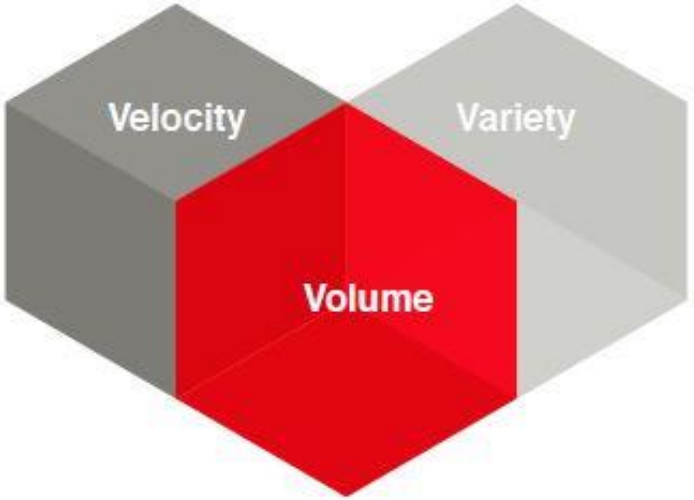
POLIMI GRADUATE SCHOOL OF MANAGEMENT

# DATA FOR GOOD

FEDERICO BARTOLOMUCCI, PHD
ASSISTANT PROFESSOR IN MANAGEMENT ENGINEERING

## WHAT'S YOUR INITIAL THOUGHT OF DATA?

## WHAT ARE BIG DATA




Letouzé, 2012; Ahmadi, Dileepan, & Wheatly, 2016; Baro, Degoul, Beuscart, & Chazard, 2015

### Crumbs

- Credit and Transaction Data
- Transportations
- GPS
- Satellites
- Online Searchers
- Physical sensors
- Social Media

### Capacity

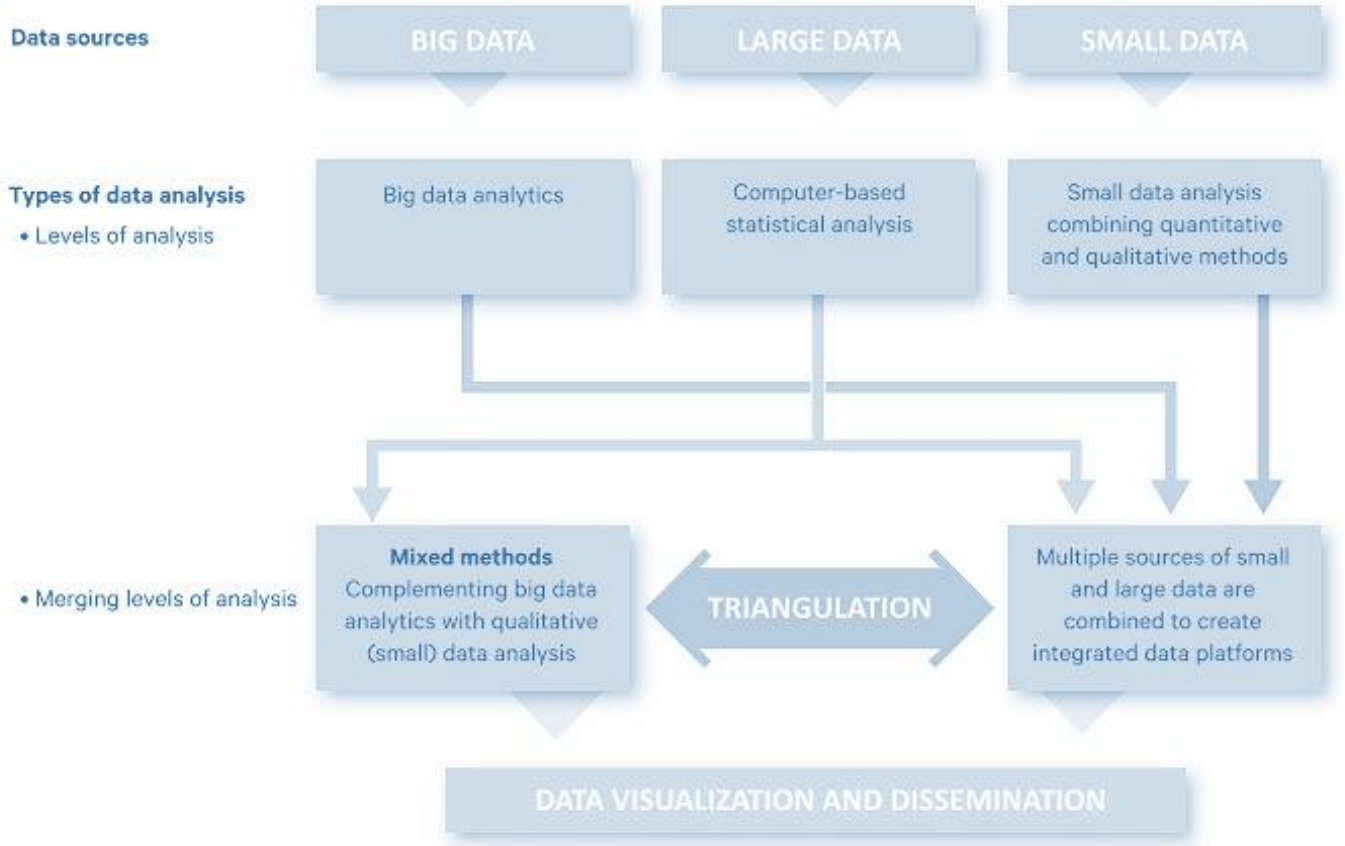
- Artificial Intelligence
- Machine Learning
- Blockchain
- Remote Monitoring
- Sensoring
- Text Mining
- Cloud Computing

### Community

- Private actors (Companies, Startups, Financial institutions)
- Public (PA, Research centers)
- Not for Profit Sector
- Individuals

## COUPLING BIG DATA WITH SMALL DATA

When talking about data for good we refer to the use of different types of data (big data, large data and small data) and data science techniques to tackle societal challenges.




The Rockefeller Foundation (2020)

Look behind raw data and see their qualitative nature.

**DATA ARE:**

Data are things that happen, that exist or are perceived and that **someone decides** to observe, count and classify.

Highlighting the **component of choice** contained in the data creation process is crucial because often only, or above all, **what is being measured matters**.

The concept of **data is not absolute** but, so to speak, **relational**. Something qualifies as given in virtue of the relationship it has with the subject that **produces it, collects, and uses it**, be it an individual or a research community.

*Un dato di fatto*, Cassia, Kalchschmidt, Paleari, Francesci Brioschi ed.

**DESIGN YOUR OWN PORTRAIT WITH DATA**

**1) Is it your first meeting on data for the social economy?**

Yes 

No 

**2) Do you come from a big city?**

Yes 

No 

**3) What is your gender?**

Male 

Female 

Other 

**4) How do you inform your self?**

Podcast 

Social Media 

Newspapers 

**5) How many siblings do you have?**

None

One 

Two 

More 

*Adapted from Giorgia Lupi*

**COULD WE LEVERAGE ON DATA TO GENERATE POSITIVE IMPACT?**

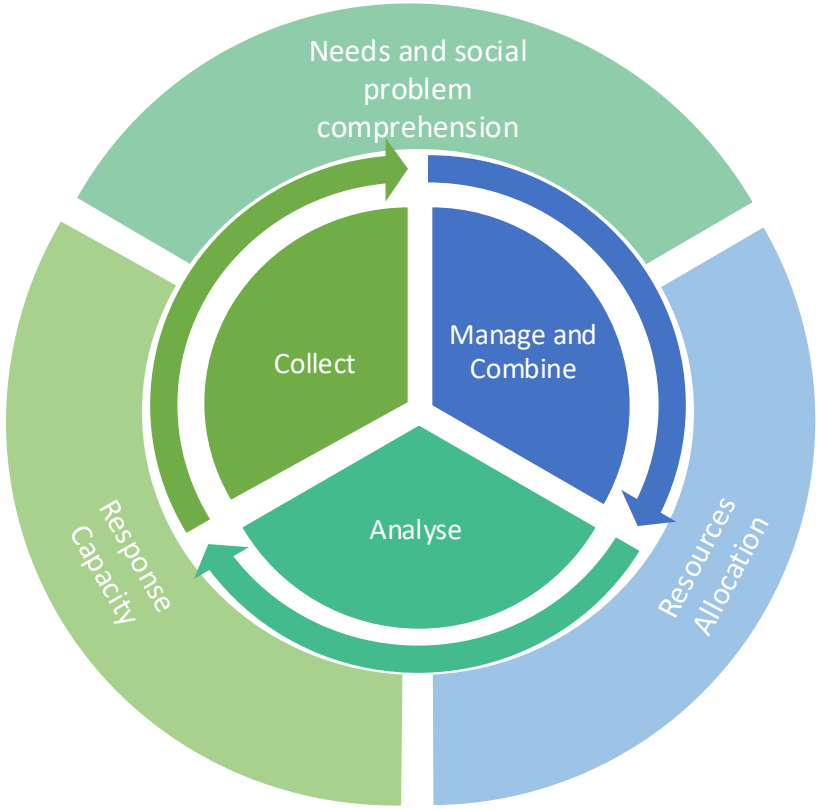
## BENEFITS OF DATA FOR GOOD


Adapted form: Towards a European strategy on data sharing for the public interest. EU Commission (2020)

**POSSIBLE USES OF DATA**

| | | |
|---|---|---|
| **Backward looking** | DESCRIPTIVE<br>**Situational Awareness**<br>What Happened? | DIAGNOSTIC<br>**Cause and Effect Analysis**<br>Why Did It Happen? |
| **Forward looking** | PREDICTIVE<br>**Forecasting**<br>What Will Happen? | PRESCRIPTIVE<br>**Impact Assessment**<br>What Should Be Done? |

## USING DATA IN THE SOCIAL SPHERE




**Data can be used to:**

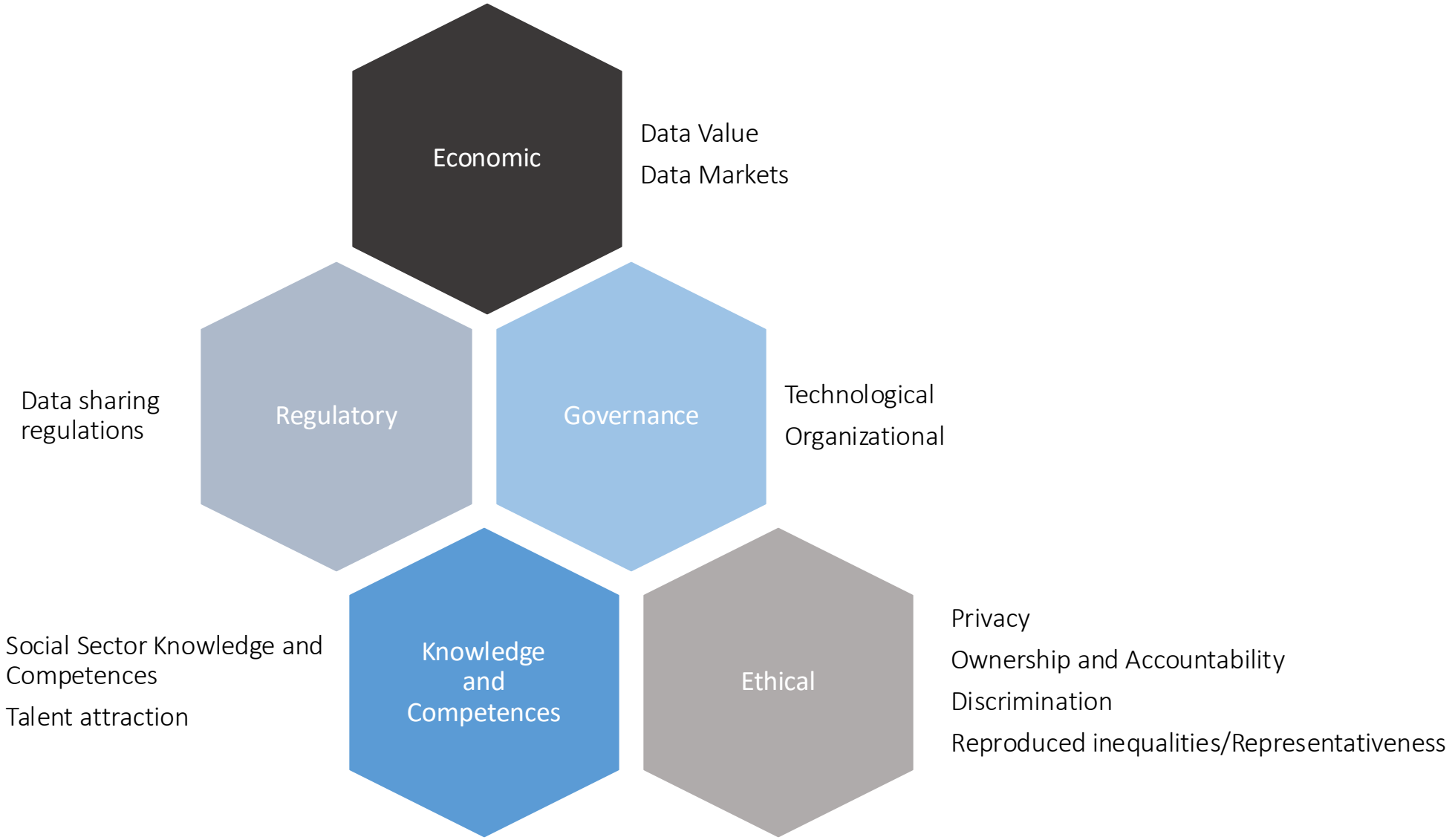
- Understand and anticipate the emergence of social phenomena and needs;
  *e.g. Understand poverty distribution in rural areas, identify elderly people in abandonment conditions.*

