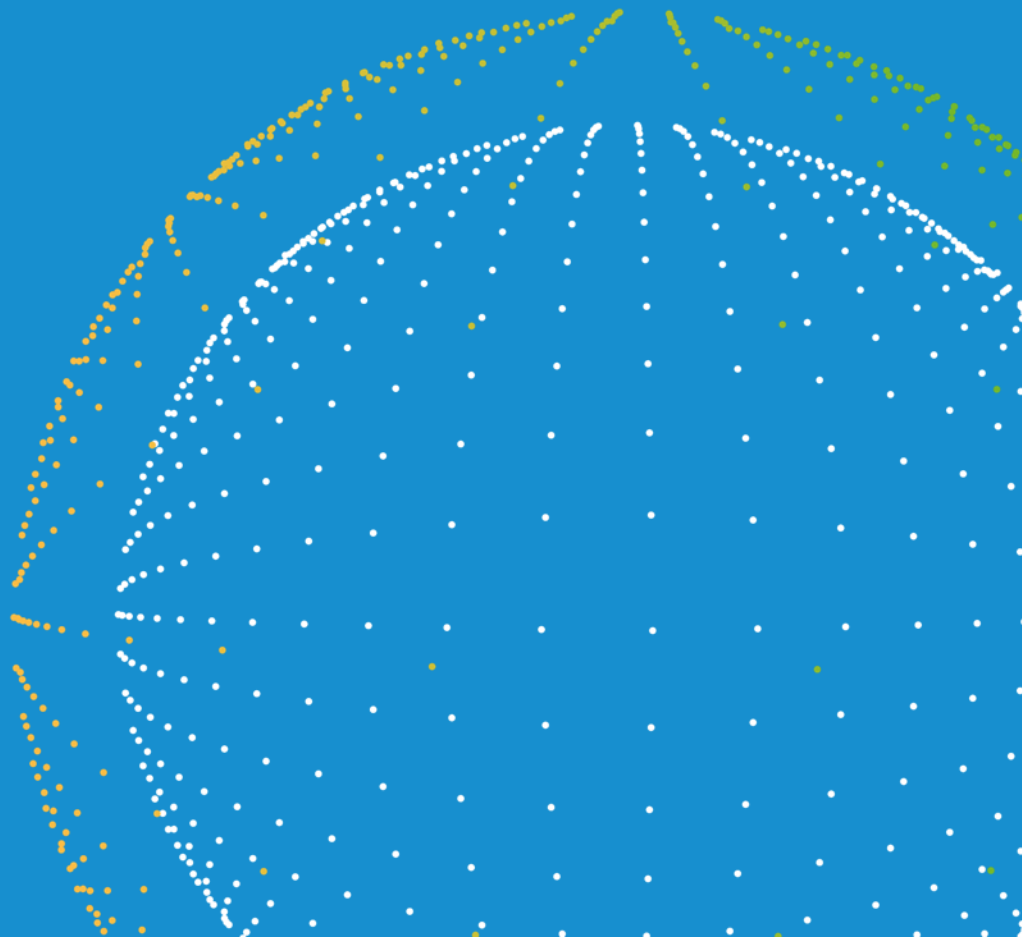
The blueprint in practice

A role play to build an energy data space

Facilitated by representatives of the Data Space Support Centre



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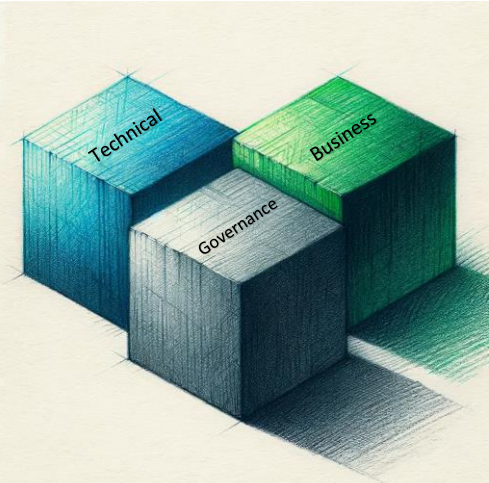
Goals for today

- To run through specific building blocks in the blueprint
  - Business model development
  - Data models
  - Organisational form and governance authority
- To see these blocks in (simulated) practice
  - What value do they provide?
  - Do they solve real-world problems?
- The **co-creation method** in action



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The easy questions for the audience

- Who here has solar panels on their roof?
- Who here owns or leases an electric car?

Those who answered yes will be interested in this unfolding drama and already know enough to participate

If you said no, it's still intuitive and interesting!

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What kind of data space is it?

- For this exercise, we take as a given
  - We have a clear set of data products
  - We have a specific use case around which to build the data space
- We have four main stakeholders
  - A fuller description to come

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Would you like to volunteer?

NO

- Come to the stage to join the action
  - You can be the spokesperson or an ‘advisor’ to one of four groups
- If you know something about the energy sector, please, this is for you
- NO RECORDINGS!
  - We can relax

NO

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Applause for our volunteers, please

- Welcome to the stage!

