DATA SPACES SUPPORT CENTRE

DSSC Insight Series

Unlocking synergies and value in data spaces

18 December 2024 | 16:00 to 17:30 CET | online

Gianfranco Cecconi
DSSC

Maaria Nuutinen
VTT

Christoph Mertens
IDSA

Funded by the European Union

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

DATA SPACES SUPPORT CENTRE

Intro:

- Gianfranco Cecconi, Executive Director, Data Spaces Support Centre

Unlocking the power of synergies in data spaces:

- Maaria Nuutinen, Senior Principal Scientist, VTT

Value creation with data spaces:

- Christoph Mertens, Head of Adoption, International Data Spaces Association

Q&A (You can also ask questions in the chat!)

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

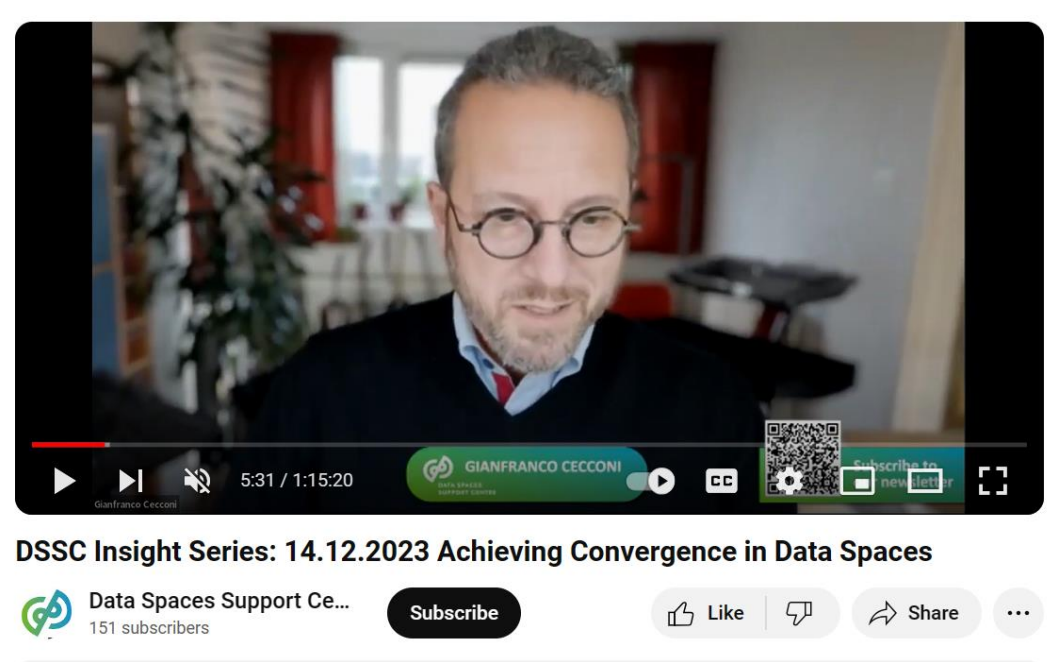
Funded by the European Union

Simpl Annual Community Event

30 January 2025

Autoworld, Brussels

European Commission



DATA SPACES SUPPORT CENTRE

This webinar is recorded. Did you know? Previous DSSC insight series recordings are available on our Youtube channel. Videos from our annual event are also available!

Check out our YouTube channel here

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

DATA SPACES SUPPORT CENTRE

Stay up to date with Data Spaces Support Centre and the European Union's programme for common European data spaces.

Subscribe to the DSSC Newsletter!

tinyurl.com/dssc-newsletter

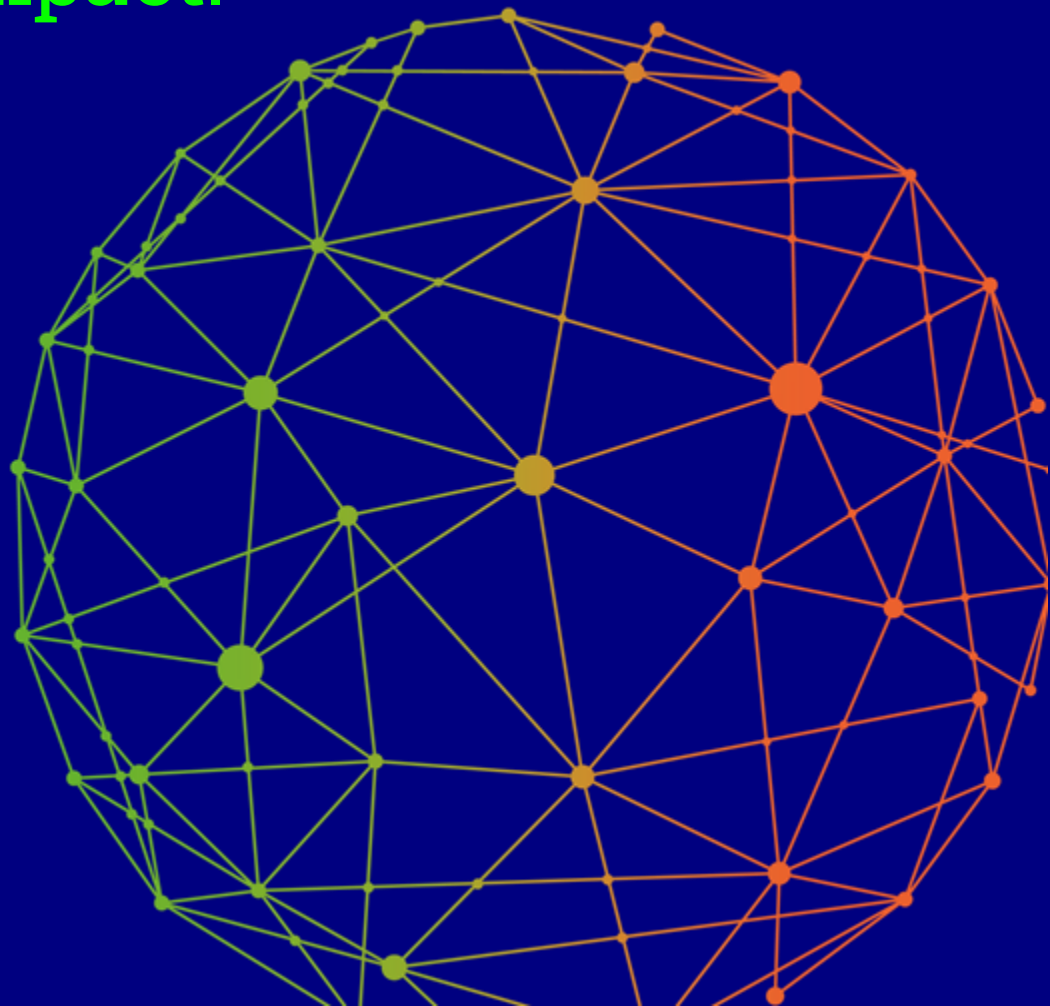
The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

Data Spaces Symposium

Share data. Unlock value. Boost impact.

Hilton Hotel, Warsaw | 11 & 12 March 2025



DSBA ■ BDV FIWARE FOUNDATION gaia-x INTERNATIONAL DATA SPACES ASSOCIATION

DATA SPACES SUPPORT CENTRE

Funded by the European Union

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412

Data Spaces Symposium

Join us in Warsaw!

You can have a key role and gain great exposure in the world's leading event on data spaces !
Are you a company/project/initiative and you would like to..

- Sponsor the event and gain more exposure?
- Being up to date with the program and developments?
- Do you have questions on ticketing, and anything related to the event?

Visit our website here or write us at events@dssc.eu!