- Improve the collective ability to respond to social needs;
  *e.g. Put in place preventive actions to school leaving, offer more granular services targeted to those that are in need.*

- Optimize resources allocation. Promote the development of new outcome-based impact finance models.
  *e.g. Optimize resources allocation through reducing false positive and false negatives in aid distribution*

**WHY AREN'T WE SYSTEMATICALLY DOING THAT?**

**OPEN ISSUES**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Data sharing regulations
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Organizational
Knowledge and Competences
Social Sector Knowledge and Competences
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Ethical
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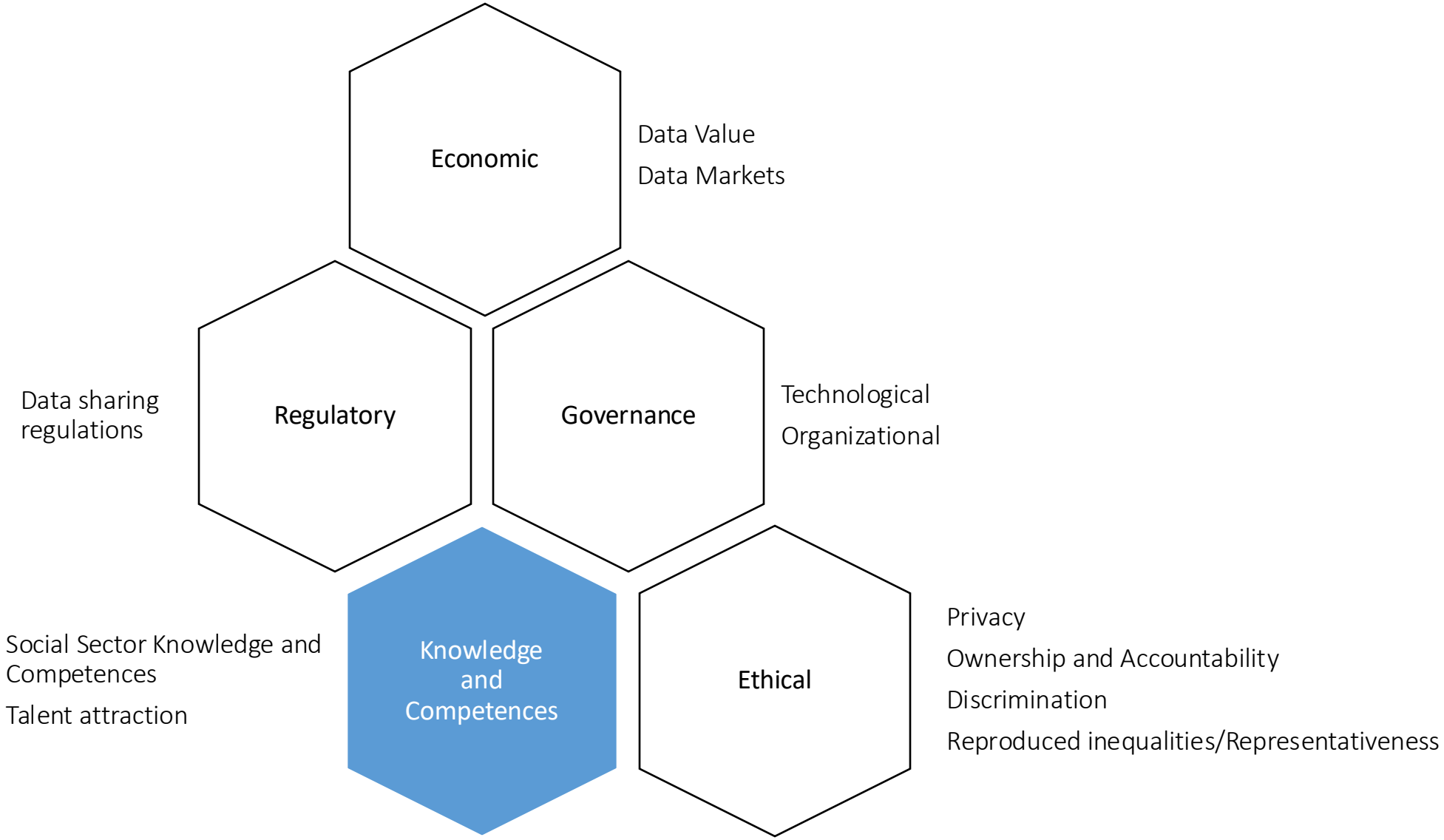
Discrimination
Reproduced inequalities/Representativeness

**OPEN ISSUES**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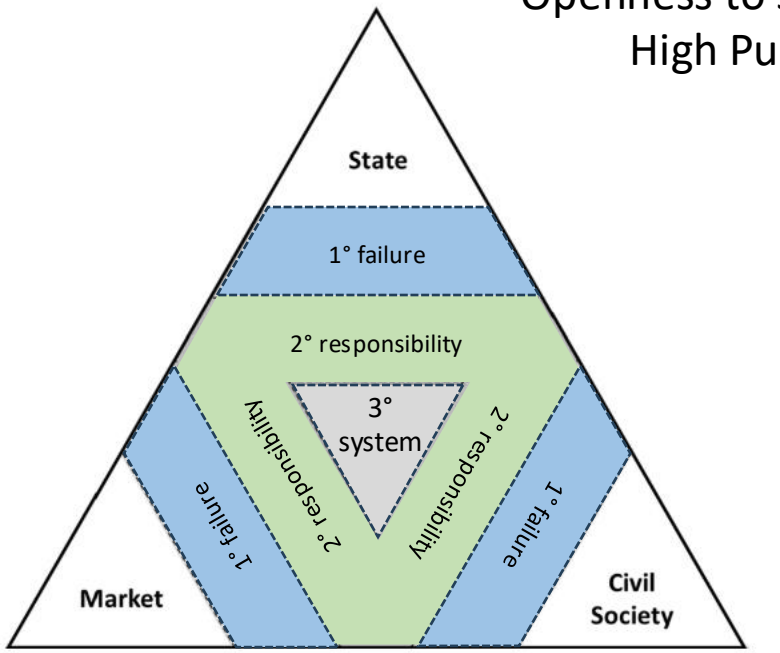
## STATE OF THE ART

### PUBLIC

Good amount of data
Lack of competences
Openness to share them
High Purpose

### PRIVATE

Abundance of data
Abundancy of competences
Reluctance to share
Lack of purpose

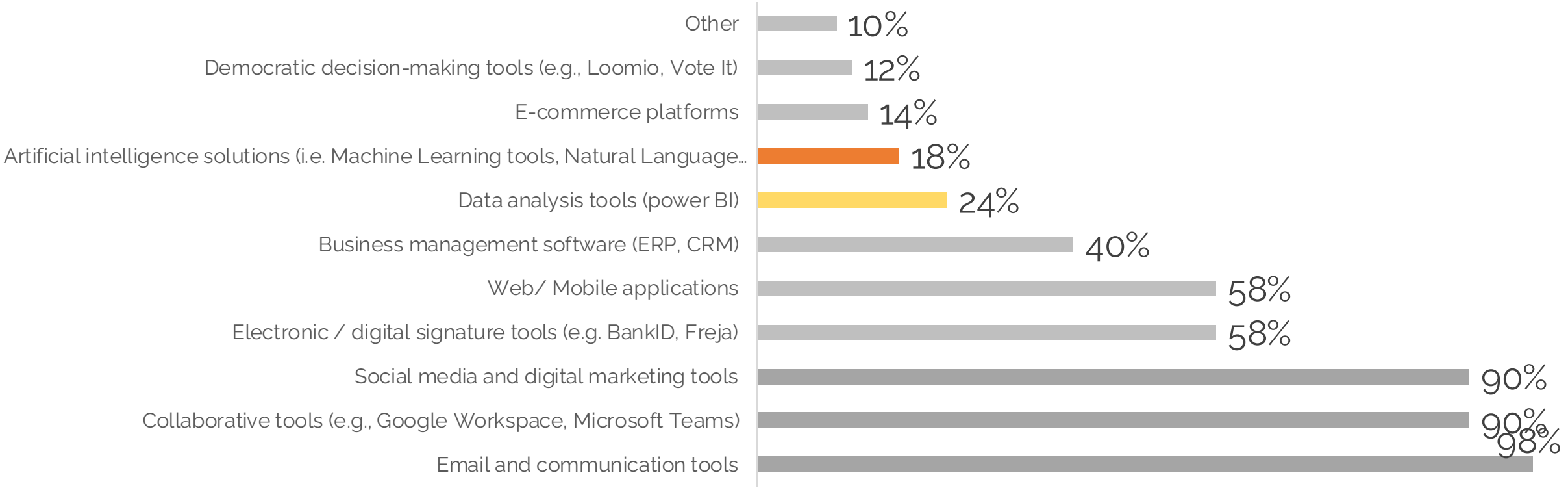



Societal layers of complexity.
van Tulder and Keen (2018)