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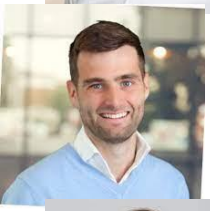
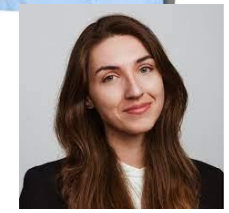
Introducing our DSSC actors

- Data space consultants (DSSC representatives)

Geert Lamerichs, business blocks



Jelte Bootsma, technical & business blocks



Marta Musidlowska, governance & legal blocks

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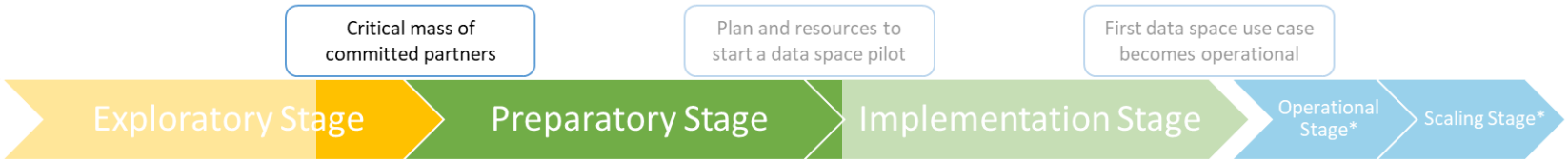
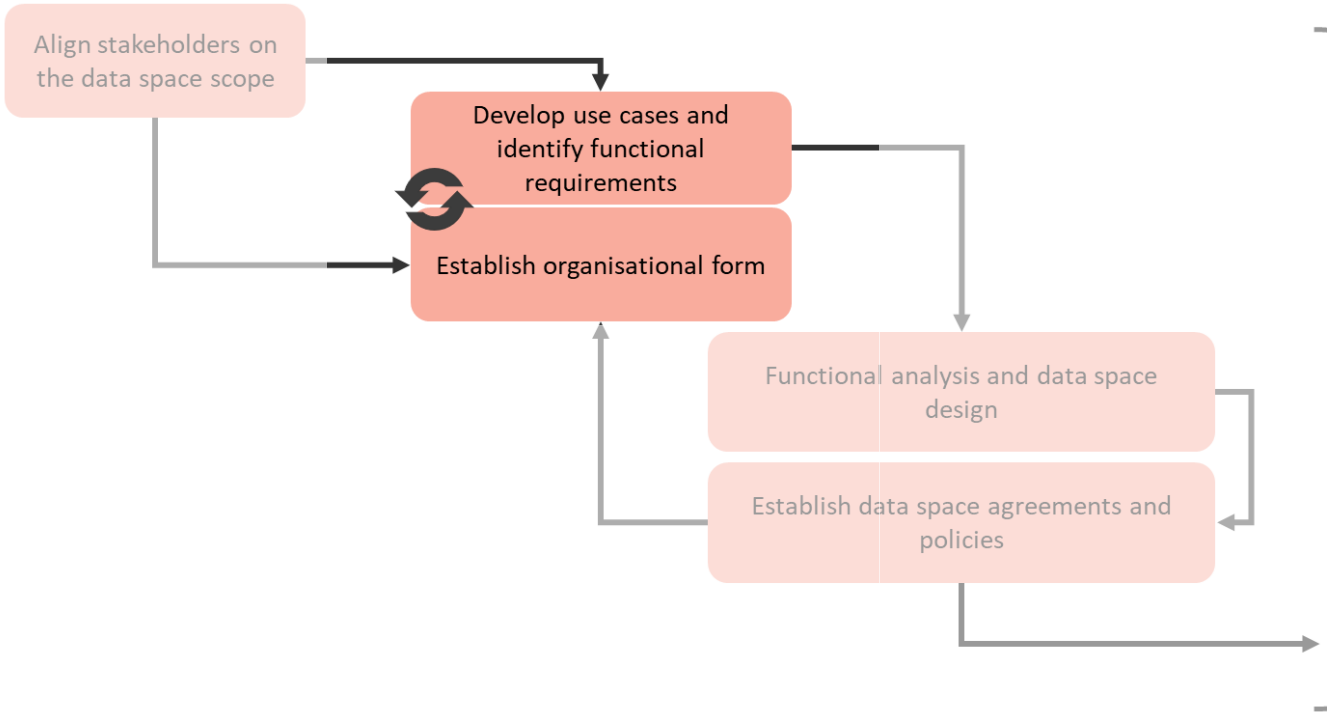
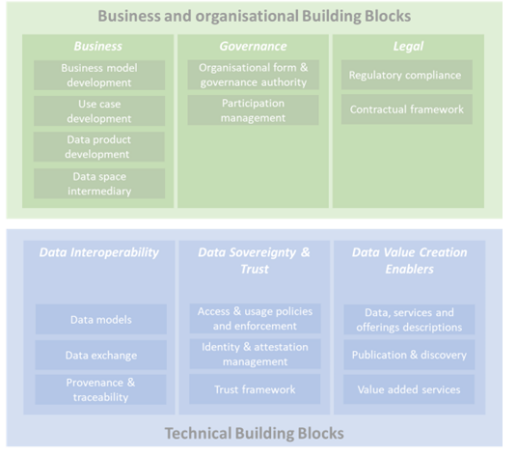
Co-creation: the preparatory stage







The development processes are explicitly connected to both the green and the blue building blocks. The development processes provide the order in which building blocks should be used to develop a data space. Additionally, the development processes help explain the relationships that are present amongst the building blocks.

Data Space Development Processes	A set of essential processes the stakeholders of a data space initiative conduct to establish and continuously develop a data space throughout its development cycle.
*	In the operational and scaling stages of the development cycle, processes such as maintenance and client engagement happen. These (and other processes) will be added to the co-creation method at a later stage.

