalability of data markets?
  - Emergence of new intermediary roles allocation of legal responsibilities?
  - Significant role of 'techno-regulation', e.g. data sovereignty, smart contracts supplementary role to this of the law?
- Overall objective is to develop a robust **legal** and **ethical framework** for the TRUSTS Platform to ensure **sustainability** and **compliance** of the innovation brought by the project with all relevant regulations and ethics principles
- 'Crash test' for data market ecosystem



# Scope

- 2 complementary areas for research: intertwined!
  - TRUSTS data market platform ecosystem
  - TRUSTS use cases
- Many different legal frameworks involved (i.a.)
  - Data protection law, i.a.
    - Allocation of responsibilities?
    - GDPR v AMLD?
    - Anonymisation / pseudonimisation
  - Regulation of data as an economic asset
  - Regulation of data transactions
  - Financial law
  - Blockchain, smart contracts and the law
  - Ethical challenges associated with the use of AI systems



# Technical foundation

Benjamin Heitmann | Fraunhofer FIT

<https://www.fit.fraunhofer.de/>



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# Technical foundation: Data market infrastructure

- TRUSTS is built on experiences and technology of two European data market places
  - International Data Spaces (IDS) from Germany
  - Data Market Austria (DMA) from Austria
- Novel developments
  - Addition of approaches for enabling and maintaining data sovereignty
  - Advanced matchmaking based on profiles and brokerage for users and organizations
  - Data governance based on semantic technologies
  - Designed for interoperability with other data market places

# Technical foundation: Enabling and maintaining data sovereignty

- Providing the components for privacy preserving data analytics is one of the most important technical goals for the project
- Building blocks
  - Classifiers and transfer learning
  - Deep learning
  - Anonymization and assessment of deanonymization risk
  - Federated deep learning
- Framework for adapting algorithms to preserve privacy and security using the above building blocks



# Stakeholder Engagement

Silvia Castellví | International Dataspaces Association

<https://www.internationaldataspaces.org/>



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# Stakeholder analysis

## *The data landscape*



“

*“I want European businesses and our many SMEs to access high quality data and create value for Europeans – including by developing Artificial Intelligence applications.”*

*Thierry Breton,  
Commissioner for the Internal Market*



# Stakeholder analysis

## *The data landscape*

*“A vital data economy and a successfully working Data-Services Ecosystem in Europe is one of the factors to enable and ensure sustainable employment and growth and thereby societal stability and well-being”*