DATA SPACES SUPPORT CENTRE

DSSC Insight Series

Unlocking Synergies and Value in Data Spaces

18 December 2024 | 16:00 to 17:30 CET | online

Gianfranco Cecconi
DSSC

Maaria Nuutinen
VTT

Cristoph Mertens
IDSA

Funded by the European Union

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

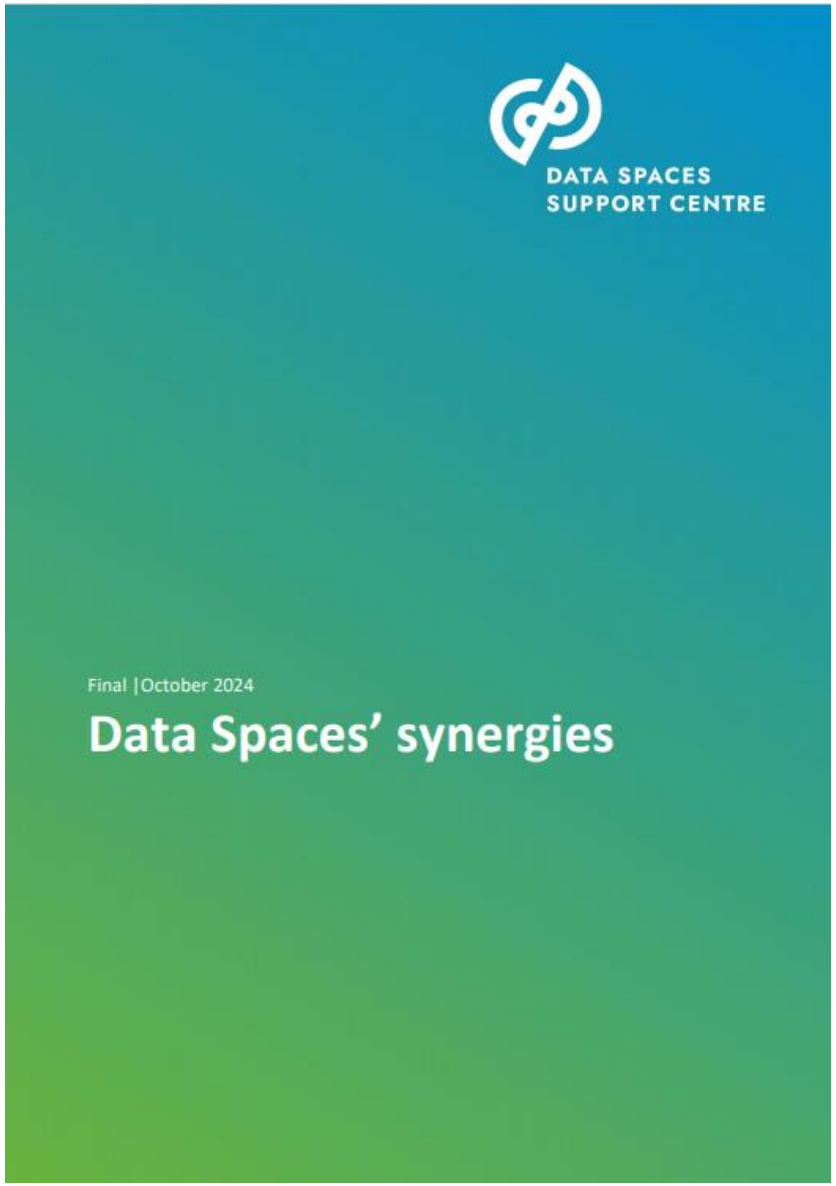
DATA SPACES SUPPORT CENTRE

Unlocking the power of synergies in data spaces

Maaria Nuutinen, VTT

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

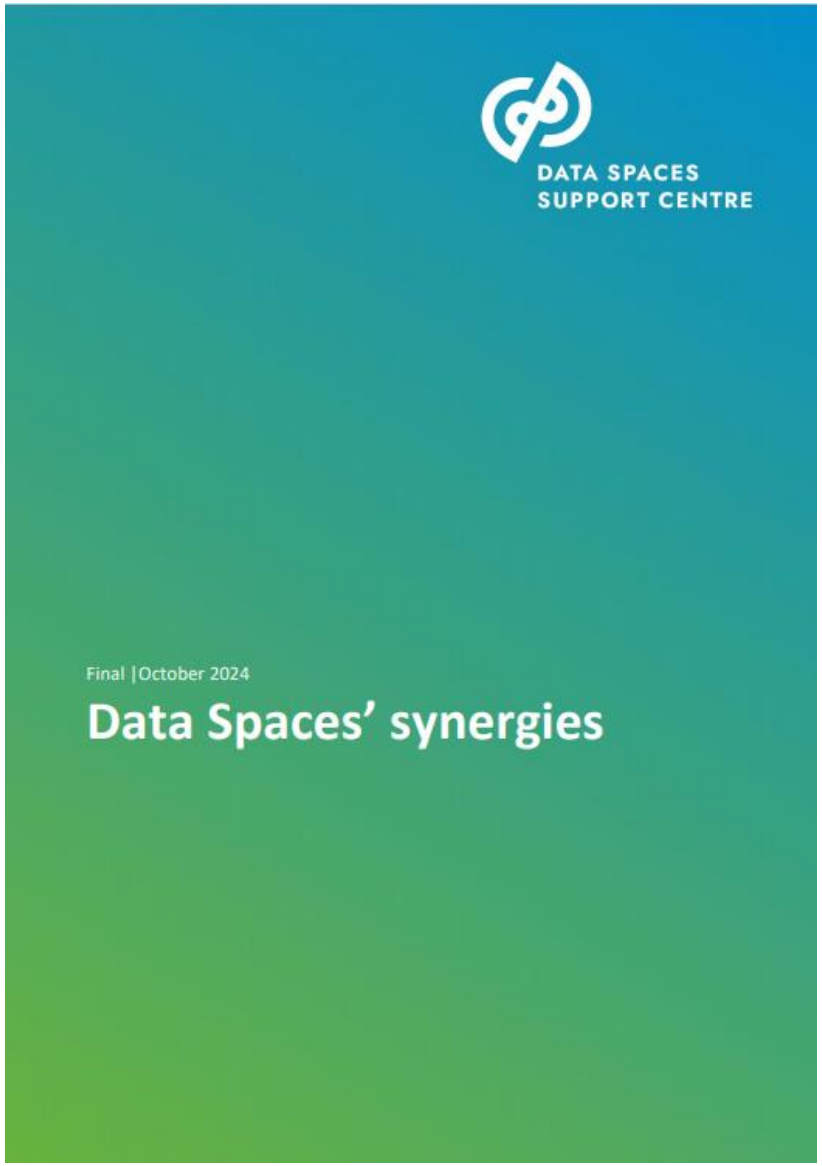


DATA SPACES
SUPPORT CENTRE

Discussion paper: Data Spaces' Synergies

- Juha-Pekka Soininen (VTT),
- Daniel Alonso (BDVA),
- Tobias Guggenberger (Fraunhofer),
- Leona King (KUL),
- Heidi Korhonen (VTT),
- Kai Kuikkaniemi (Mydata),
- Gabriella Laatikainen (VTT),
- Maaria Nuutinen (VTT) ,
- D. J. Regeczi (TNO),
- Savvas Rogotis (BDVA)

Funded by
the European Union



The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

DATA SPACES SUPPORT CENTRE

- Abstract
- 1 Introduction
  - 1.1 Living with multiple data spaces – from the current situation to multiple co-evolving data spaces
  - 1.2 Reaching a joint understanding of data spaces
  - 1.3 Definition of data space and definition of synergy
- 2 Conceptual framework of data space synergies
  - 2.1 Components facilitating synergies
  - 2.2 Elements of synergies
  - 2.3 Building synergetic systems
- 3. Synergies and the evolution of data spaces
  - 3.1. Synergies in data spaces development cycle
  - 3.1 Towards digital single market - an ecosystem of data spaces
- 4. Perspectives on synergies
  - 4.1 User perspective
  - 4.2 Societal perspectives
  - 4.3 Human perspective
- 5 Conclusion
- References

DATA SPACES SUPPORT CENTRE

Synergy between data spaces
“The mutual benefits, gained efficiency or increased impact of two or more data spaces working together”.

“the synergies between data spaces can be enabled by common practices, communication concepts, services and/or components, which increase data space interoperability and enable harmonised processes of using different data spaces."

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

Why care about cross-data space issues and synergies?

DATA SPACES SUPPORT CENTRE

- A single data space cannot address all needs and purposes.
  - Need for coexisting data spaces
- Many use cases rely on data and services sourced from multiple data spaces
  - Interoperability is the key to European digital vision

  - Most users will need to interact with and participate in multiple data spaces
  - Companies participating in multiple data spaces face significant management complexities and overheads due to parallel solutions

Funded by the European Union

The transformative impacts of synergies between data spaces

DATA SPACES SUPPORT CENTRE

1. Economic impacts
2. Environmental benefits
3. Societal benefits
4. Enhanced user experiences
5. Strategic autonomy and data sovereignty
6. Cross-sectoral problem solving
7. Building a resilient data ecosystem

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

Key messages

- **Synergy by design**
  - Synergy should be built into data spaces at every stage of development
  - Benefits may be realized later, but the approach ensures smooth navigation of complexities
  - Fosters collaboration and seamless data exchange and integration
- **Trust creation mechanisms**
  - Crucial for reliable and trustworthy data-sharing infrastructure
  - Trust results from intention, commitment, agreement, transparency, and liability
  - Mechanisms should be consistent across all data spaces to build a solid foundation
- **Evolutionary, systemic, long-term perspective**
  - Multiple co-evolving data spaces
  - Ensuring long-term sustainability of data spaces
  - Progress towards a cohesive and efficient European data market

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

Key requirements and enablers to achieve the transformative impacts of synergies

DATA SPACES SUPPORT CENTRE

1. Synergy-by-design approach
2. Trust mechanisms
3. Common assets and tools
4. Policy and regulatory support
5. Governance and stakeholder collaboration
6. Continuous adaptation and feedback loops
7. Addressing barriers
8. Trustworthy human-centric data practices
9. Interoperability as the foundation

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

Interoperability

DATA SPACES SUPPORT CENTRE

- **Key aspect:** Interoperability is essential for creating synergies by enabling seamless and effective data exchange across data spaces.
- **Means:** Includes the harmonization of data models, standards, protocols, and governance frameworks across different data spaces.
- **Purpose:** Facilitates smooth data flow, integration, and collaboration between data spaces.
- **Challenges addressed:** Aims to overcome fragmentation in data spaces, promoting larger-scale data sharing and reuse.
- **Scope:** Ensures that European data spaces can collaborate effectively, achieving seamless data exchange and value creation.
- **Impact:** Supports benefits realization for individuals, businesses, and society by enabling data space synergies.

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union

Ongoing work

DATA SPACES SUPPORT CENTRE

- Incorporating cross-data space interoperability into the DSSC assets
- We are working on the European Data Spaces Interoperability Framework
- Co-creation with the data space initiatives

Planned topics include:

- Interoperability-by-design principle
- Role of intermediaries in collaboration
- Joint use cases for data space participants
- Business aspects of collaborating data spaces
- Technical considerations of collaborating Data spaces
- Legal aspects of collaborating data spaces
- Federation of data spaces

Funded by the European Union

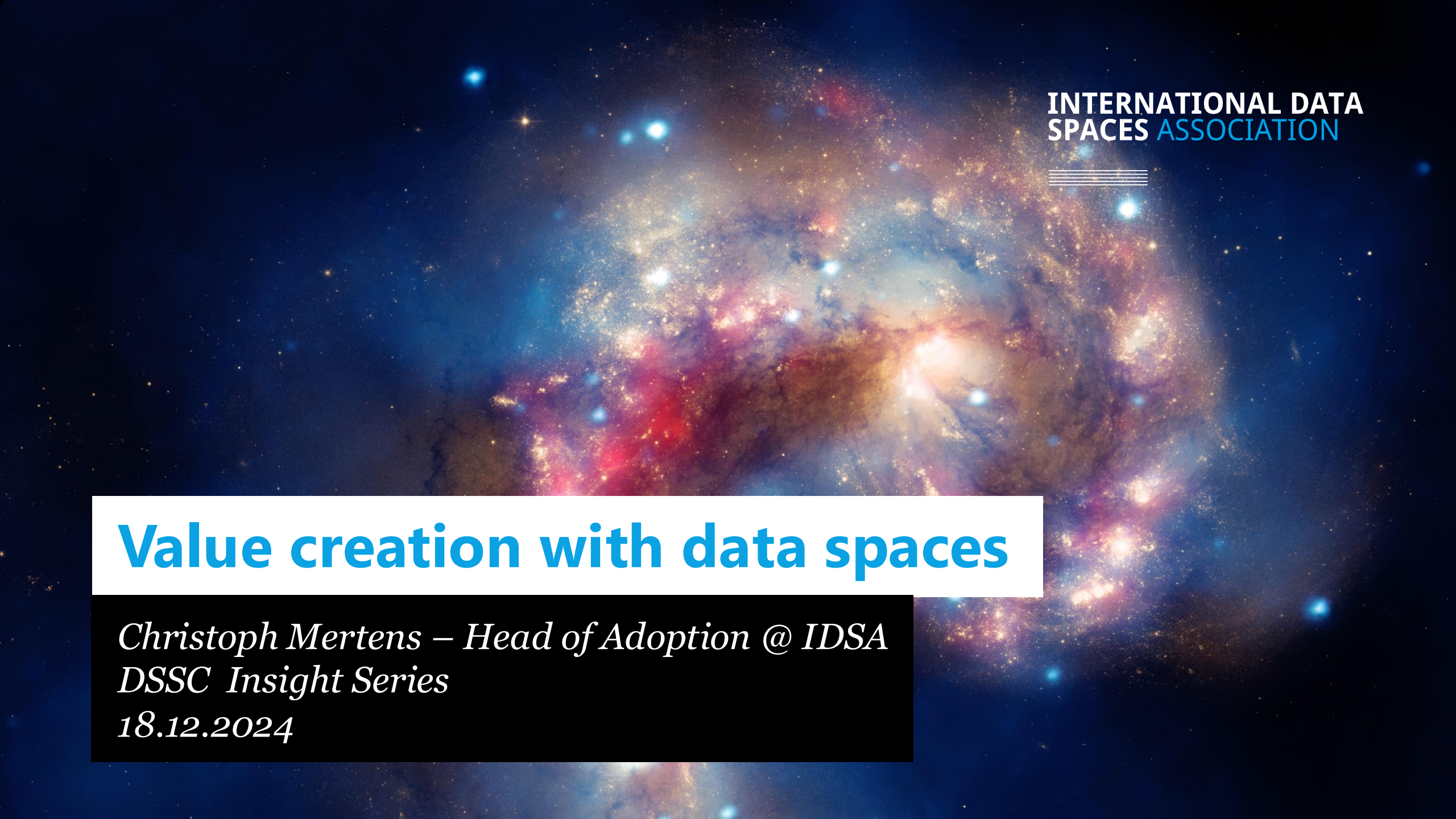
DATA SPACES SUPPORT CENTRE

Thank you!