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Co-creation: steps for preparatory stage

- Five complementary processes:
  1. Align Stakeholders on the Data Space Scope
  2. Develop Use Cases and Identify Functional Requirements
  3. Establish Organisational Form
  4. Functional Analysis and Data Space Design
  5. Establish Data Space Agreements and Policies

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DATA SPACES SUPPORT CENTRE

Explaining the use case

Electric cars, renewable energy, and flexibility in the energy grid

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The basics of the scenario

- The EU wants to create common data spaces for energy
- Our specific use case is energy flexibility

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Energy flexibility

- The wind blows; the sun shines
  - But not consistently
- Batteries store energy, flattening ebb and flow
  - But where to get them at scale?
  - Electric cars!
- Your new lingo for the day?
  - V2G: vehicle-to-grid technology

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How the flexibility works

- Consumers can choose to provide their batteries for use in the grid
  - Energy providers and distributors need to know when consumers make their batteries available
  - They need to know their characteristics
    - Size, charge levels, location
  - Also need mechanisms to pay for this usage
    - Personal data

Source: https://www.gridio.io/

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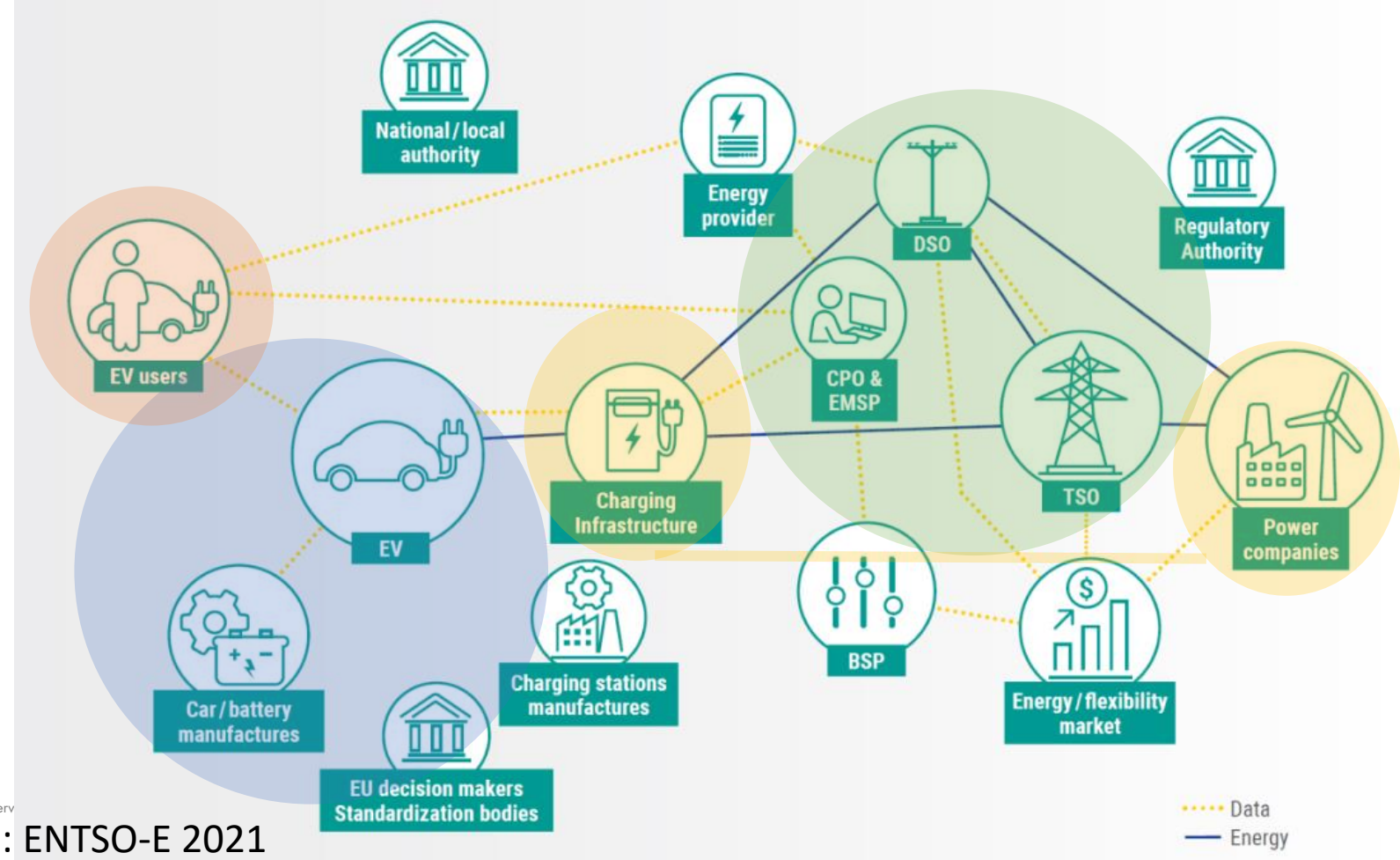
The actual relationships

- Don’t worry—we’ll simplify away the complexity!



Source: ENTSO-E 2021

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What data is required for our scenario?

TYPE	DESCRIPTION
METERING	How much energy is a device consuming.
DEVICE	What are the characteristics of the devices on the network, such as the charge level of a battery and its capacity.
PRICING	What is the price charged for the energy.
PERSONAL	If car owners will be compensated when their car batteries are used, they need to be compensated, and as such, identifiable.

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The stakeholders in the room

- Our main actors
  - Power companies (w/ chargers)
  - Energy distributors
  - Car manufacturers
  - Consumer associations
- Unrepresented
  - Policymakers
  - Data space intermediaries—one of our building blocks!
- The orchestrator for the data space?