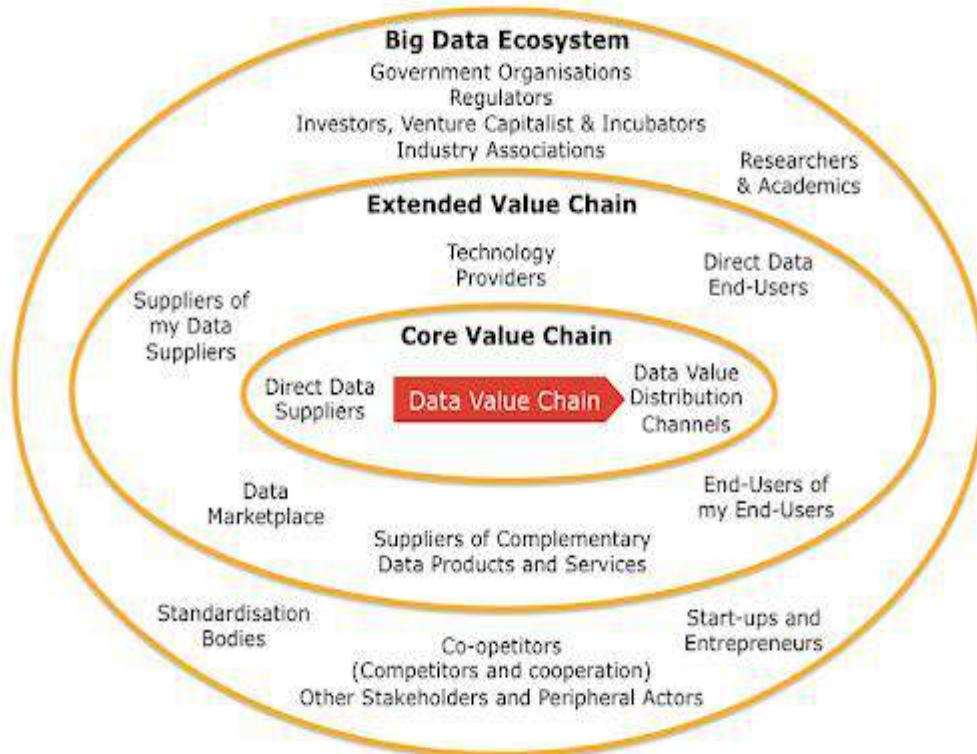
*TRUSTS consortium*



# Stakeholder analysis

## *Stakeholder management and community engagement strategy*

### Big Data Ecosystem stakeholders



### Key Questions

- How does the Data-Services Ecosystem look like?
- Which are the key stakeholders for the project?
- How to engage the stakeholders to create a solid community?

# Stakeholder analysis

## Benchmarking

- Data suppliers are estimated at almost 149,000 in the EU27 and 290,000 units in the EU28 for 2019, year-on-year growth of 2.4% and 2.3% respectively.
- The **European Data Market Monitoring Tool** offers a comprehensive overview of the most important data companies in Europe.
- More specifically, among the 1556 companies,
- 311 have been identified as Key Data Landscape companies in line with a set of criteria adopted and further specified in the following paragraphs.



Source: <https://datalandscape.eu/>

# Stakeholder categories

## *Initial categories identification*

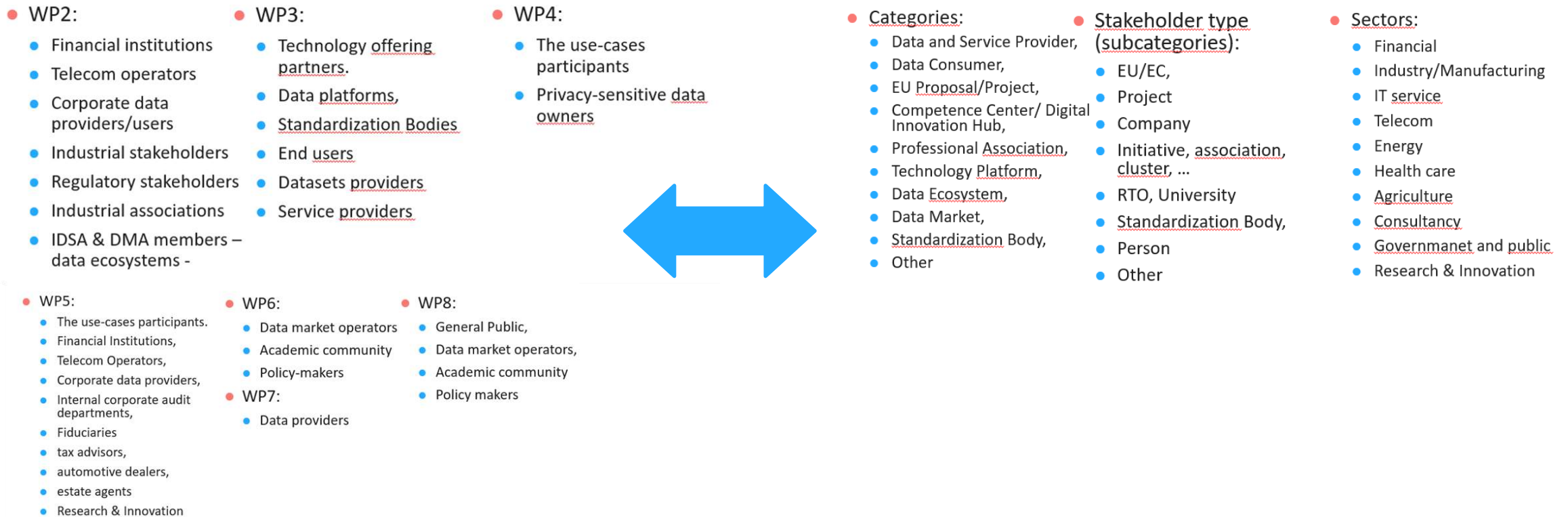
Categories	Stakeholder type	Sectors
<ul style="list-style-type: none"> <li>● Data and Service Provider,</li> <li>● Data Consumer,</li> <li>● EU Proposal/Project,</li> <li>● Competence Center/ Digital Innovation Hub,</li> <li>● Professional Association,</li> <li>● Technology Platform,</li> <li>● Data Ecosystem,</li> <li>● Data Market,</li> <li>● Standardization Body,</li> <li>● Other</li> </ul>	<ul style="list-style-type: none"> <li>● EU/EC,</li> <li>● Project</li> <li>● Company</li> <li>● Initiative, association, cluster, ...</li> <li>● RTO, University</li> <li>● Standardization Body,</li> <li>● Person</li> <li>● Other</li> </ul>	<ul style="list-style-type: none"> <li>● Financial</li> <li>● Industry/Manufacturing</li> <li>● IT service</li> <li>● Telecom</li> <li>● Energy</li> <li>● Health care</li> <li>● Agriculture</li> <li>● Consultancy</li> <li>● Governmanet and public</li> <li>● Research &amp; Innovation</li> </ul>