### NON FOR PROFIT

Lack of data
Lack of competences
Abundance of needs

# DATA USE IN SOCIAL ENABLING ORGANIZAITONS

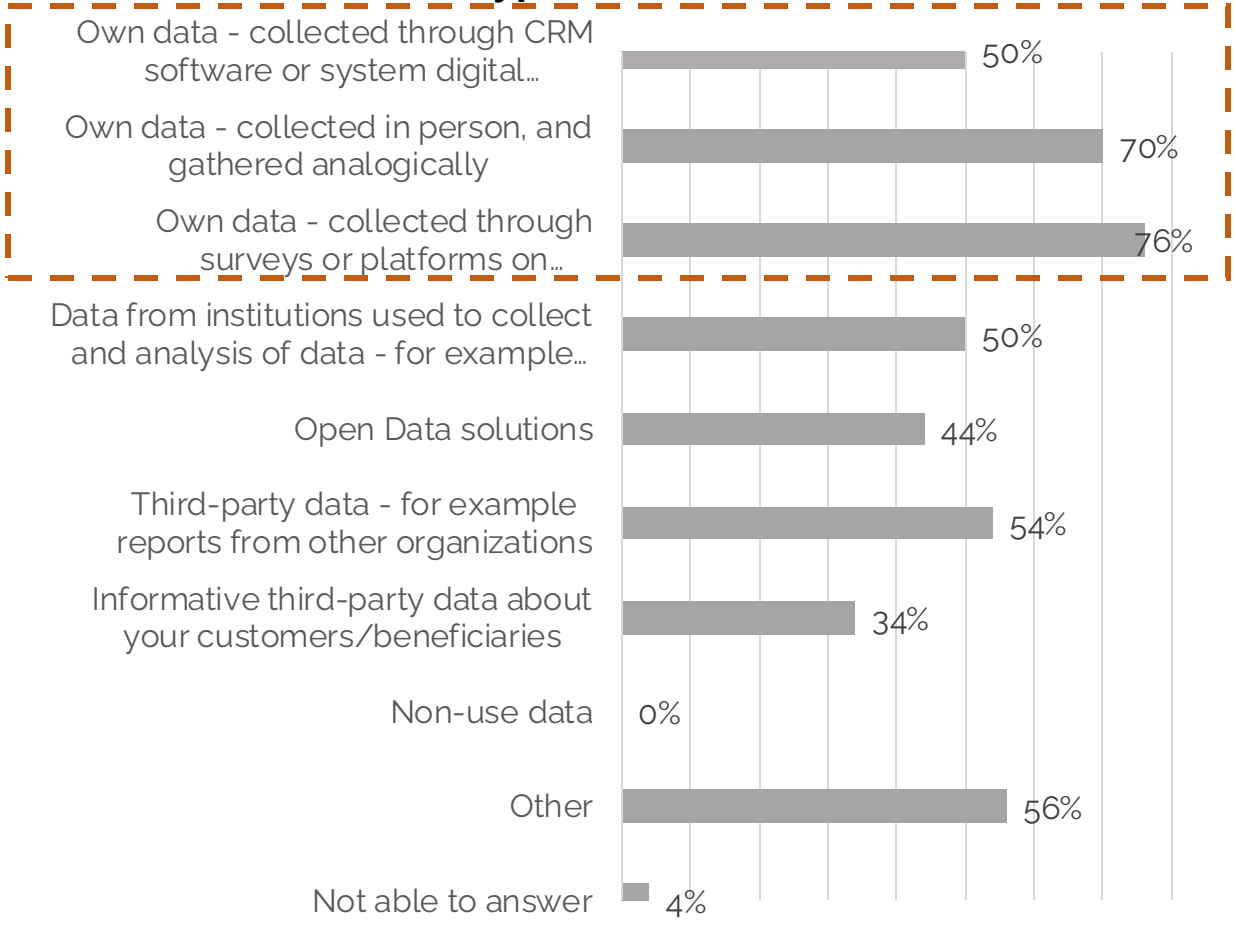




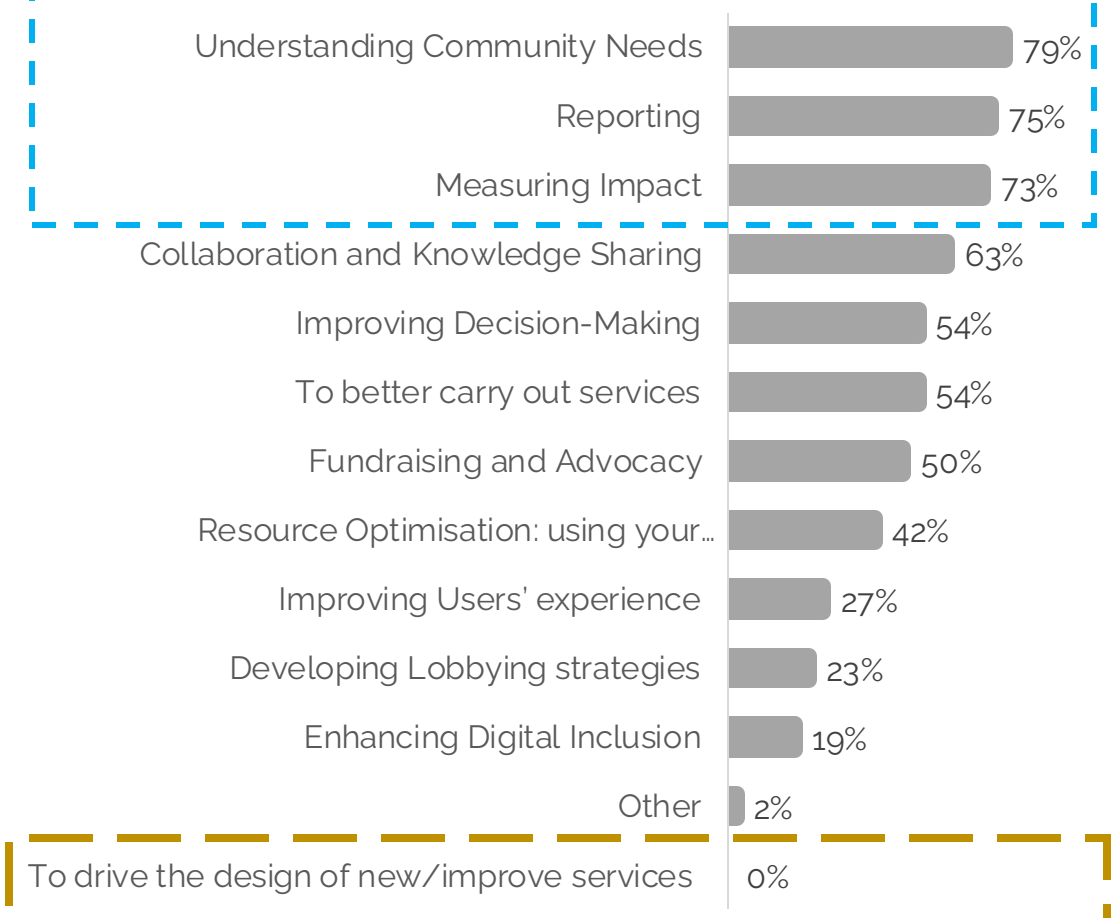

Do-Impact Survey, results are based on 50 responses from SE organizations across Europe.

# DATA USE IN SOCIAL ENABLING ORGANIZATIONS

## Type of used data



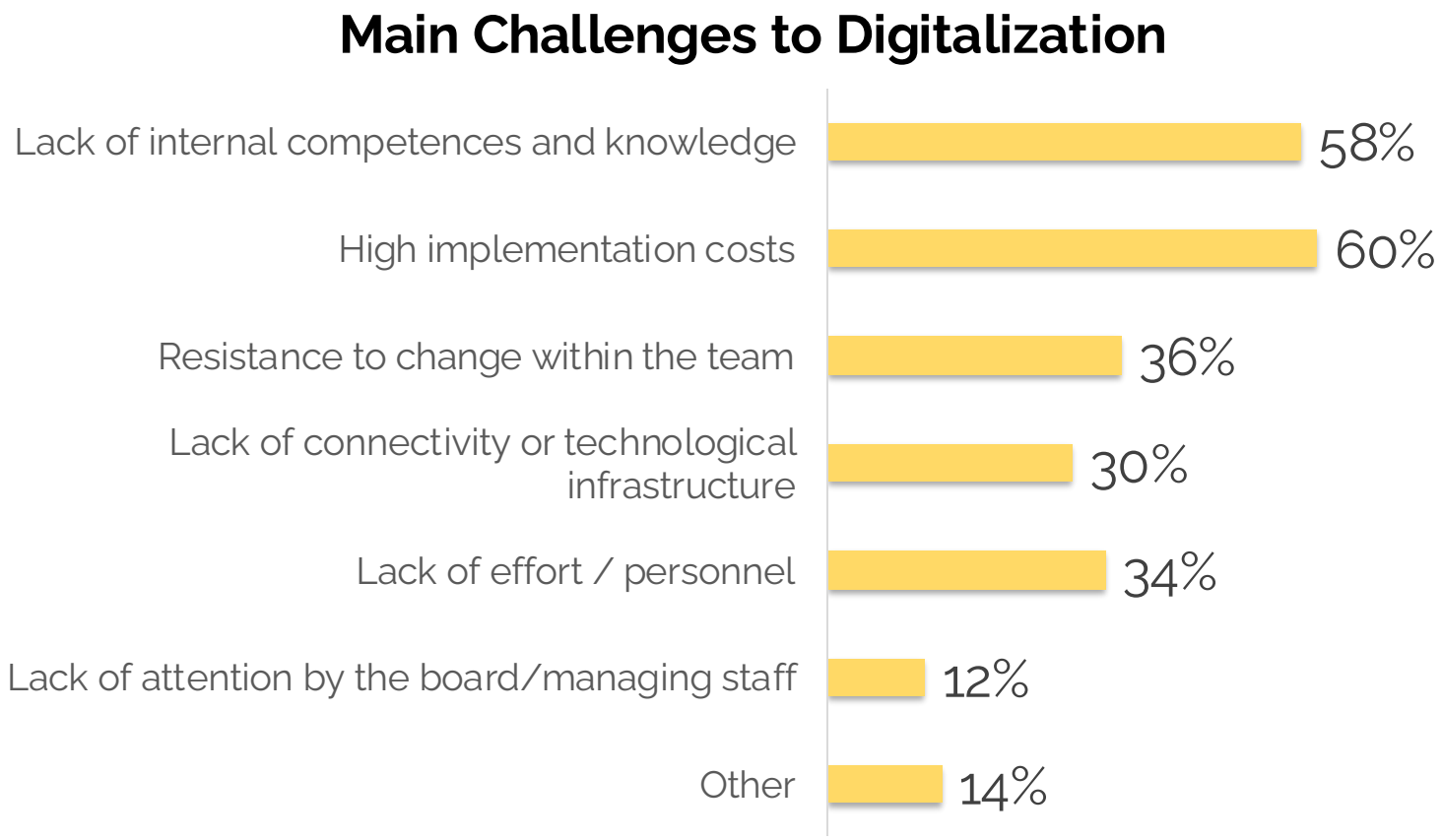

## Main purpose of data use






Do-Impact Survey, results are based on 50 responses from SE organizations across Europe.

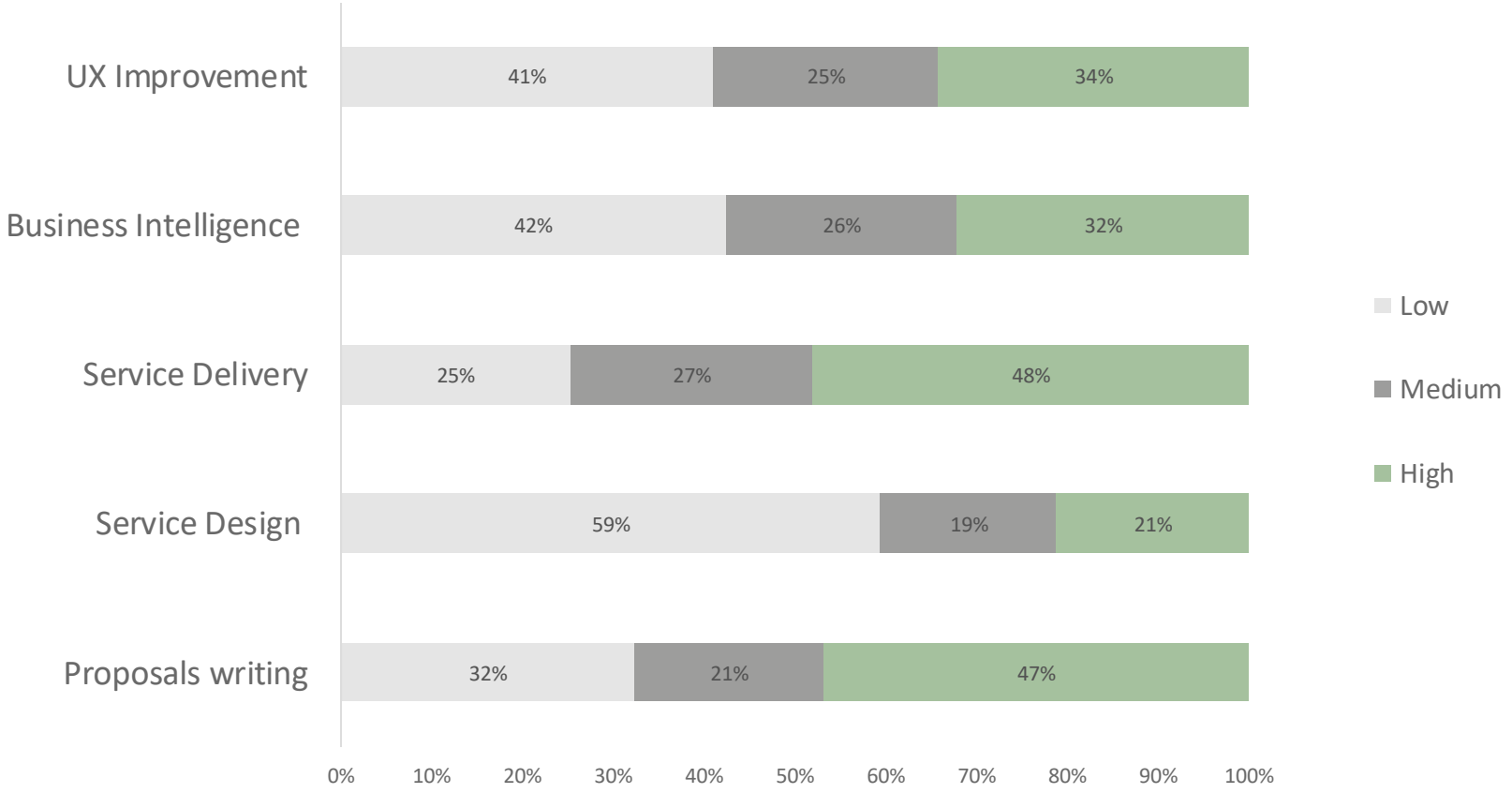
## CHALLENGES: SOCIAL ENABLING ORGANIZATIONS




Do-Impact Survey, results are based on 50 responses from SE organizations across Europe.