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Power companies (w/ chargers)

- Representatives will tell you
  - Who they are and why they are important in the network
  - How their data is relevant

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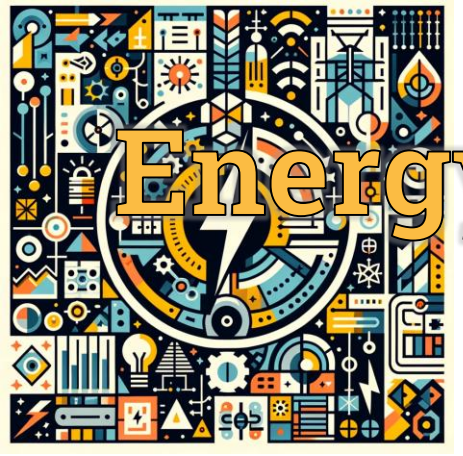

Energy distributors

- Representatives will tell you
  - Who they are and why they are important in the network
  - How their data is relevant

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Car manufacturers

- Representatives will tell you
  - Who they are and why they are important in the network
  - How their data is relevant

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Consumer associations

- Representatives will tell you
  - Who they are and why they are important in the network
  - How their data is relevant

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Those unrepresented people?

- Data space intermediaries
- European and Member State policymakers
  - Energy is a highly regulated sector
  - If the actors cannot find a reason to co-operate, do policymakers step in?
- Speaking of stepping in…
  - Who is leading this?

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A few last words

- As the moderator, I may ‘help’ a stakeholder to clarify their position on a particular topic
- While we are all very friendly, I would hope that we have some disagreements
  - Realising, of course, our actors are not necessarily energy experts

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DATA SPACES SUPPORT CENTRE

Explaining the business case

Building block: business case development

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The business side of the discussion

- The moderator for the business side will try to bring forward the following points
  - Establish the value proposition for each stakeholder
    - Is this cost sharing to meet policy goals or joint innovation?
  - Clarify alignments and misalignments
    - Determine whether those misalignments can be bridged

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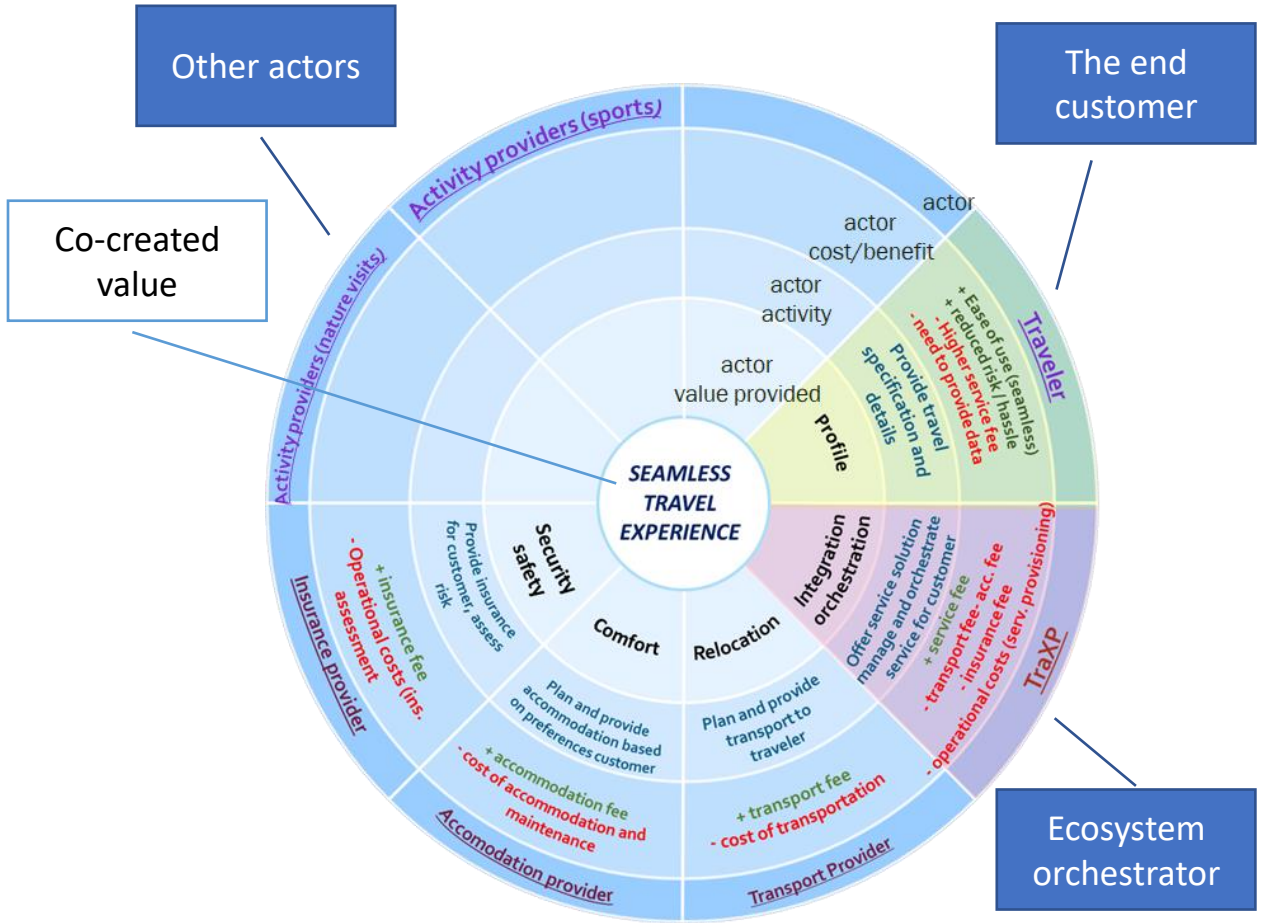
Collaborative Business Modelling