Contacts: Maaria.Nuutinen(at)vtt.fi and Gabriella.Laatikainen(at)vtt. fi

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union



INTERNATIONAL DATA SPACES ASSOCIATION

Value creation with data spaces

Christoph Mertens – Head of Adoption @ IDSA

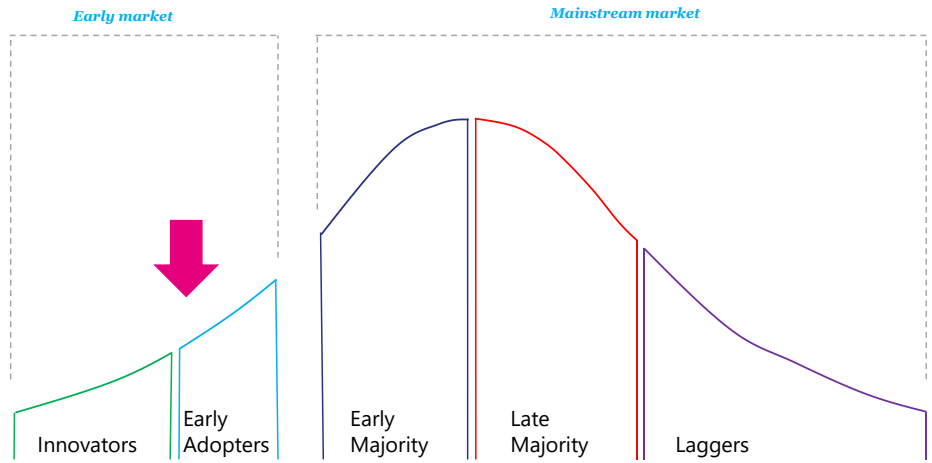
DSSC Insight Series

18.12.2024

IDS concepts as baseline for data spaces

Data spaces in multiple sector use IDS principles as blueprint

INTERNATIONAL DATA SPACES ASSOCIATION



- Catena-X
- MDS
- SCSN
- DATA-EX

- Manufacturing-X
- Health Data Space
- ERJU-Rail Data Space
- Resilience Data Space
- Eona-X
- Media Data Space (DEP – now TEMS)
- Manufacturing Data Space (DEP)
- Kultur Datenraum
- Skills Data Space (DEP)
- X-Road
- Ouranos-X
- And many more

- More CSAs and Deployment actions
- SIMPL open
- 100 Data Spaces in China

Explore here

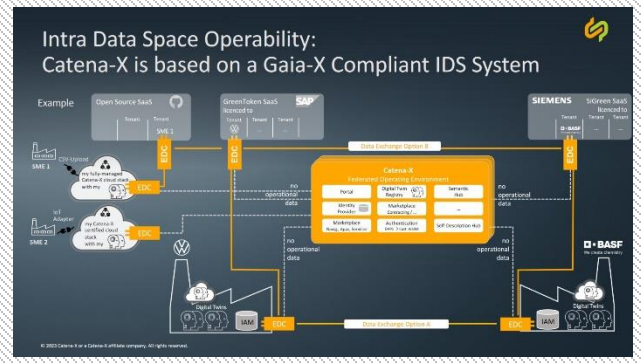
Catena-X

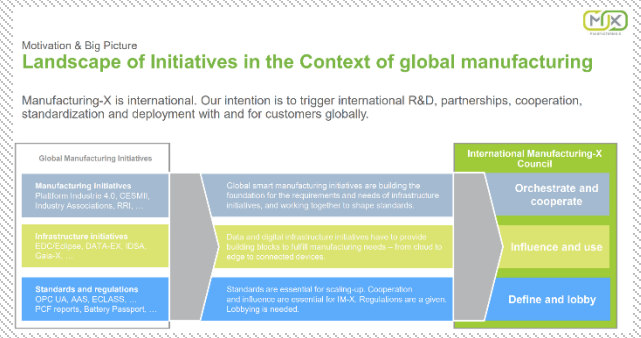
DATA-EX Data Society Alliance

Mobility Data Space Data Sharing Community

EONA-X

BAIDATA





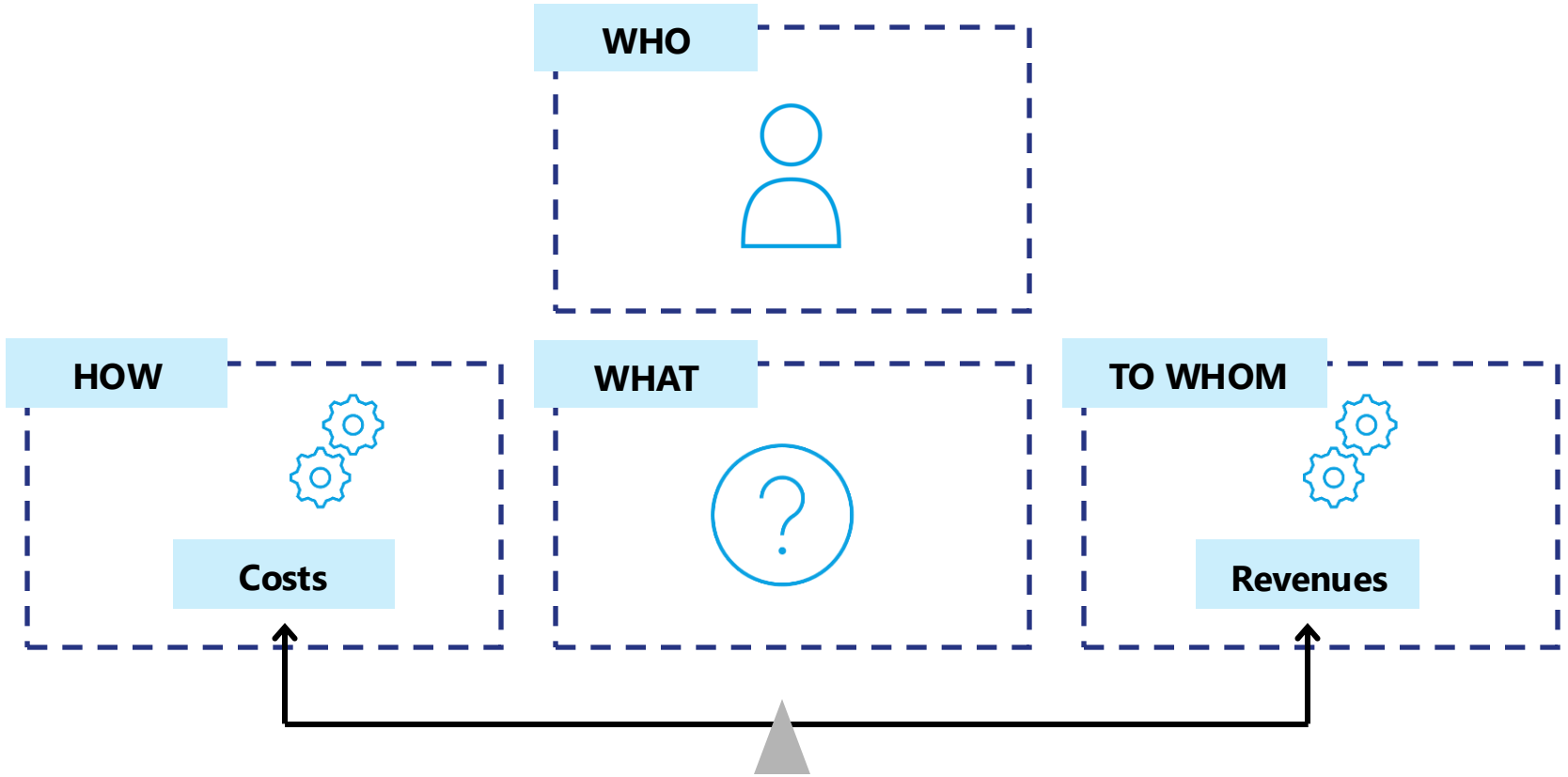

Business Model for Data Spaces
?

1

Some Essential Concepts

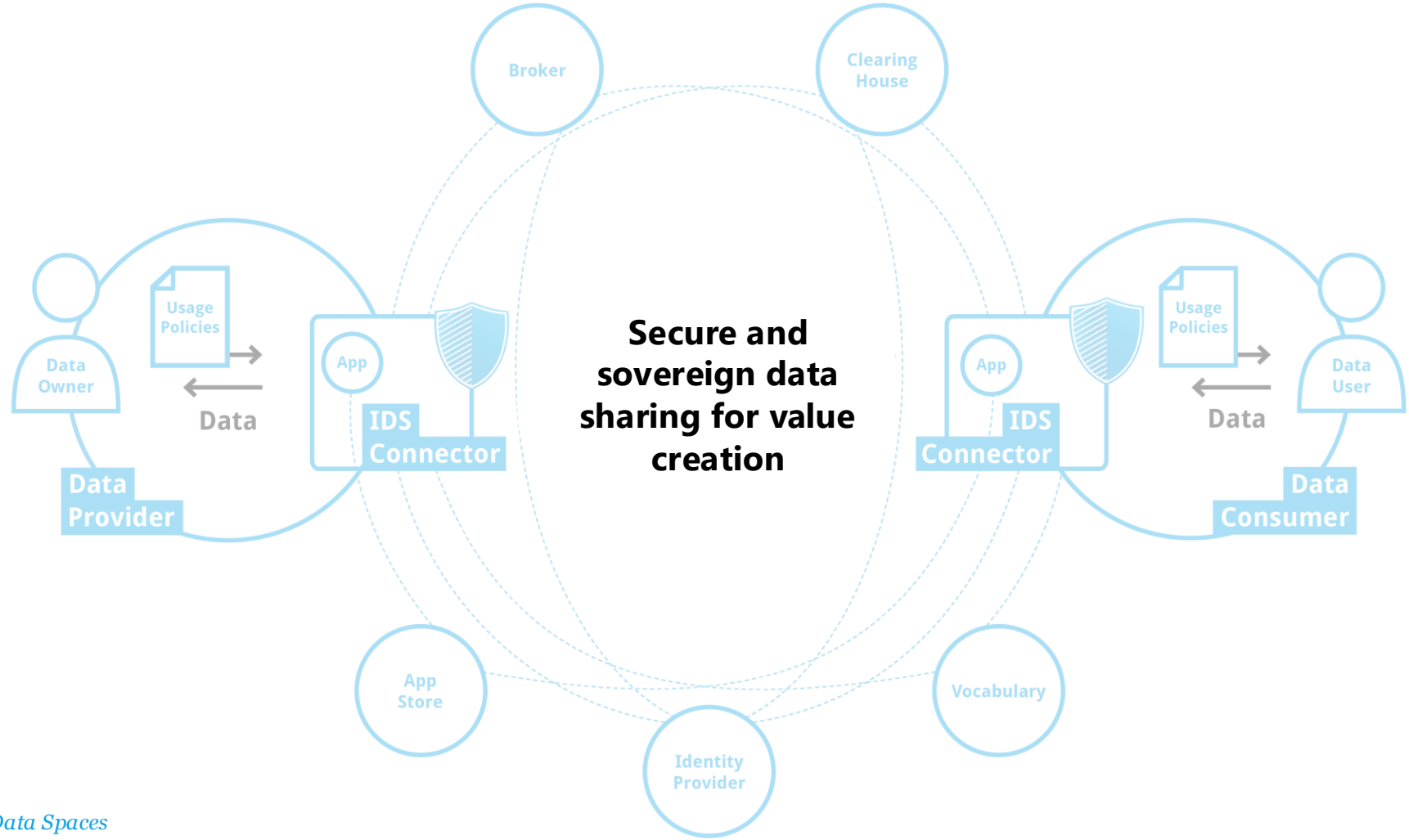
What is a business model?