# CHALLENGES: SOCIAL ECONOMY ORGANIZATIONS

For which purposes do you use data and how often?

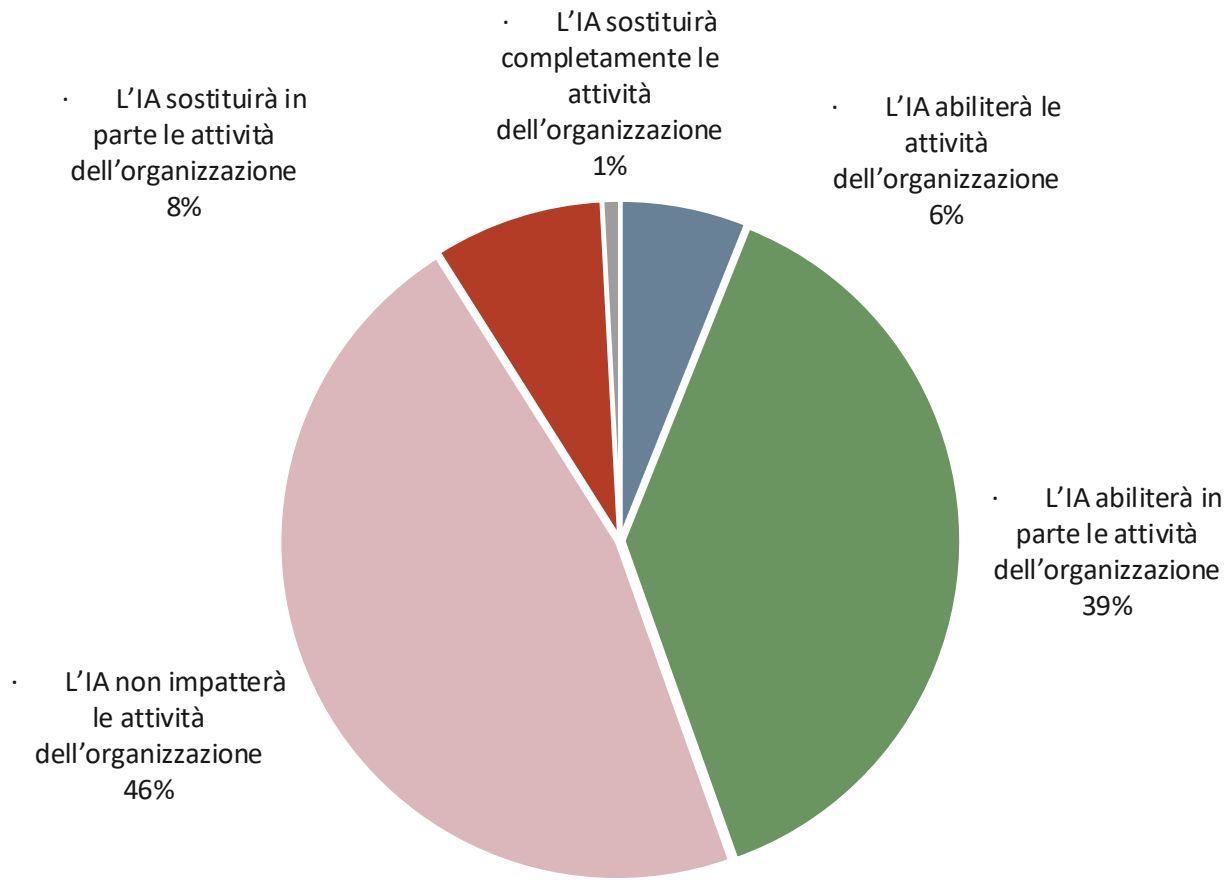





MUSA-Spoke 4 Survey, results are based on 980 responses from social economy organizations in Italy

# CHALLENGES: SOCIAL ECONOMY ORGANIZATIONS

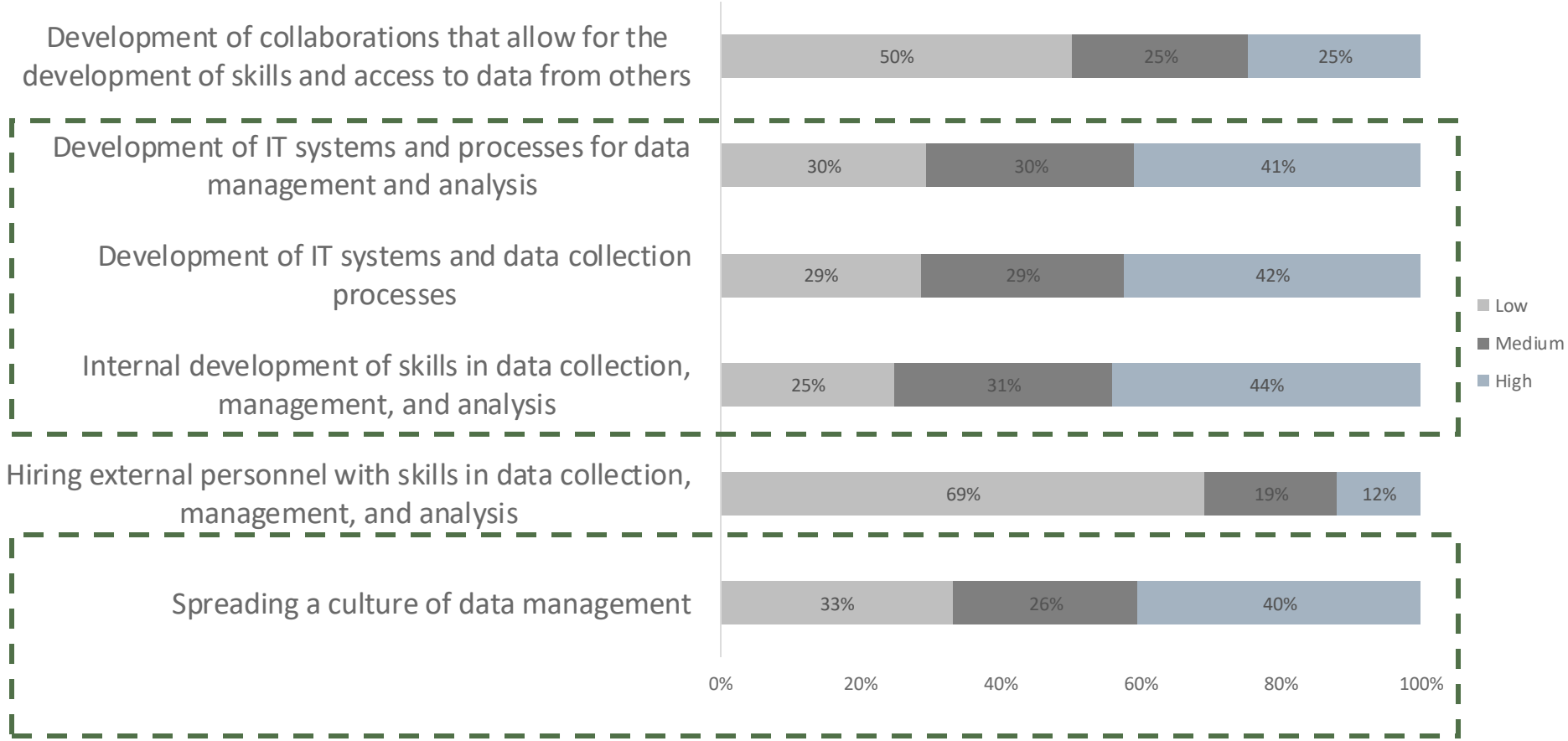
How will AI impact your organization?




MUSA-Spoke 4 Survey, results are based on 980 responses from social economy organizations in Italy

# CHALLENGES: SOCIAL ECONOMY ORGANIZATIONS

Which investments do you need?



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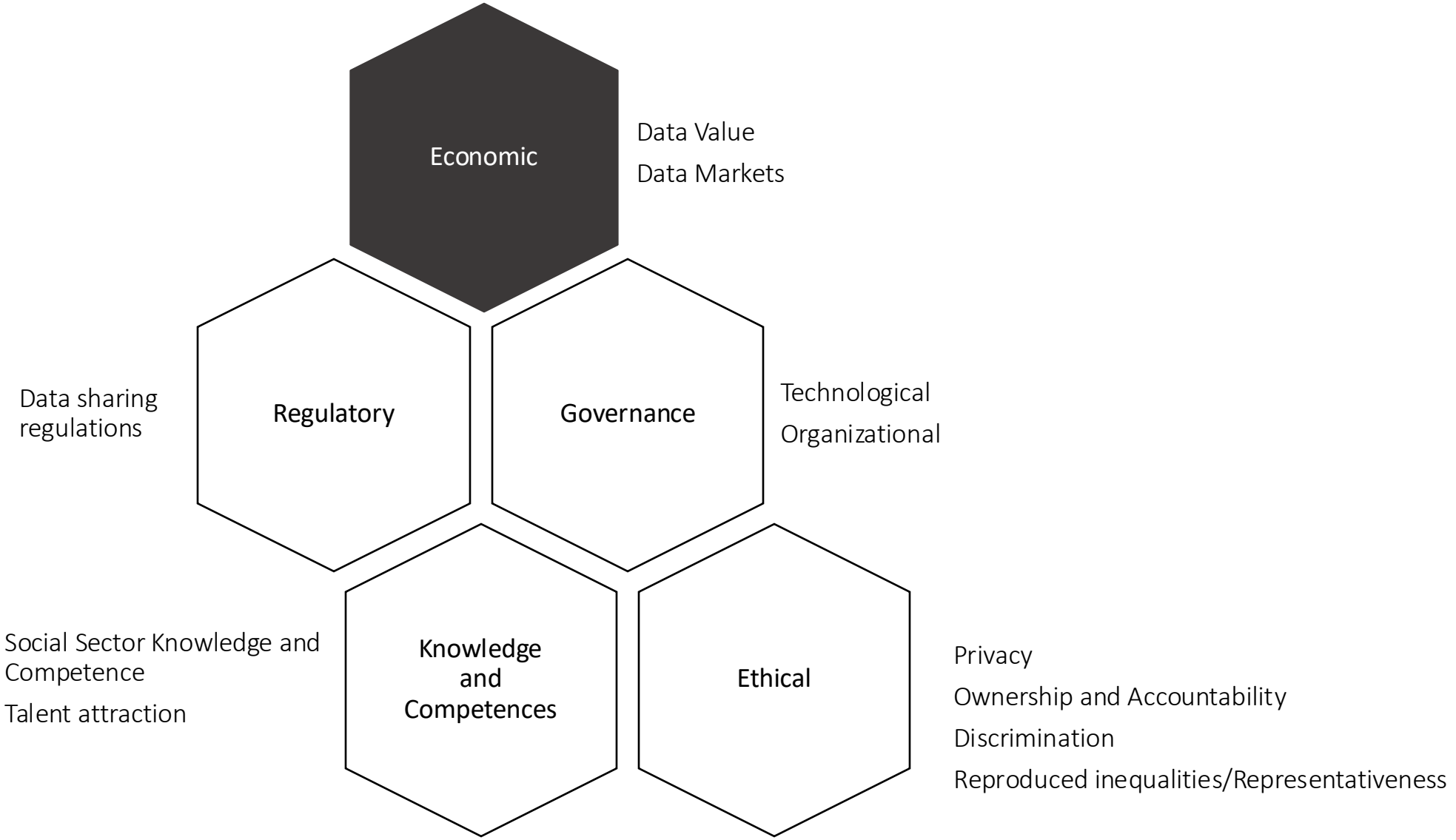
**OPEN ISSUES**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**DATA IS NOT THE NEW OIL**

1. **Anyone**, from individuals to governments, can generate data.

2. It is easy to use and reuse data for a variety of purposes **without depleting** it.

3. It is **easy to copy and replicate** data.

4. **New value from a given data set can be obtained** on an ongoing basis through additional investments in infrastructure, technology or complementary data.