- Provide the business model radar for the application of the data space
- Meaning the process for which you have created the value network
- Use the same actors as in the value network

Steps…

1. Move from the centre, where the ‘co-created value’ is described
2. Then define the actor’s
    1. Value gained
    2. Activities
    3. Costs and benefits



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Value Network Figure

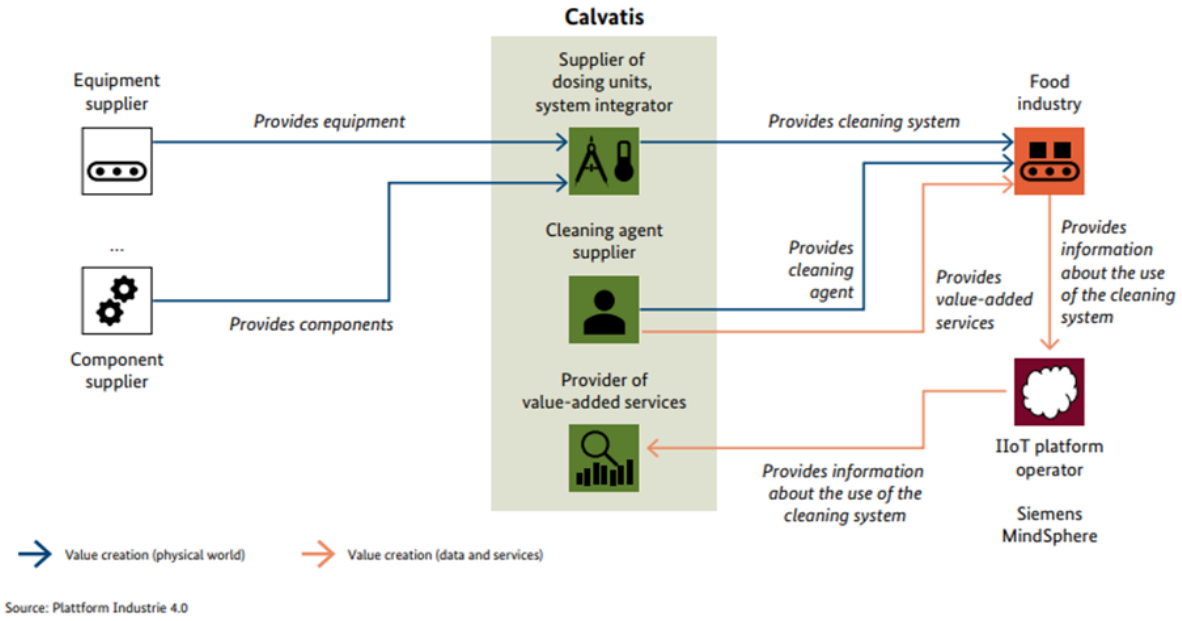
- Provide a Value Network figure, in which the actors in the example which you find most relevant are displayed.
- Additionally insert lines on the value creation in the physical world (actual movement of goods) and the value creation on data and services.

On the different streams you can plot the business models which are used as explained by: Business Model Pattern List | Business Model Navigator

A good app to use to create a value network is www.draw.io

Example of use cases based on the St. Gallen University

Figure 6: Value network for the practical example: IIoT platform for optimising the use of cleaning agent



Source: Plattform Industrie 4.0

See the example

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To our working space

- Let’s start with the data space business model radar
  - A blank space for the actors to work in
  - https://miro.com/app/board/uXjVNi49JSo=/