INTERNATIONAL DATA SPACES ASSOCIATION



Value proposition of a data space

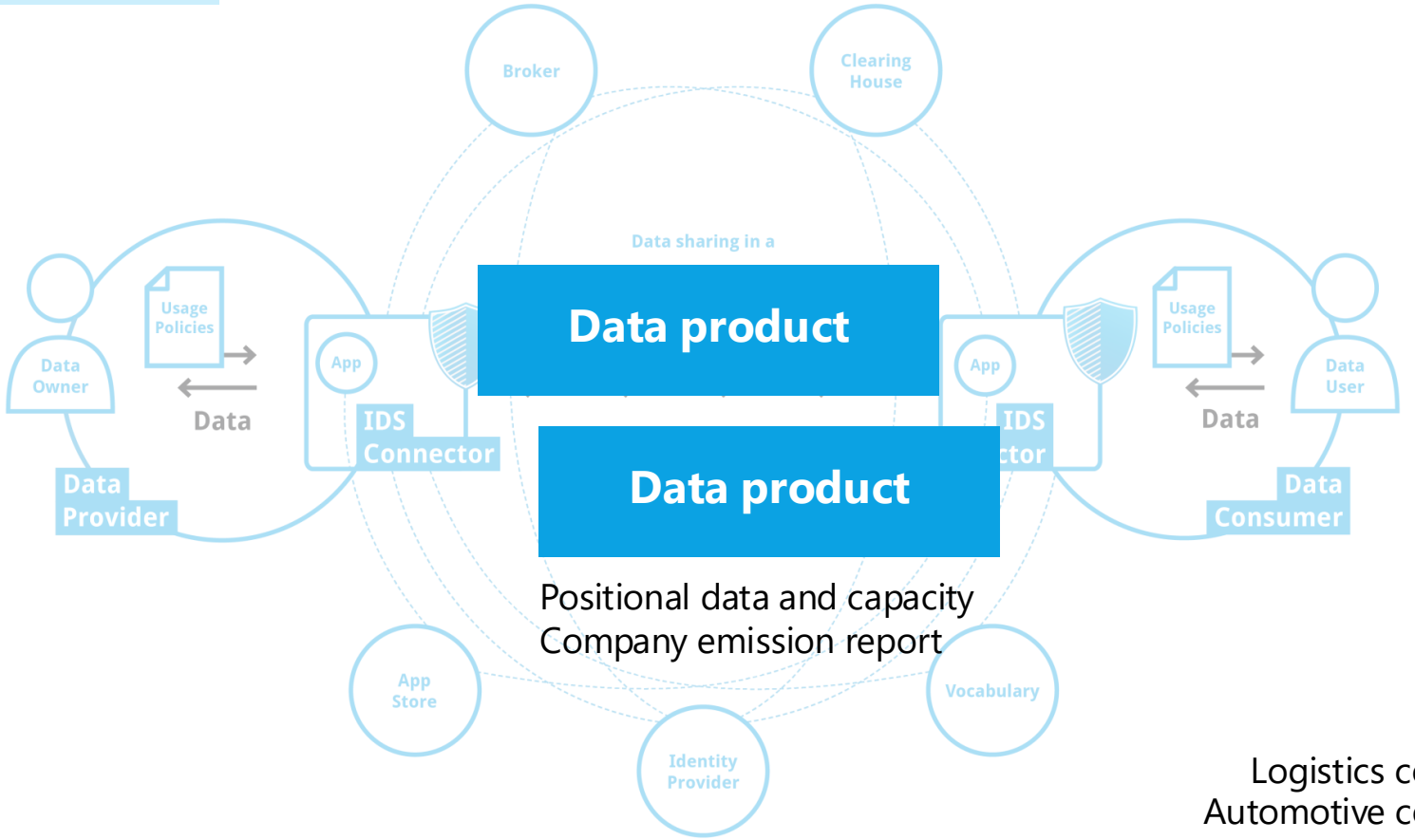
INTERNATIONAL DATA SPACES ASSOCIATION



Actual value is created in use cases

INTERNATIONAL DATA SPACES ASSOCIATION

Data Space



Use Case 1

Use Case 2

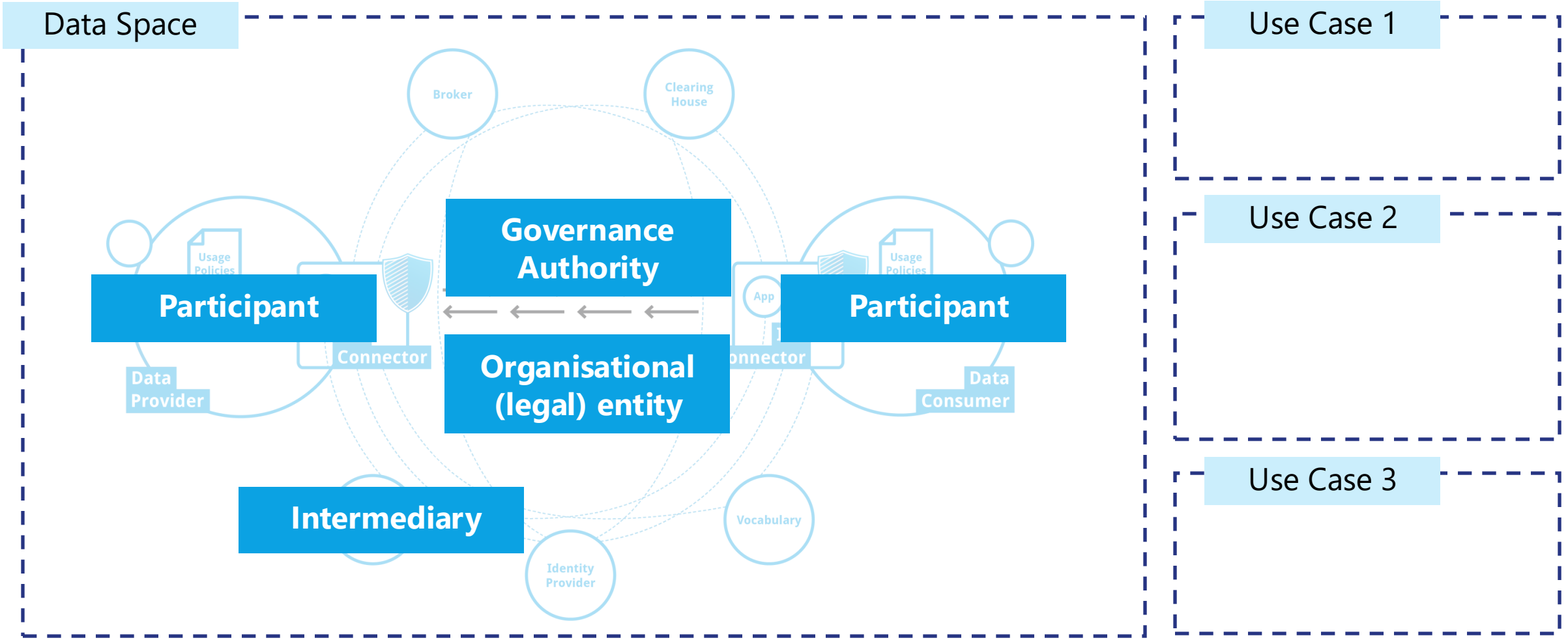
Final product

Synchro modal route planner
E2e supply chain emissions

Use Case 3

What is the actor's perspective?