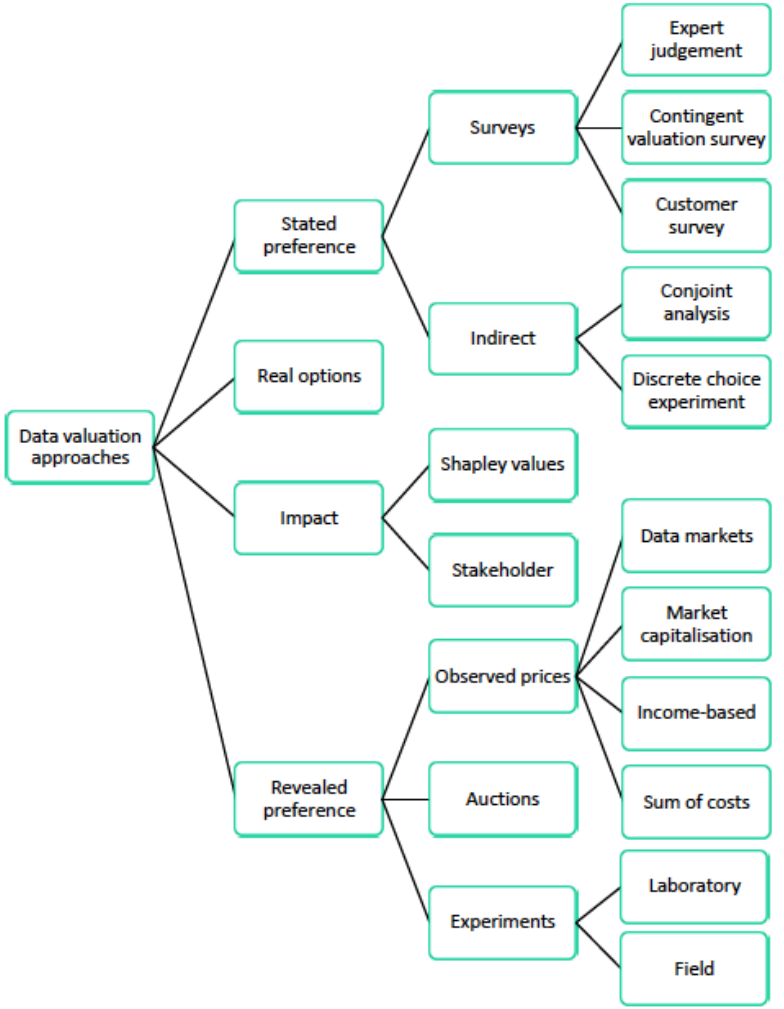
## DATA EVALUATION METHODS

**COST** approach involves identifying the total costs to generate, collect, store and replace the data, and costs if lost, determining the profit margin and calculating the value of the subject data.

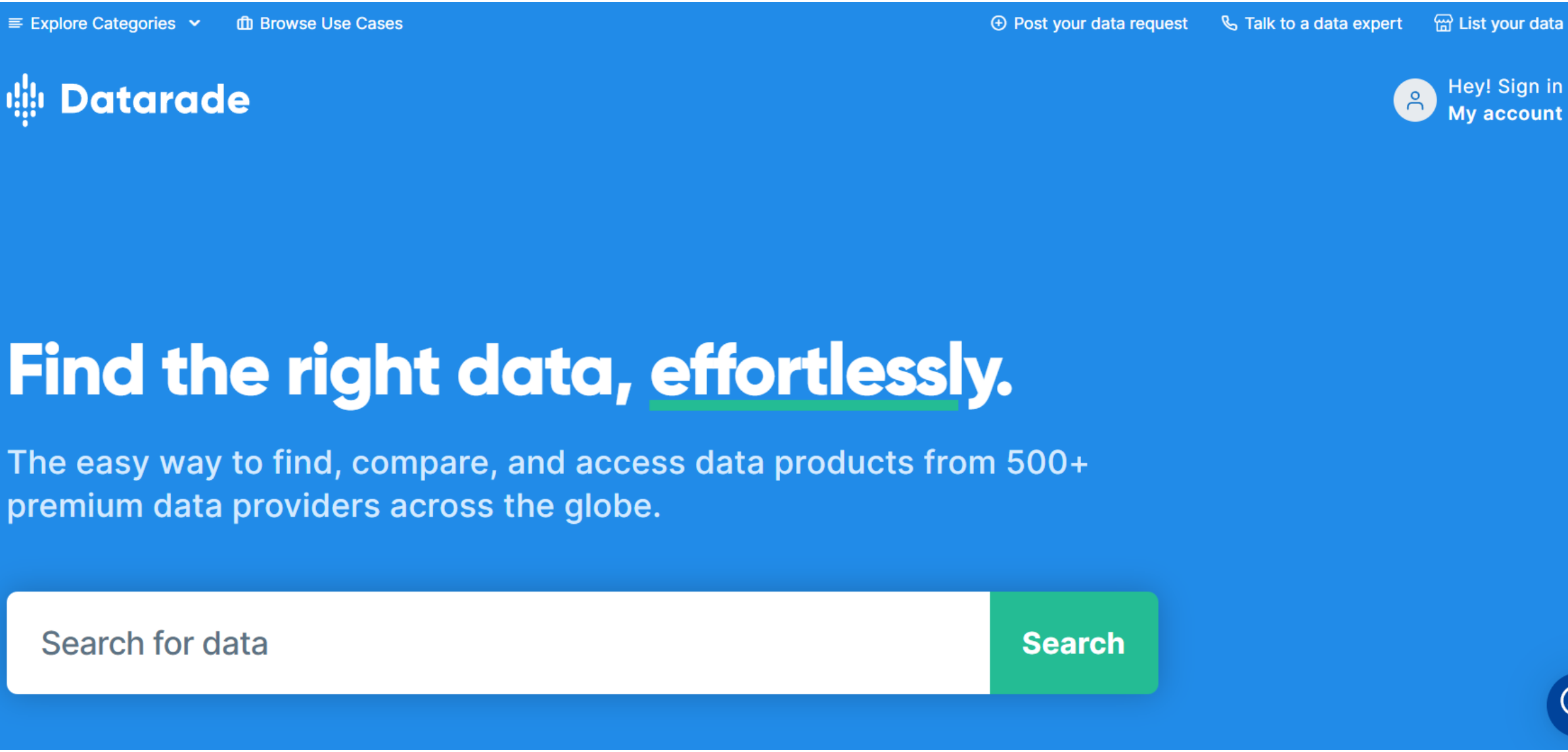
**INCOME** approach measures the impact data has on a company's bottom line by estimating incremental revenue, costs and capital, and the impact on future cash flows that companies can derive from the data.

**MARKET** approach measures the current value of data based on what others pay for it or comparable assets in an active marketplace.

**IMPACT** approach measures the value of data based on the social impact its use may generate.



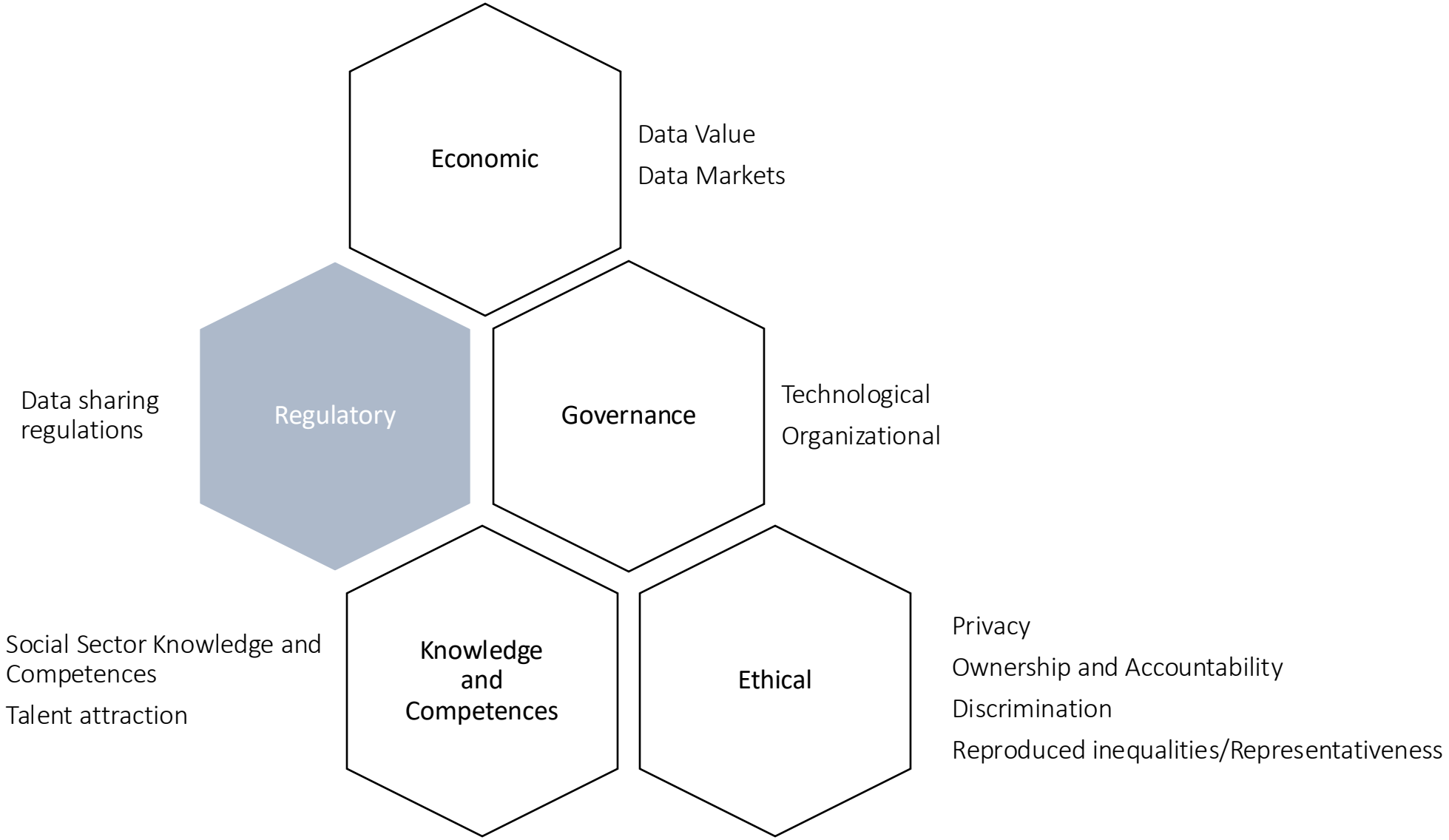

*Typology of valuation approach by Coyle and Manley (2022)*






Nikander, P, and Elo, T (2019) Will the data markets necessarily fail?