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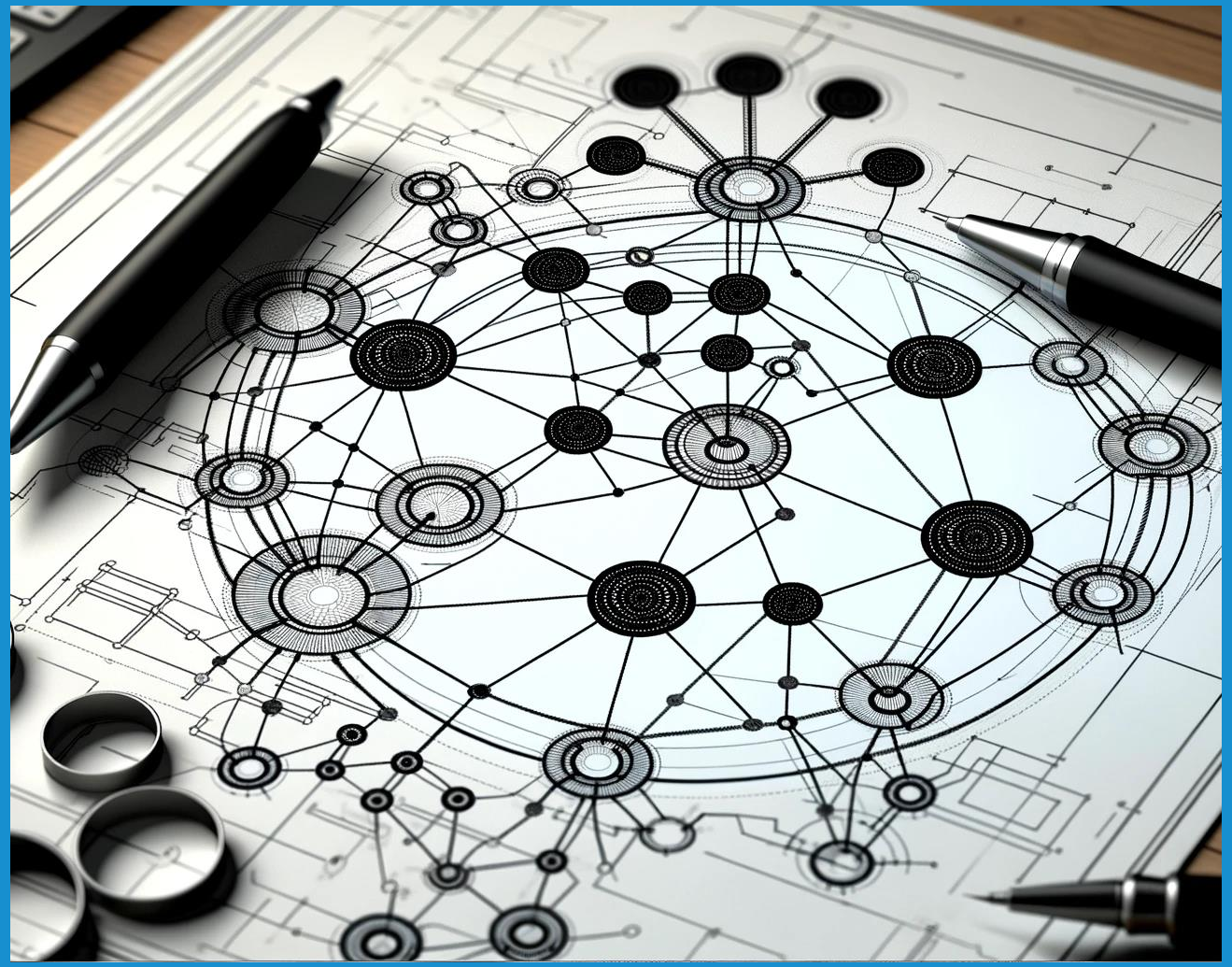
DATA SPACES SUPPORT CENTRE

Exploring the technical side

Building blocks: data model and trust framework



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Outlining some technical topics

- Given the types of data that need to be exchanged and the business case, we can explore
  - Identity and Attestation Management, specifically the type of attestation
  - Elements of the data model

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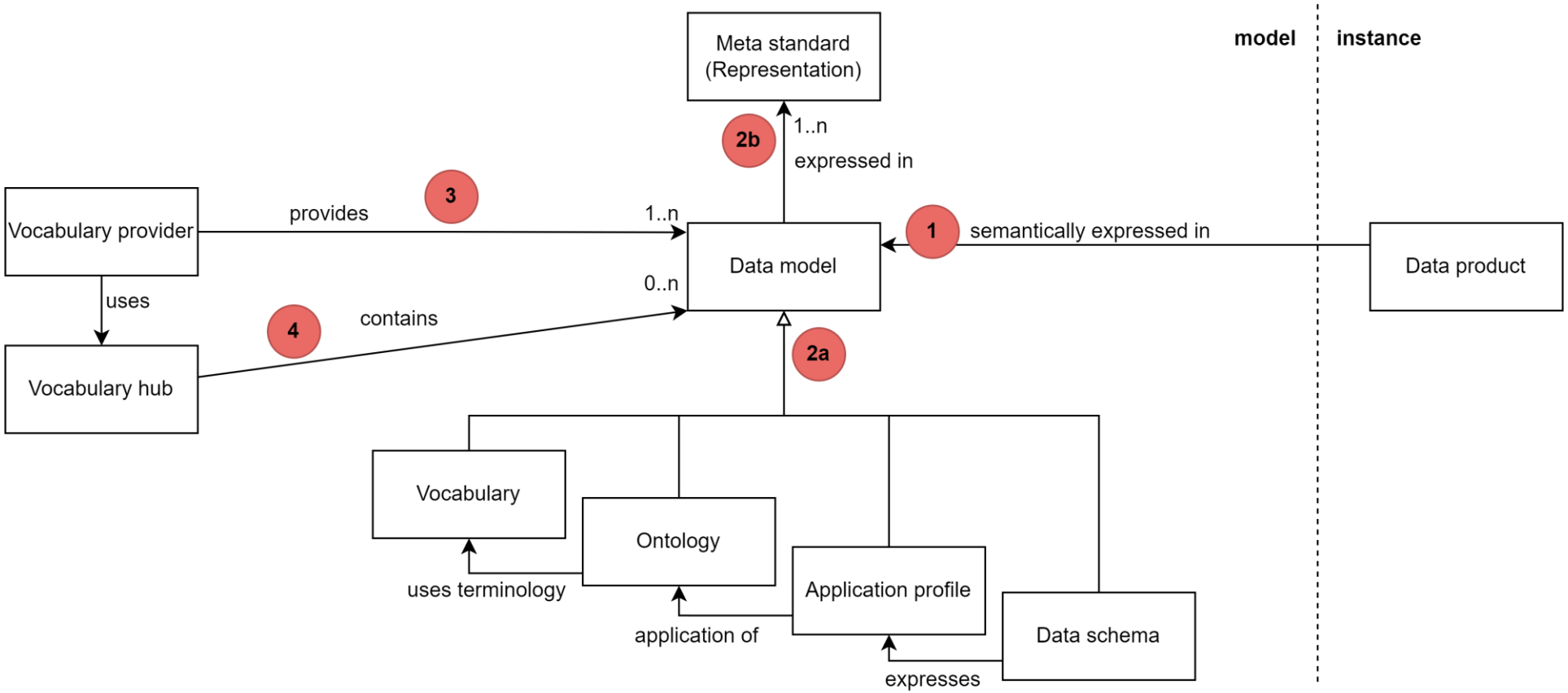
Four models to exchange data