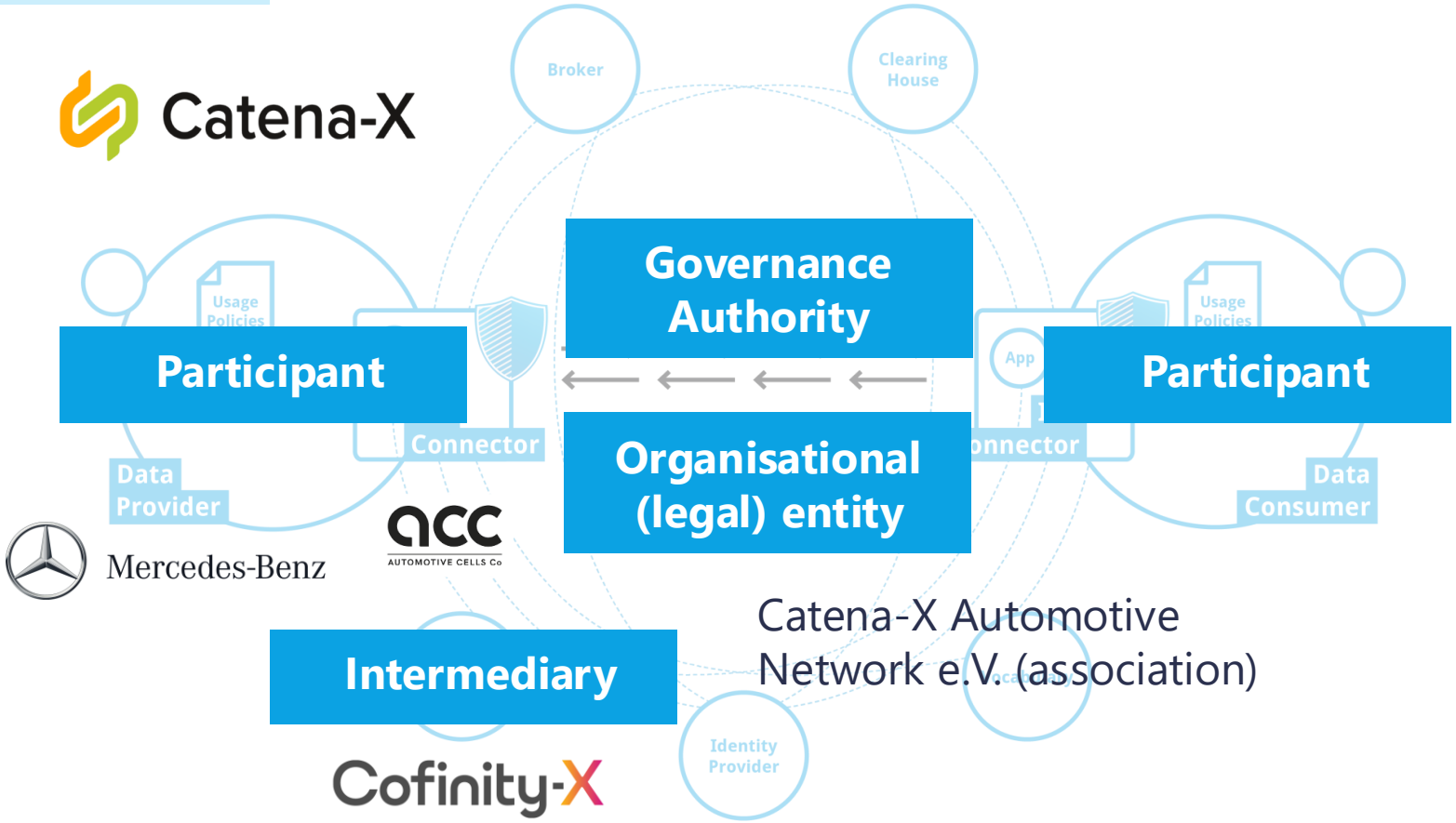
INTERNATIONAL DATA SPACES ASSOCIATION



What is the appropriate level of analysis?