**OPEN ISSUES**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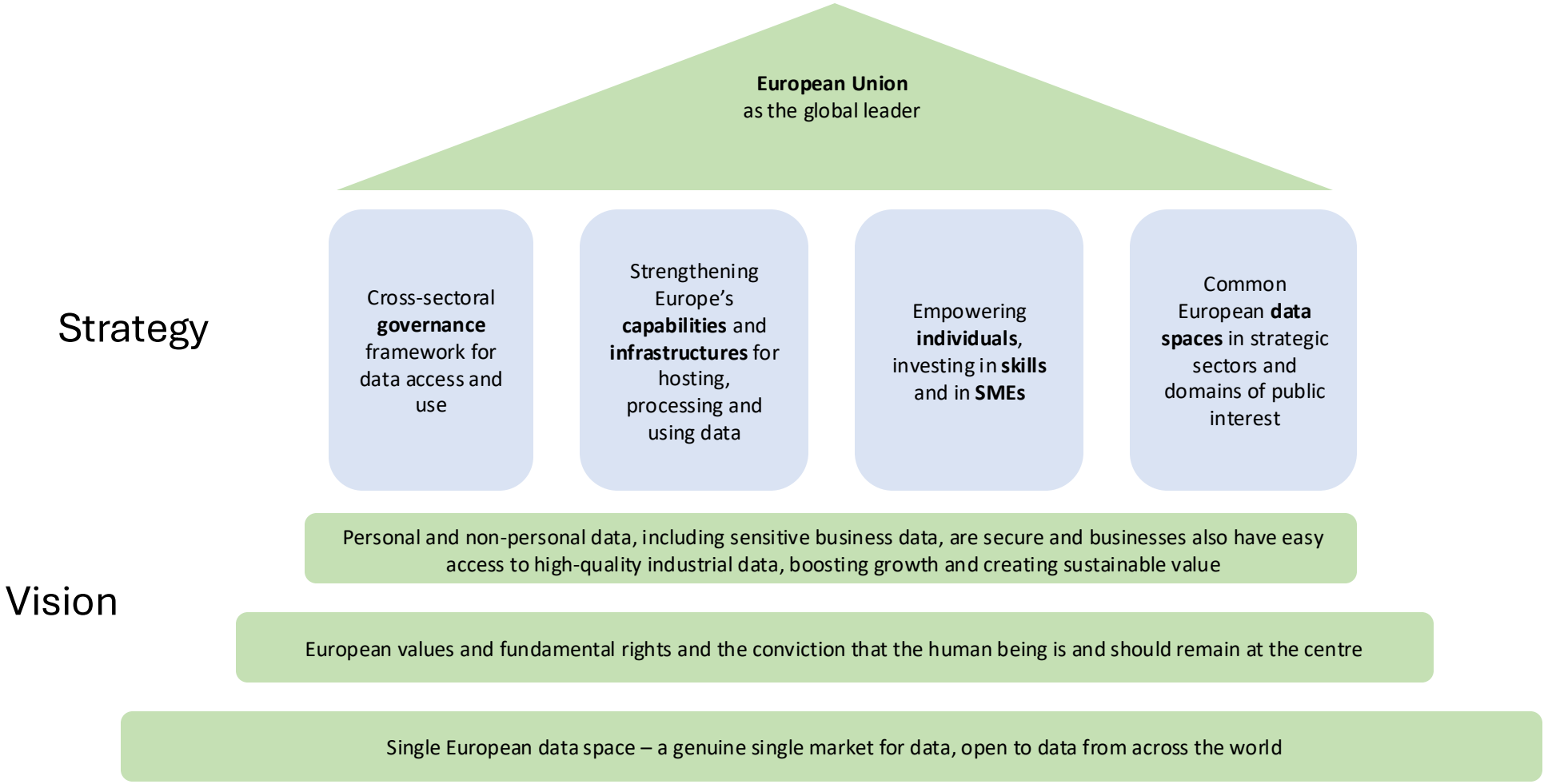
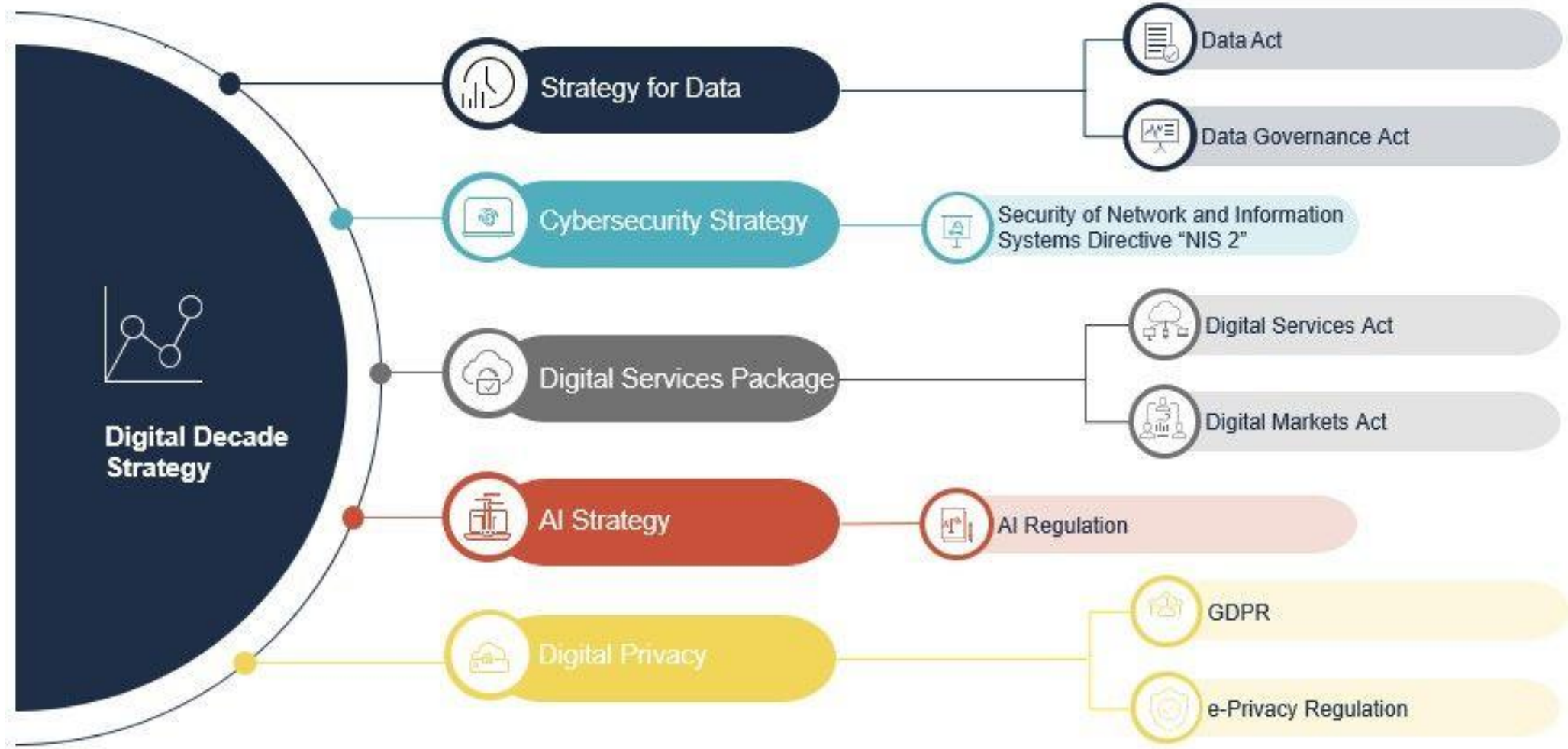
A **European Data Strategy** to make Europe a global leader in the data-agile economy (February 2020). A step toward this vision has been the creation of the DATA GOVERNANCE ACT and the DATA ACT.



## EU STRATEGY FOR DATA AND AI




SOURCE: https://www.dechert.com/knowledge/onpoint/2022/8/eu-data-and-digital-drive--an-overview-of-forthcoming-legislatio.html

## DATA GOVERNANCE ACT REGULATION

### THE KEY POINTS OF THE DATA GOVERNANCE ACT

- Making public sector data available for re-use
- Sharing data between companies, for remuneration in any form;
- Allow the use of personal data with the help of a "personal-data sharing intermediary“
- Allow the use of data for altruistic reasons" to entities registered in a "Register for organizations for data altruism".

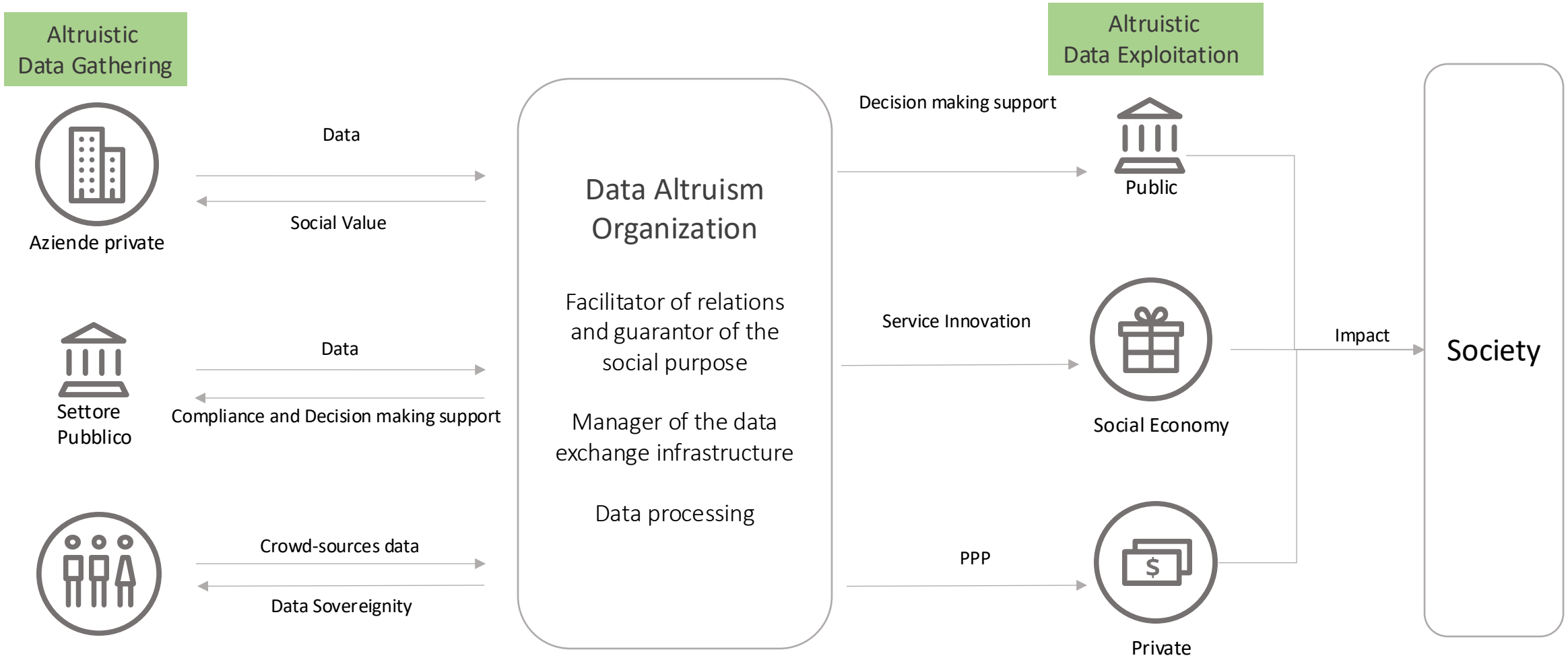
### DATA ALTRUISM ORGANIZATIONS

-Pursue general interest objectives;

- Carry out its own not-for-profit activity and not be connected in any way with subjects that carry out activities for this purpose;

- If other activities are carried out, other than those involving "data altruism", they must be legally separated from the latter, which must have its own autonomous and independent structure.