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DATA SPACES SUPPORT CENTRE

Exploring the governance side

Building blocks: Organisational form and governance authority

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The governance side of the discussion

- To agree on the governance side, we will…
  - Decide which stakeholders should be a part of the governance authority
  - Use a decision tree in the building block to determine the correct form

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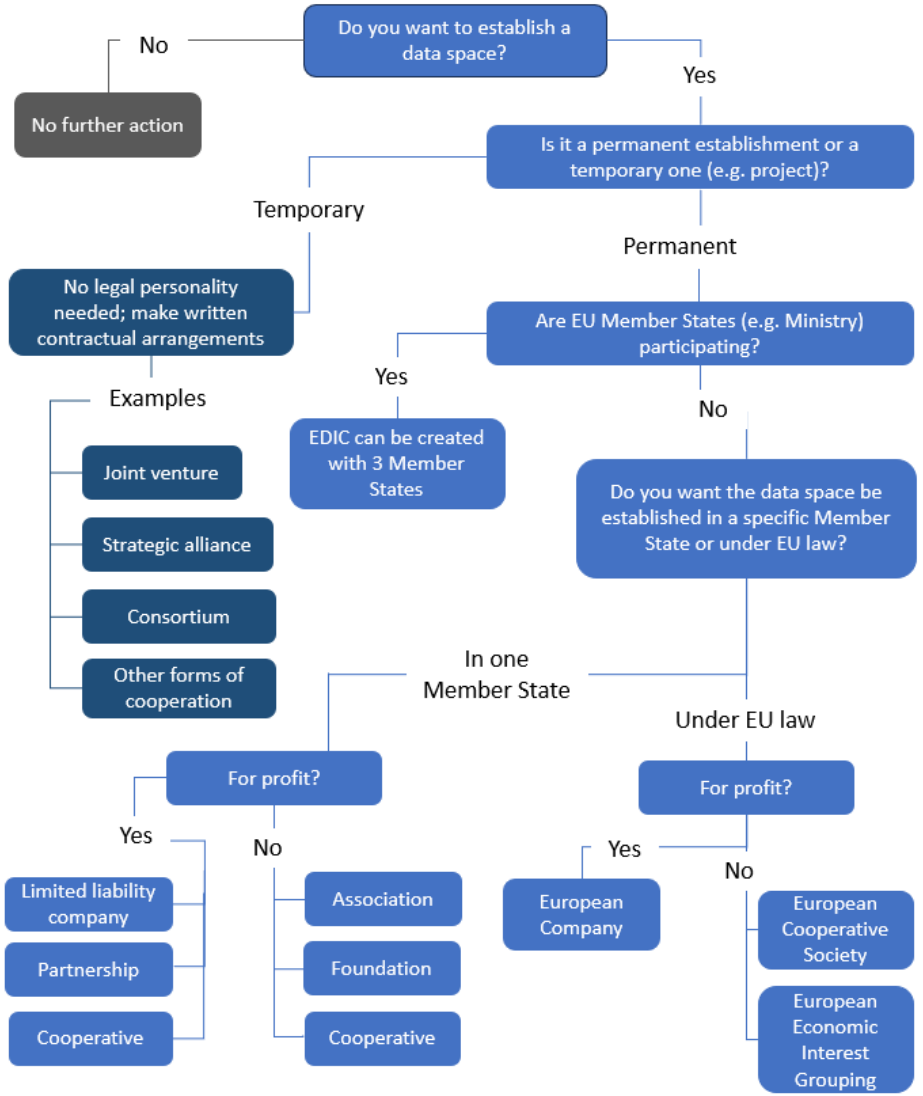
Decision tree on organizational form



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Governance Authority

Are there specific **legal requirements** due to the chosen legal form of a data space?

YES

- Need to follow the rules (regarding indicated aspects);
- For example: non-profit association should have (1) general assembly of members and(2) management board

NO

- More flexibility in terms of the creation...

BUT!

Still might be subject to limitations set by law

Depends a lot on business model

Needs to consider good practices for corporate governance aspects

SIZE

How many people?

Depends on the size of a data space

COMPOSITION

How many and what kind of data space bodies? (for example, are specific working groups or committees needed)

COMPETENCIES

- rules on competencies of the executive,
- rules on the representation of the data space in dealings with third parties,
- rules on the creation of working groups and committees

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PARTICIPATION MANAGEMENT

Onboarding

- In Accession Agreement;
- What are the **terms and conditions** for **joining** the data space?
- What are the requirements for **verifying** participants (e.g., strong identification)?
- What are the **attributes** that participants must have?
- What are the **requirements for the products and services available in the data space** (e.g., language, data formats, etc.)?
- What are the conditions and standards that facilitate the security, performance, interoperability and observability of data transactions?
- How to ensure participants maintain control over their data and services?
- What are the conditions for restricting the access and usage policy?