INTERNATIONAL DATA SPACES ASSOCIATION

Data Space



Use Case 1

Predictive Maintenance

Use Case 2

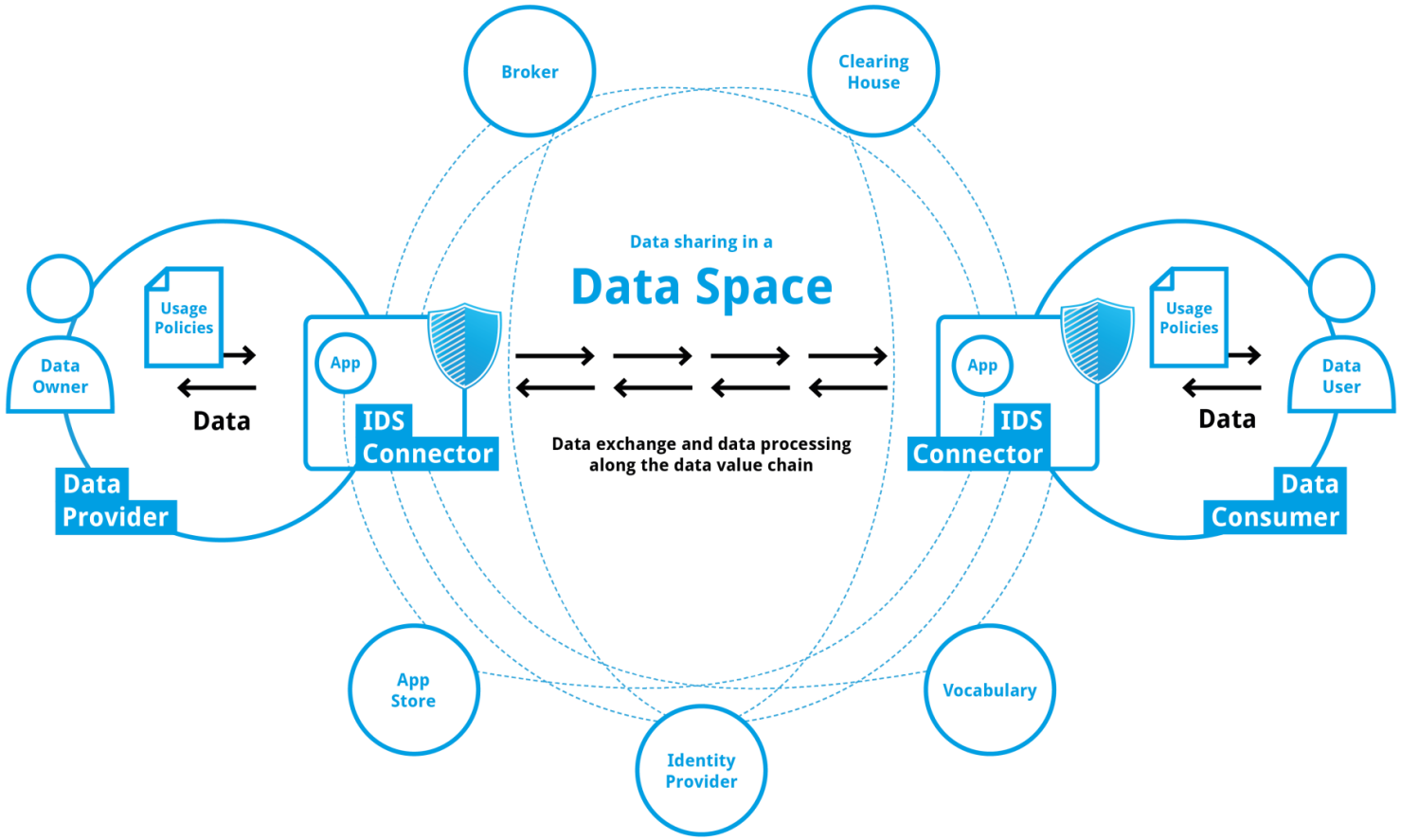
Quality Management

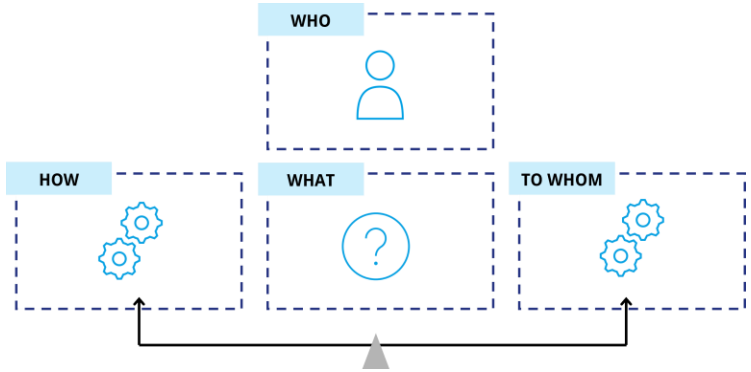
Use Case 3

Logistics Optimization

Combination of Multiple Business Models

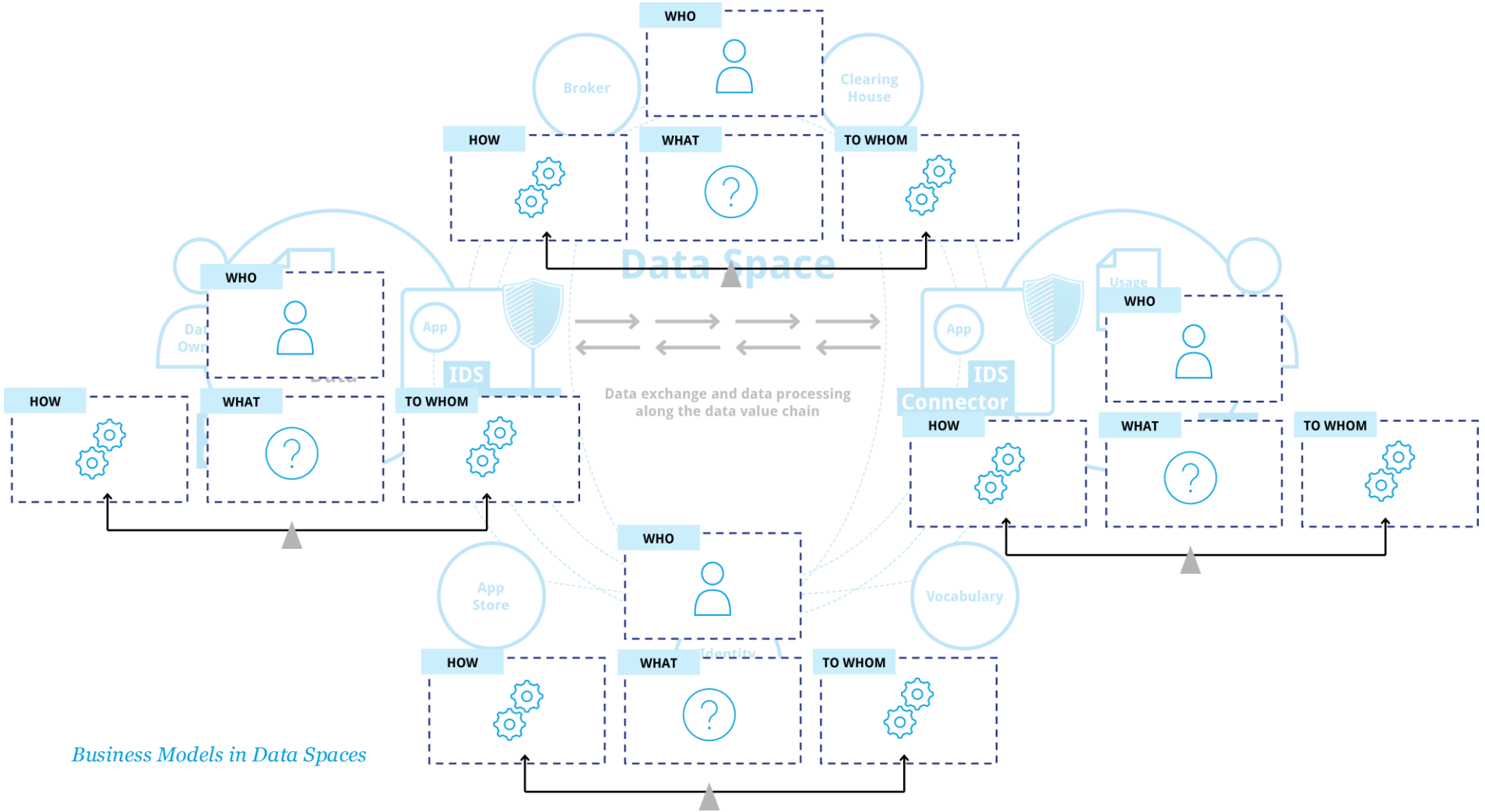
INTERNATIONAL DATA SPACES ASSOCIATION





Combination of Multiple Business Models

INTERNATIONAL DATA SPACES ASSOCIATION



Business Models in Data Spaces

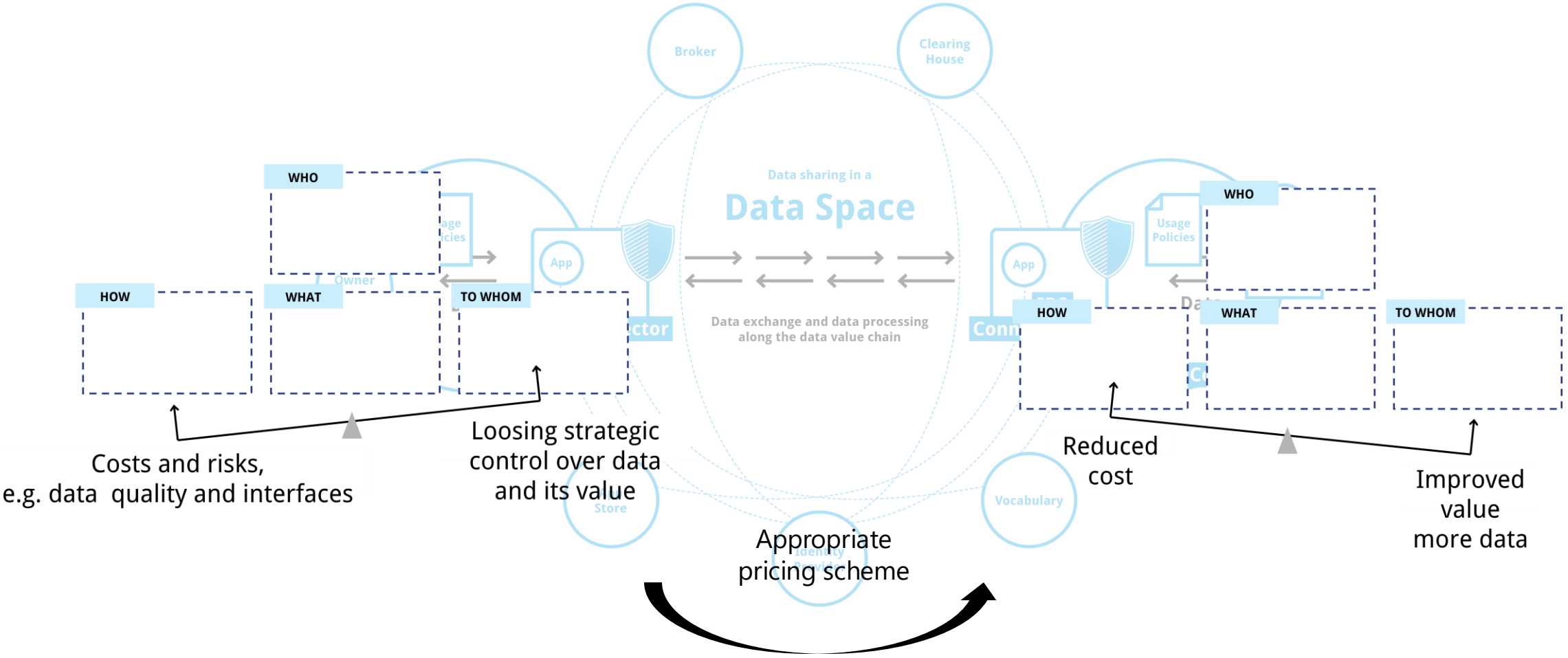
2

Business Models for Participants vs. Infrastructure

Participants

Data space participants: imbalance

INTERNATIONAL DATA SPACES ASSOCIATION



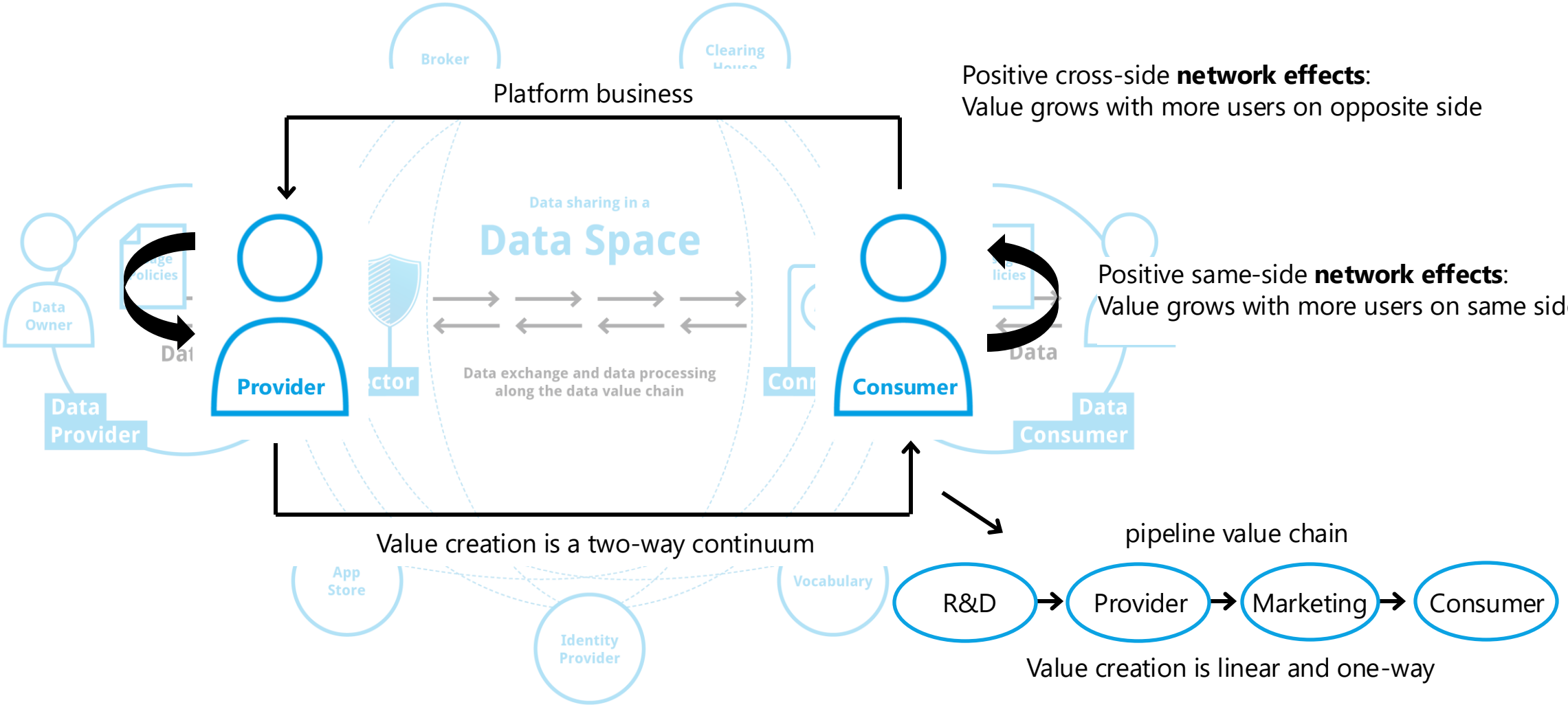
3

Business Models for Participants vs. Infrastructure

Infrastructure

Multi-sided business model

INTERNATIONAL DATA SPACES ASSOCIATION



Positive cross-side **network effects**:
Value grows with more users on opposite side

Positive same-side **network effects**:
Value grows with more users on same side

pipeline value chain

R&D → Provider → Marketing → Consumer

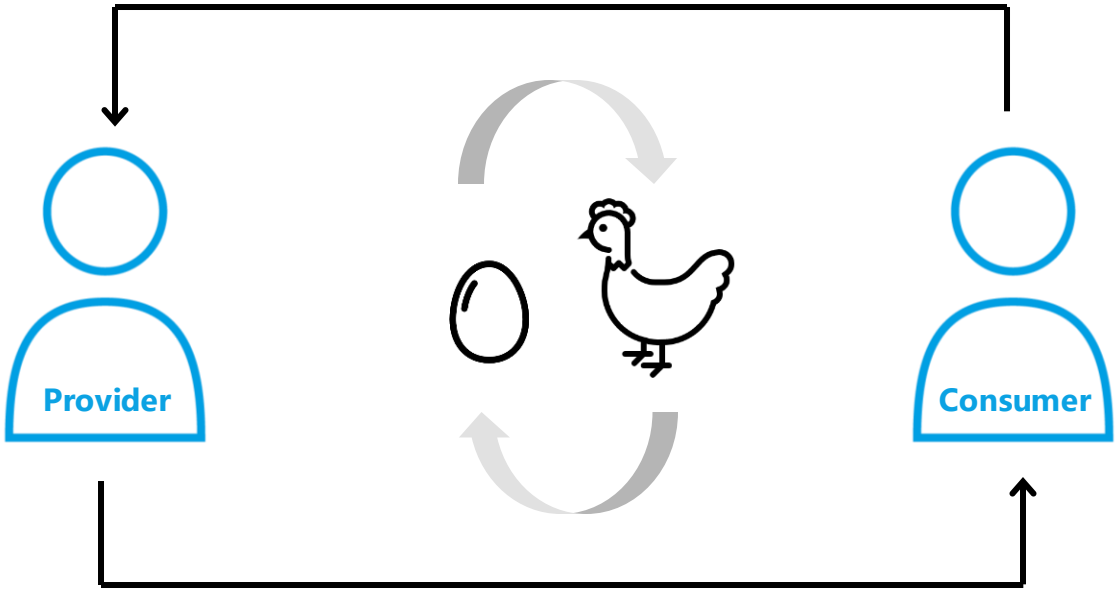
Value creation is linear and one-way

How to bootstrap platform business?