## DATA ALTRUISM ORGANIZATIONS



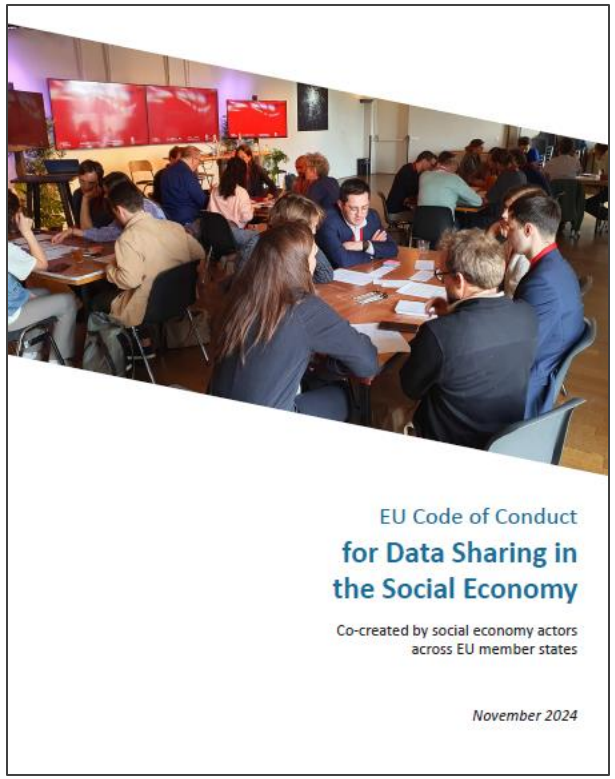
## SOCIAL ECONOMY ACTION PLAN

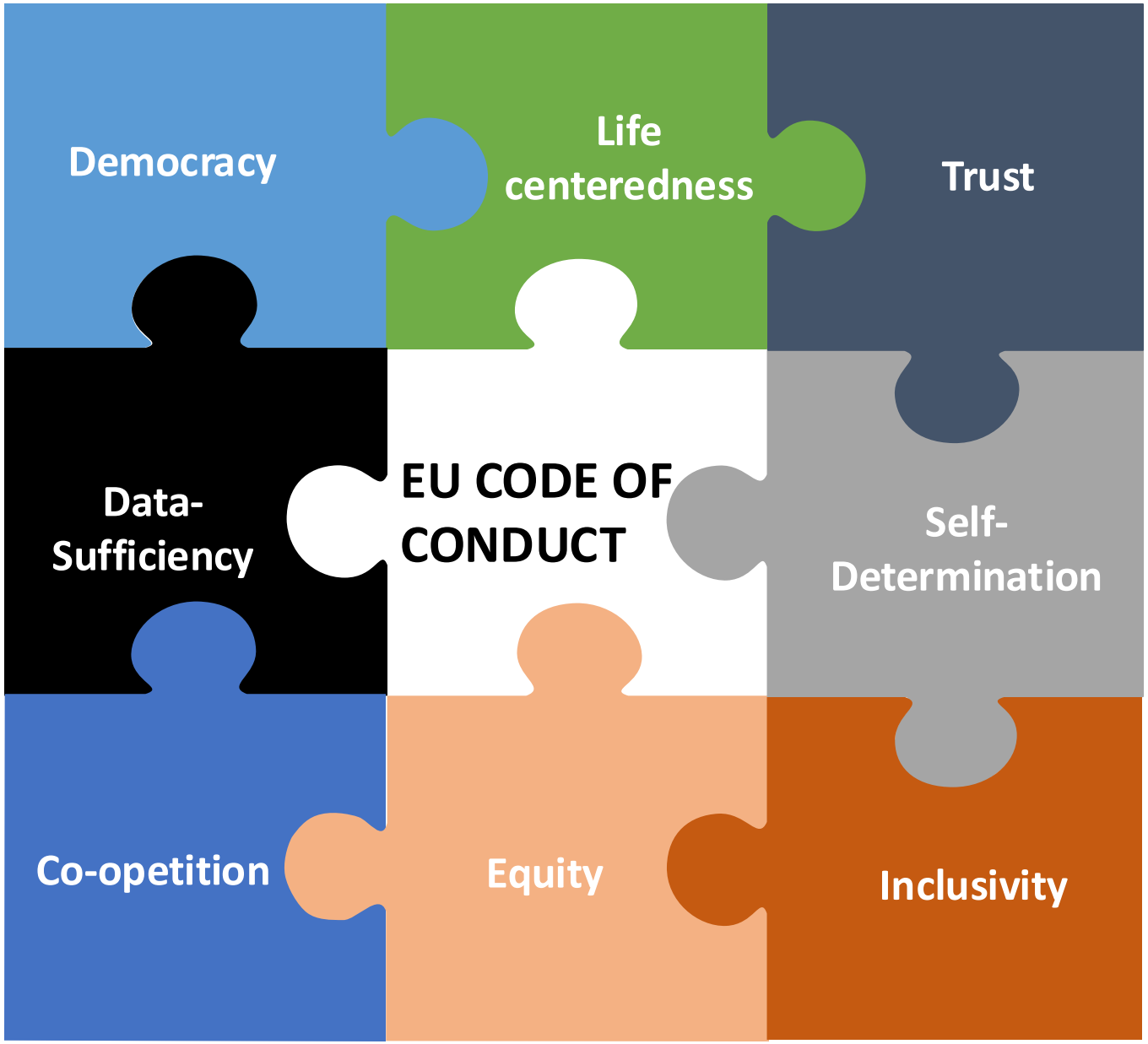
| Green Transition | Digital Transition |
| --- | --- |
| Reinforcing business-to-business collaboration for greener and circular value chains | New business models — the platform economy |
| Creating financial incentives and supportive regulation for green and circular social economy business models | **Data maturity and data-driven business models** |
| Certification, labelling and self-regulation | Public and private tech partnerships and support |
| Innovation as an enabler for green transition and business development in the social economy | **Data sharing, data management and a code of conduct** |
| Greening infrastructures and business operations | Supporting Digital Social Innovation (DSI) & Tech for Good entrepreneurship |
| Local Green Deals, green business communities and citizens' initiatives | Access to technology |
| Addressing capacity and skills gap | Boosting digital skills by - and in the social economy |

## TRANSITION PATHWAY

**Develop a code of conduct** on data use and management in the **social economy,** in cooperation with stakeholders to support the uptake of data and technology.

# EU CODE OF CONDUCT
## For data sharing and use
## In the social economy

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https://social-economy-gateway.ec.europa.eu/eu-initiatives/code-conduct-data-sharing-social-economy_en

# EXAMPLES

DATA MINING FOR YOUNG MINDS

CAPTURE

SUBMIT

MLF

Feminicidios bajo la lupa | Lo que los Estados nos deben | Informes | Metodología | Contacto

## Filtros

Selecciona un país..

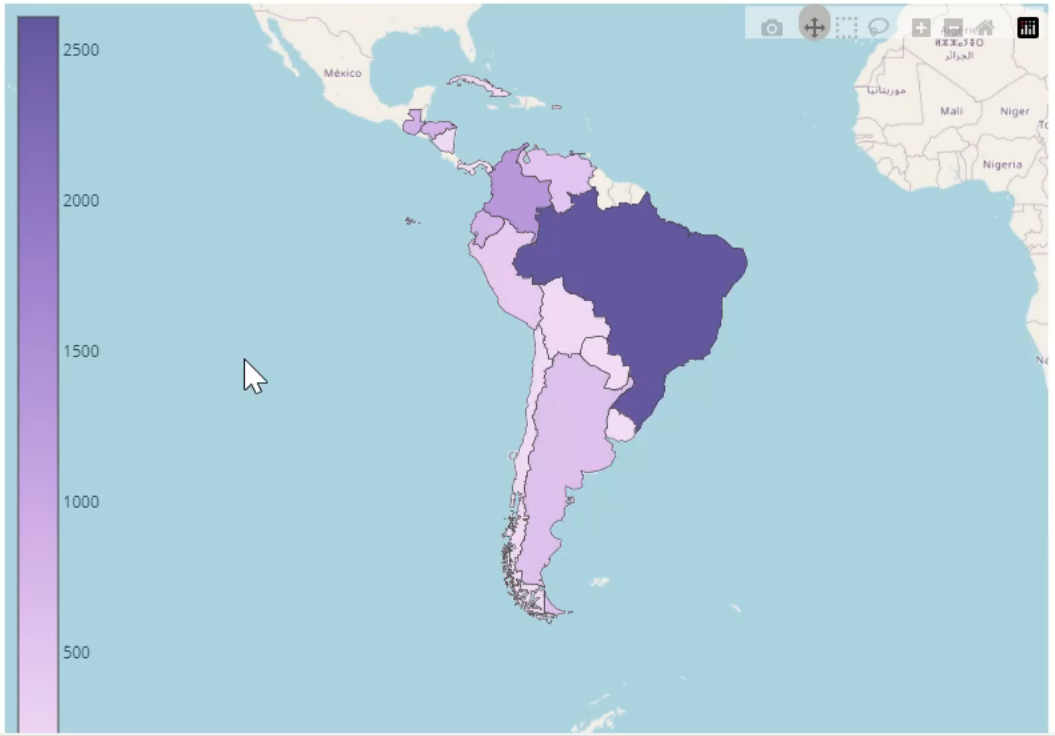
× 2022 × 2023 × 2024

*Además de estos filtros puedes utilizar una serie de funcionalidades particulares de cada gráfico para desplegar la información como lo necesites (zoom, guardar una imagen, etc.)*

## ¿Sabías que en América Latina y el Caribe* durante 2023 hubo un feminicidio cada 2 horas?

**En 2023 obtuvimos información de 16 países de América Latina y el Caribe: Argentina, Bolivia, Brasil, Chile, Colombia, Cuba, Ecuador, Guatemala, Honduras, Nicaragua, Panamá, Paraguay, Perú, Puerto Rico, Uruguay y Venezuela.*

Mapa Latinoamericano de Femi(ni)cidios




En América Latina y el Caribe se registraron 10548 feminicidios entre enero de 2021 y lo que va de 2024.

*En el año 2021 logramos co-crear, junto a organizaciones territoriales de Argentina, Chile, Ecuador, Panamá, Puerto Rico, Uruguay y Venezuela, una metodología de relevamiento que permite comparar y analizar los feminicidios registrados en dichos países. Constituyéndose en un insumo relevante para la creación de políticas públicas para erradicar la violencia contra las mujeres en América Latina y el Caribe.*

Conocé más sobre la metodología


md
Mapping
Diversity

# VIA LIBERA!

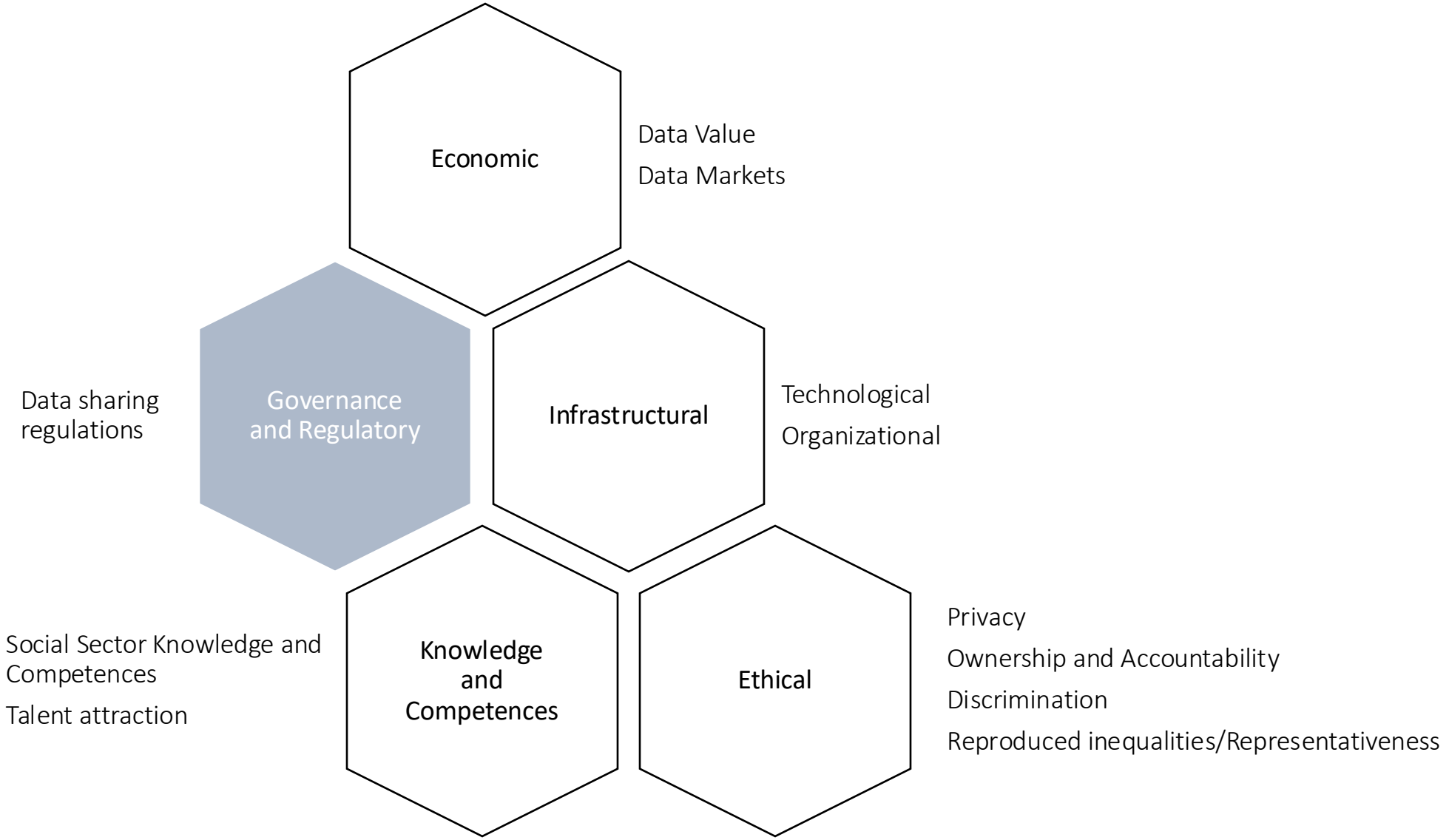
**GIOVEDÌ 16 MAGGIO 2024**

## La grande mappatura della sosta irregolare di Milano


"VIA LIBERA!" è un progetto che è partito dai Sai che puoi e si è aperto a tutta la città. Aderiscono (elenco in aggiornamento): Fondazione Mobilità in Città, Genitori Antismog, Massa Marmocchi, Clean Cities Campaign, Cittadini per l'Aria, Legambici Milano, Associazione Culturale Pediatri, Movimento Diritto dei Pedoni, Milano in Bicicletta, Strada per Tutti, Associazione Bodio Guicciardi, WAU! Milano, Giardini in Transito – Giardino Comunitario Lea Garofalo, Fiab Milano Ciclobby, La Prima Traccia, Ciclofficina Ruota Libera, Will Media, Circolino Fané, Reteambiente Circolo Legambiente, Polisportiva TRI, Wild Tee, CICLISTE PER CASO ASD, FacciamoLargo, Equilibrio Urbano Milano ASD, Agenda Verde, Up2You srl Società Benefit, Genitori Attivi, SciGas gruppo d'acquisto solidale, GS Corsera ASD

# DATA SHARING CONFIGURATIONS

**OPEN ISSUES**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**WHAT IS HAPPENING AROUND?**

## Open Data

"Open data is publicly available data that can be universally and readily accessed, used and redistributed free of charge. It is structured for usability and computability"

Verhulst and Young, 2016

## Data as a public good

## Data Collaboratives

"new organizational forms in which government agencies, non-profit organizations and private firms share specific datasets, including private ones, with the purpose to address an important societal problem and thereby create public value"

Stefaan Verhulst & Sangokoya (2015)

## Data as a club good

**WHAT IS HAPPENING AROUND?**

## Data Ecosystems/Data Spaces

"Data Ecosystems are composed of complex networks or organizations and individuals that exchange and use data as main resource. Such ecosystems provide an environment for creating, managing and sustaining data sharing initiatives, such as Smart Cities, Open Data and Scientific Data Communities."