# Stakeholders categories

## *Categories mapping against target audience per WP*

### Target stakeholders within TRUSTS

### TRUSTS categories (work in progress)





# Stakeholder mapping on the TRUSTS website







# We invite you to become part of TRUSTS

**To become part of the TRUSTS tribe, please contact:**

Silvia Castellvi, Stakeholders Engagement Lead

[Silvia.castellvi@internationaldataspaces.org](mailto:Silvia.castellvi@internationaldataspaces.org)



# Questions & Answers

Any questions?

Please feel free to ask.





# Next webinars

## Views on IDS: TRUSTS in the financial industry – enabling data sovereignty beyond existing solutions

*12 November 2020 @ 11 a.m. CET*

The discussion will focus on how anti-money laundering works in TRUSTS and how the use of the IDS architecture will enable data sovereignty and data protection mechanisms. Finally, the panelists will approach the question of how the industry can take advantage of the project results.

Register [here](#).

Views on IDS: TRUSTS in the financial industry – enabling data sovereignty beyond existing solutions

organized by



in cooperation with



Alexandra Garatzogianni, LUH | Dr.  
Christos Roupas, Relational | Benjamin  
Heitmann, Fraunhofer FIT |  
Gianna Avgousti, eBOS



**Date:** November 12, 11 a.m. CET

**Free registration & more information:**

[Click here](#)

# Next webinars

## Operator business model options in a federated TRUSTS data ecosystem

*End of January 2021*

Sophisticated data infrastructures and services are increasingly abundant, and leave little space to quickly scale, for those late to the table. Its dedicated focus on data sovereignty, federation and interoperability sets TRUSTS apart from other data market infrastructures. Yet does this suffice for business sustainability? Bert Utermark, Partner at Governance One, explores the options.



# Thank you for your participation

We are at your disposal to answer any further questions:

Nina Popanton & Manuela Schlömmner

*Joint Communication and Dissemination Lead, TRUSTS*

 DIO  
Data Intelligence Offensive

[nina.popanton@dataintelligence.at](mailto:nina.popanton@dataintelligence.at)

[manuela.schloemmer@dataintelligence.at](mailto:manuela.schloemmer@dataintelligence.at)





# The core of TRUSTS

[www.trusts-data.eu](http://www.trusts-data.eu)

**Speakers:** Peter A. Bruck, DIO / Natalia Simon and Silvia Castellvi, IDSA / Ioannis Markopoulos, Forthnet / Bert Utermark, Governance One / Charlotte Ducuing, KU Leuven / Benjamin Heitmann, Fraunhofer FIT

**Moderator:** Martin Kaltenböck, SWC

**Technical support:** Thomas Thurner, SWC



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