INTERNATIONAL DATA SPACES ASSOCIATION

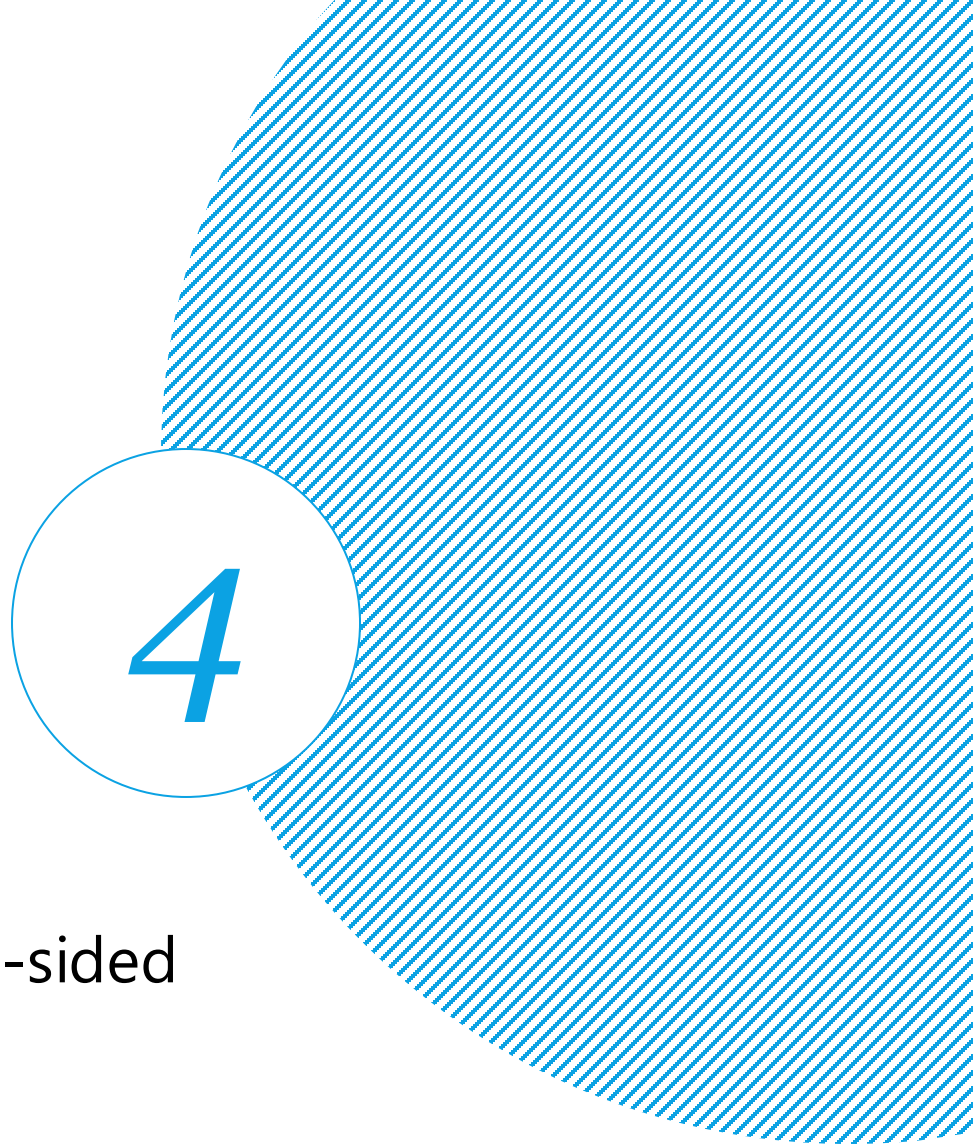
seeding strategy
build on positive same-side effects
marquee users

big bang adoption



let money side subsidize other side

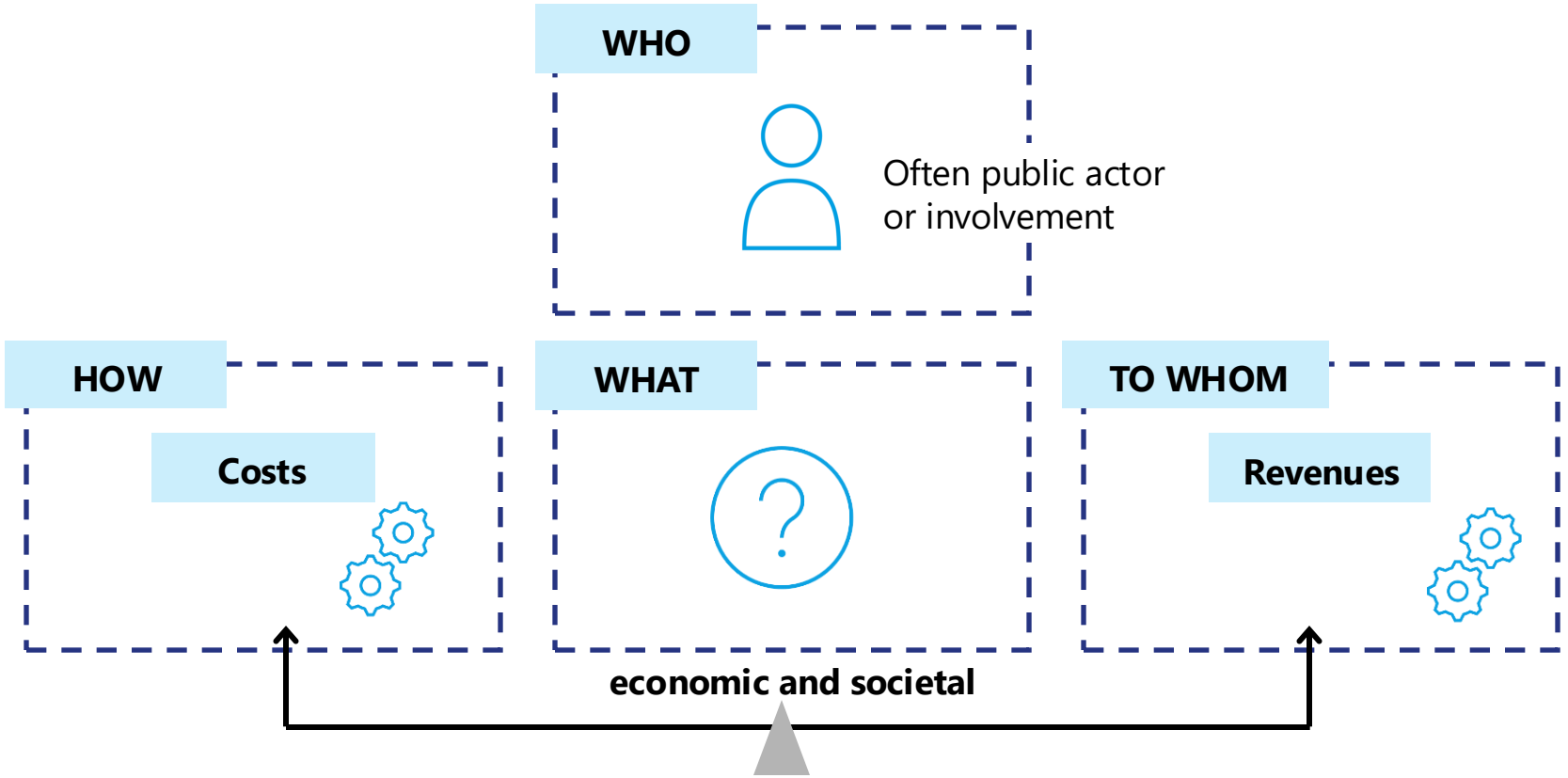
attract participants who can act on both sides
leverage existing platform (envelop or convergence)



Business model is multi-sided

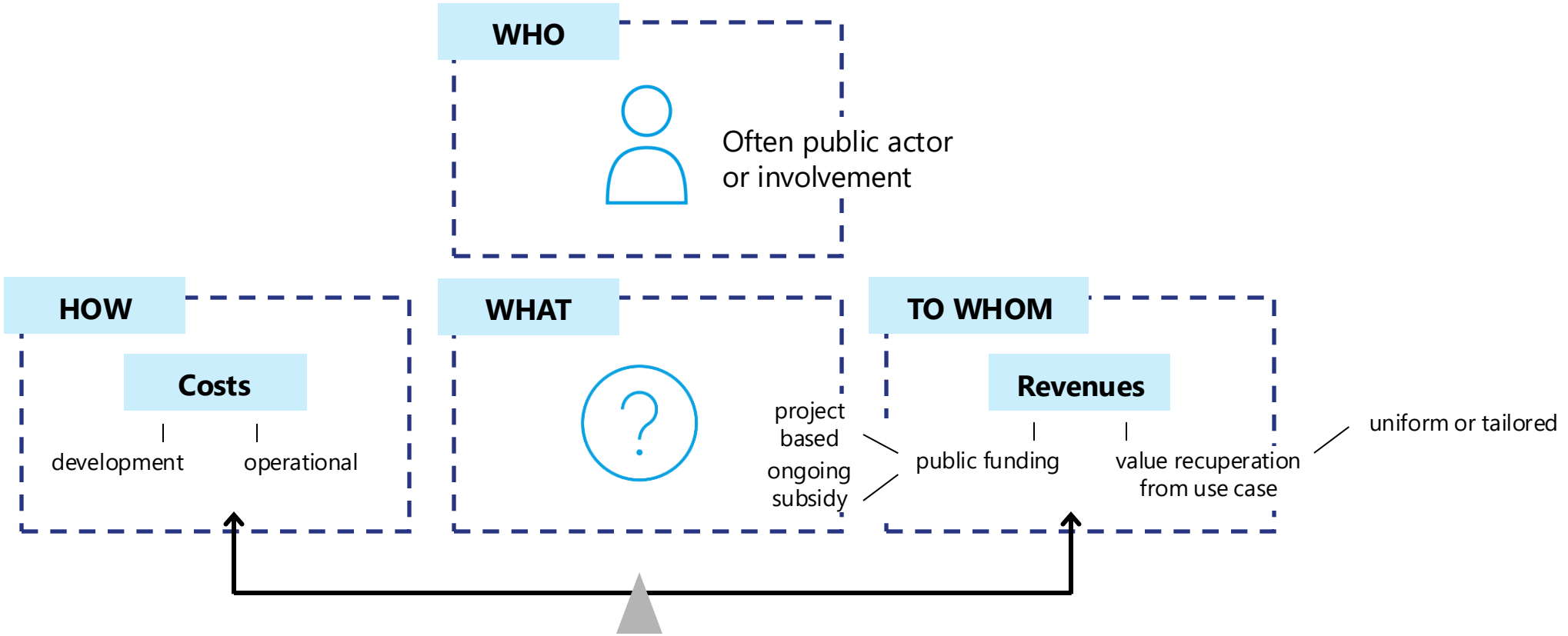
Business model for infrastructure provider