Roles/Categories of participants

- What are the roles identified in the data space? (Examples: data space members, data space users, data space service providers, data space participants: data provider, data recipient)
- What are the minimum requirements for participation (LINK TO REGULATORY COMPLIANCE)
- What are the application rules assigned to the specific role?
- How to make sure that the governance of a data space will be inclusive?
- How to achieve inclusivity in decision-making processes?
- How the participants can interact and collaborate with each other (feedback channels and regular engagement opportunities)

Offboarding

- In Accession Agreement;
- How to ensure a smooth exit/transition of a participant while safeguarding the interests of all involved parties?
- How to address the issues related to data rights/holdings, transfer, and termination of access of exiting participant?
- Need to conduct periodic and thorough reviews of the data space governance framework

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Contractual Framework

Governance Framework

Data space agreements

Constitutive agreement

- Background and purpose (why data space is created)
- Identification of the parties (members of the data space initiative)
- General responsibilities and liability
- Reference to possible governance mode, general terms and other general commitments.

Accession Agreement

- Enables the acceptance of General terms and conditions by additional adhering parties
- Written declaration;
- Can be different for specific role of the participant joining the data space.

Agreements related to enabling services

General Terms and Conditions

DS level

- Definitions;
- Role-specific Responsibilities;
- Fees and Costs;
- Confidentiality;
- IP rights;
- Data protection;
- Accession policy;
- Technical standards and commitments;
- Cybersecurity and risk management policies;
- Complaints policy and dispute resolution rules.

DT level

- General conditions for data sharing;
- Standardised licenses model on data usage rights;
- Standardised terms and conditions for data products;
- Mechanisms to calculate fee (if applicable).

Data transaction agreements

Data Product Contract

- Identification of the data;
- Admitted purposes;
- Restrictions of use of data product;
- Usage rights of the data product;
- Termination;
- Terms related to the use of derived material;
- Fees and monetisation;
- Data security;
- Clauses related to third party rights (data protection, intellectual property rights, confidentiality).

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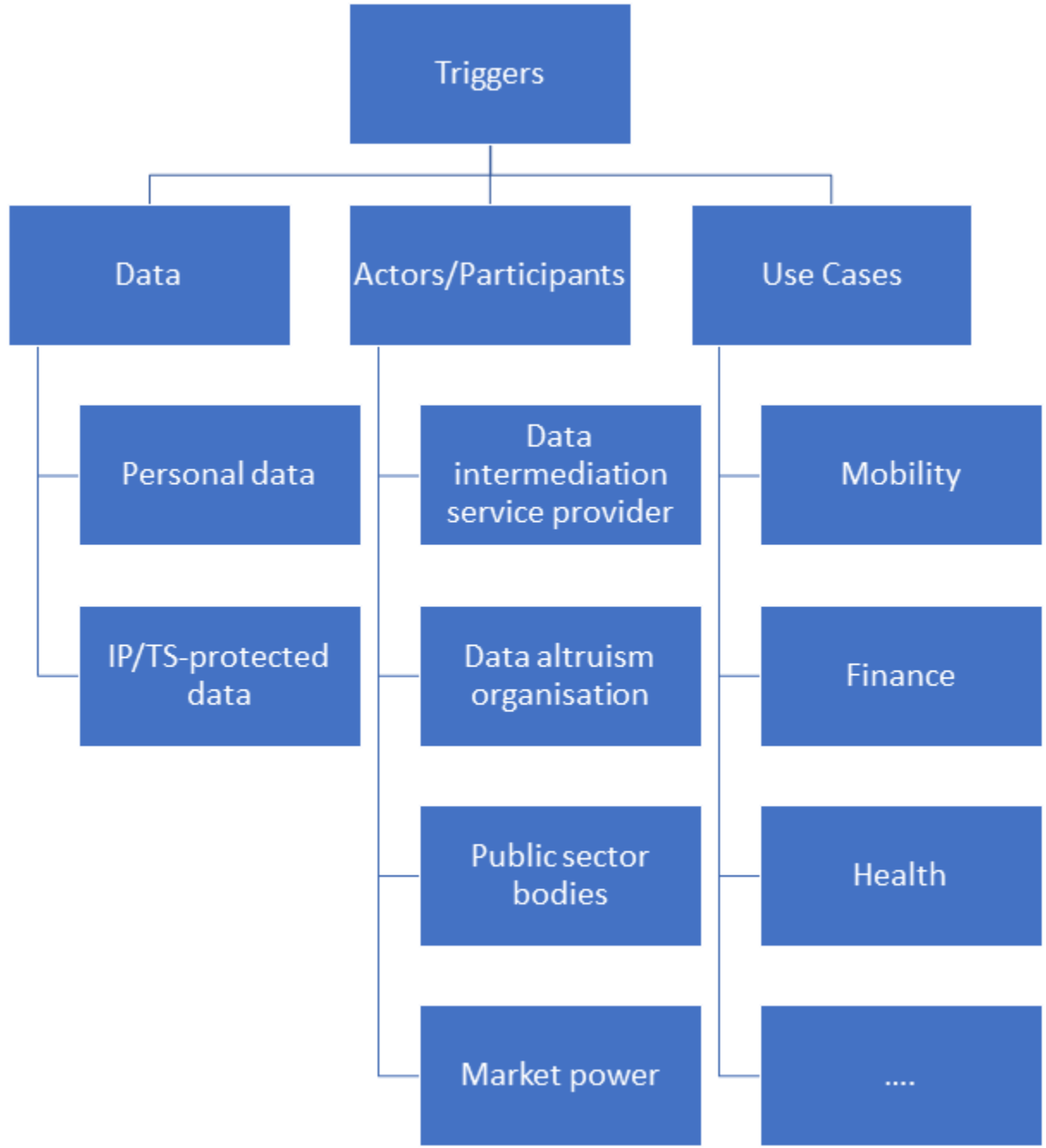

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