INTERNATIONAL DATA SPACES ASSOCIATION



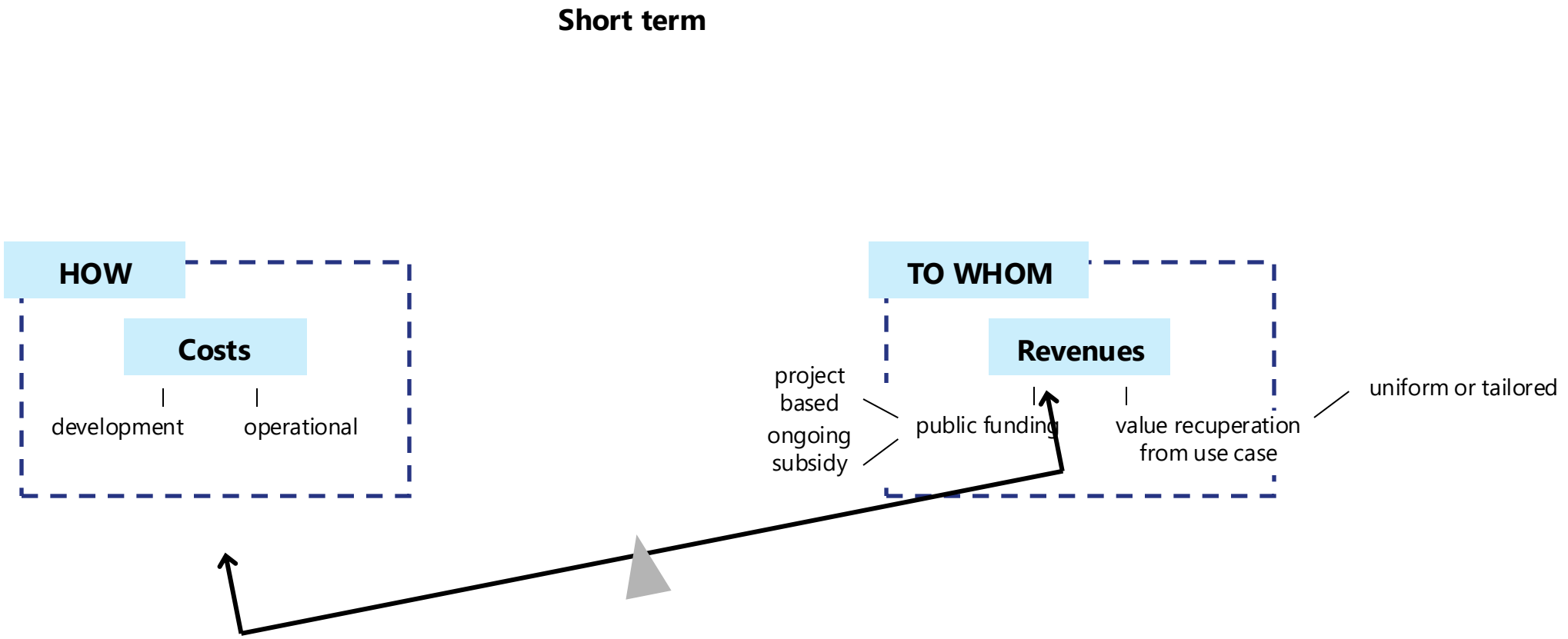
Infrastructure provider: balance

INTERNATIONAL DATA SPACES ASSOCIATION



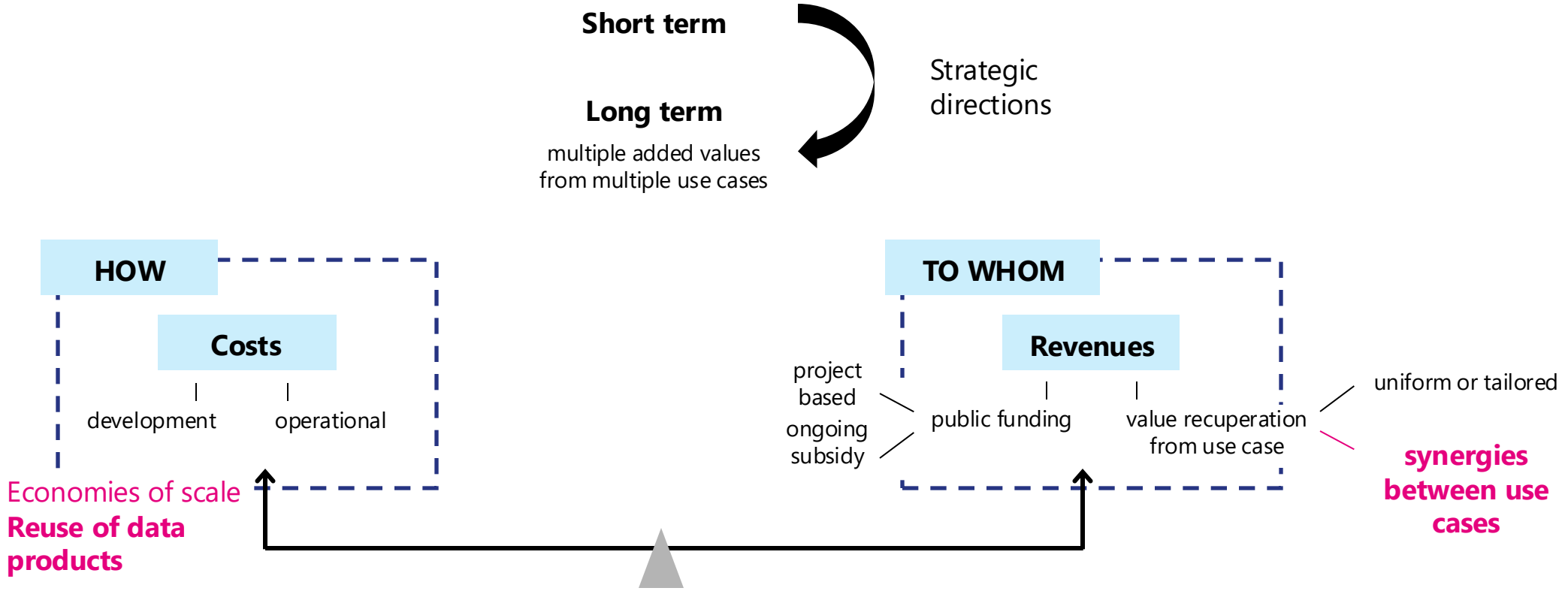
Infrastructure provider: balance

INTERNATIONAL DATA SPACES ASSOCIATION



Infrastructure provider: balance

INTERNATIONAL DATA SPACES ASSOCIATION




Business Model for Data Spaces
?

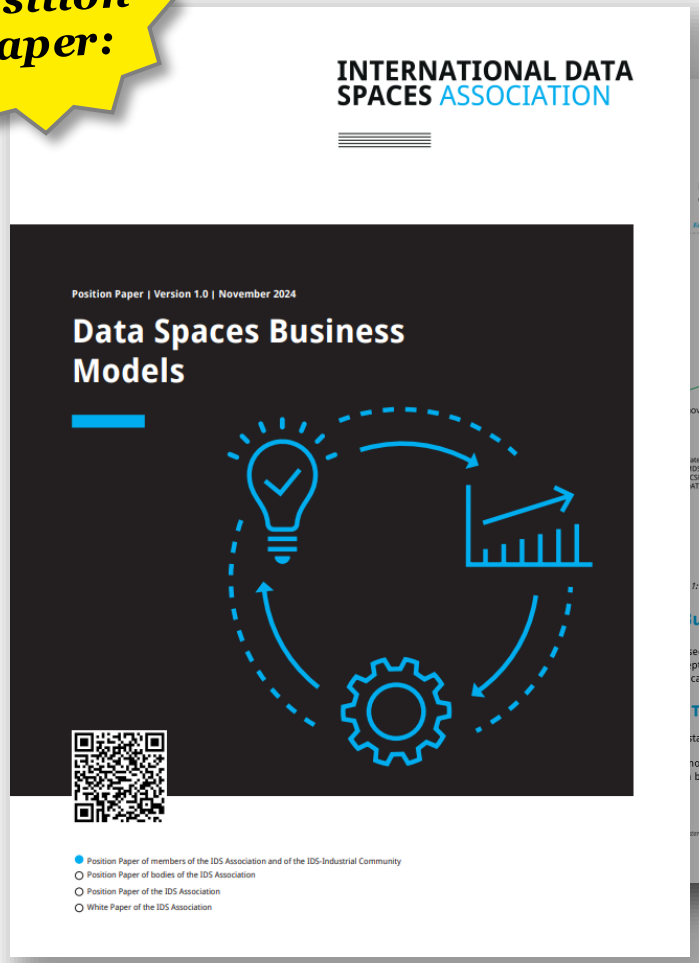

The ONE business model
for data spaces
does not exist!

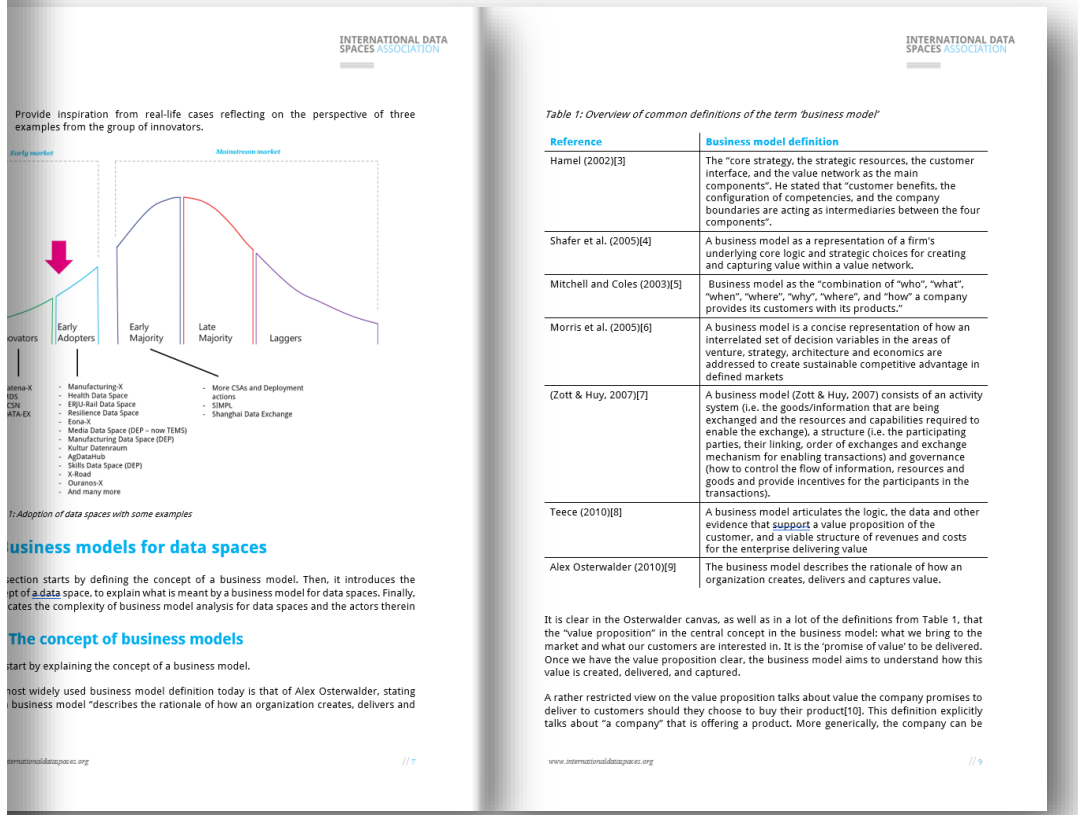
Data Spaces Business Models

Prof. Sofie Verbrugge et al.

INTERNATIONAL DATA SPACES ASSOCIATION

New position paper:





INTERNATIONAL DATA SPACES ASSOCIATION

Christoph Mertens

Head of Adoption

www.internationaldataspaces.org

+49 162 1011625

christoph.mertens@internationaldataspaces.org

https://www.linkedin.com/in/christoph-mertens-247b5732/

Q&A

DATA SPACES SUPPORT CENTRE

Subscribe to the DSSC Newsletter!

The Data Spaces Support Centre receives funding from the European Union Digital Europe Programme under grant agreement n° 101083412.

Funded by the European Union