Oliveira e Lòscio, 2018

## Data as a market good

## Data Cooperatives

"Data cooperative refers to the voluntary collaborative pooling by individuals of their personal data for the benefit of the members of the group or community."

Pipit Muliyah et al. 2023

## Data as a common good

**WHAT IS HAPPENING AROUND?**

## Data MarketPlaces

"A data marketplace can be understood as a digital platform on which data products are traded.15 These platforms must act like a neutral intermediary and allow anyone (or at least a large number of potentially registered customers) to upload and sell their data products"

Spiekermann (2019)

**Data as a market good**

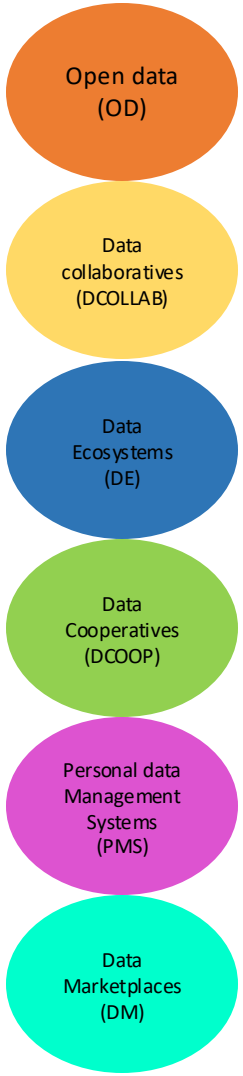
## Personal Data Spaces/Personal Information Management Systems

"Personal Information Management Systems (PIMS) seek to empower users by equipping them with mechanisms for mediating, monitoring and controlling how their data is accessed, used, or shared."

Janssen and Singh (2022)

**Data as a personal good**

## DATA SHARING CONFIGURATIONS

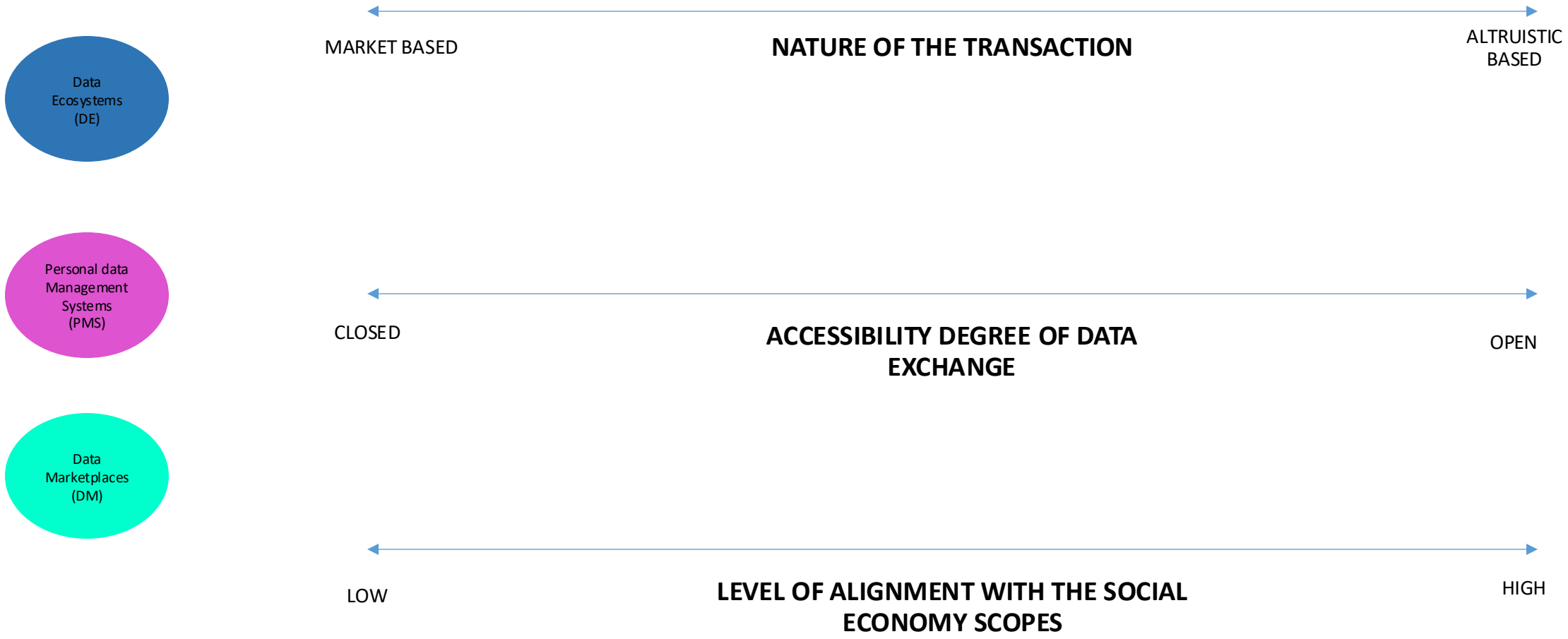



MARKET BASED — **NATURE OF THE TRANSACTION** — ALTRUISTIC BASED

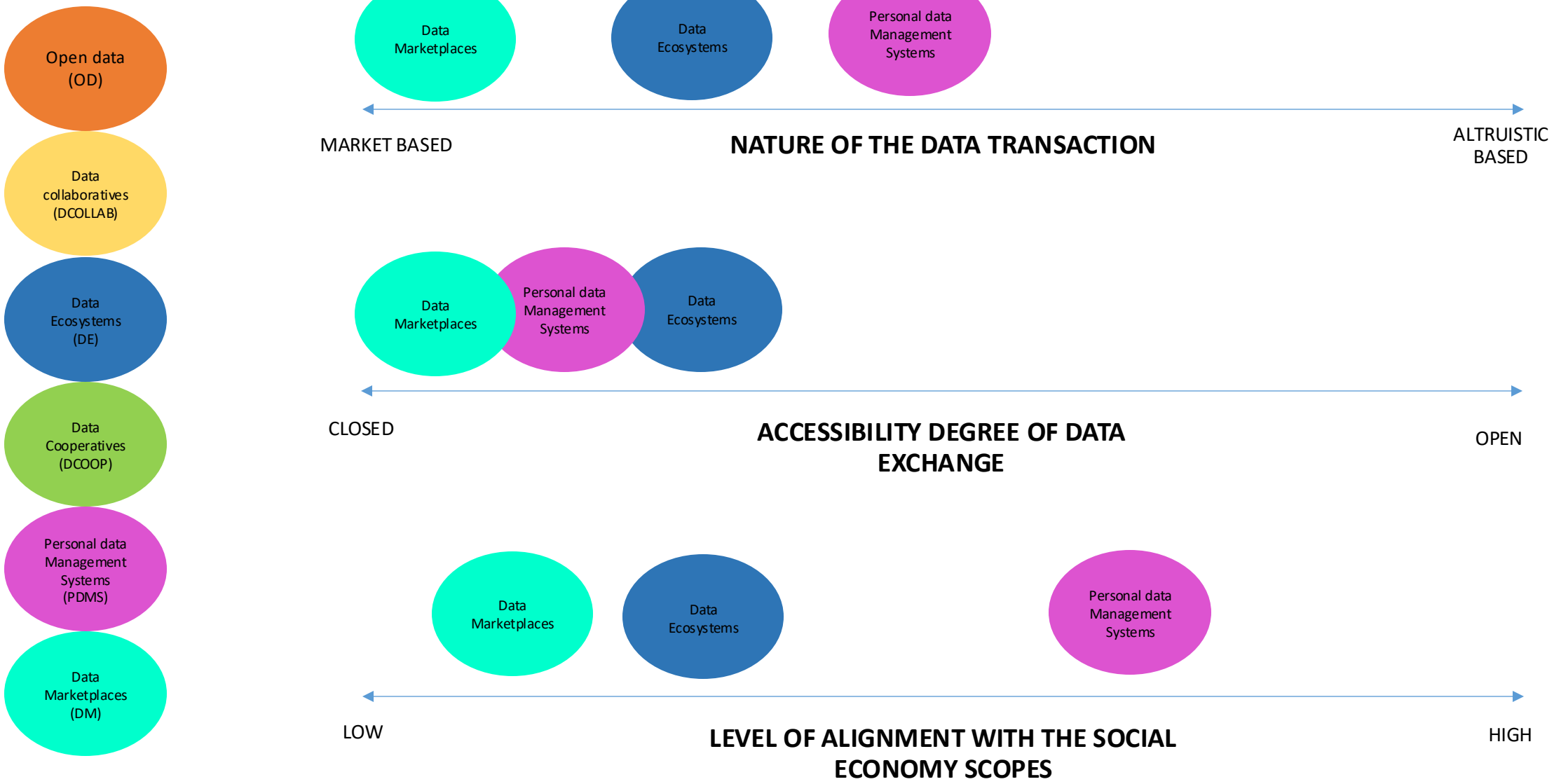
CLOSED — **ACCESSIBILITY DEGREE OF DATA EXCHANGE** — OPEN

LOW — **LEVEL OF ALIGNMENT WITH THE SOCIAL ECONOMY SCOPES** — HIGH

## DATA SHARING CONFIGURATIONS

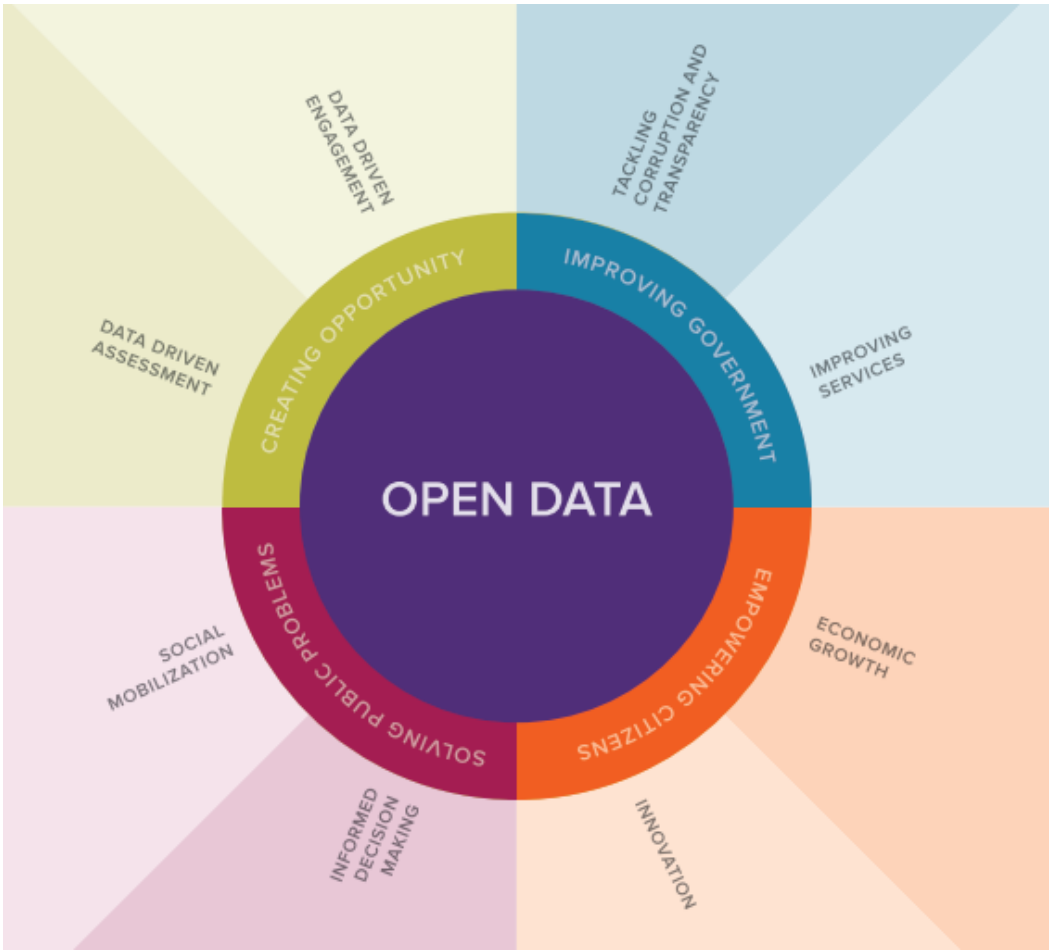


## DIFFERENT DATA SHARING CONFIGURATIONS



# OPEN DATA

## THE IMPACT OF OPEN DATA



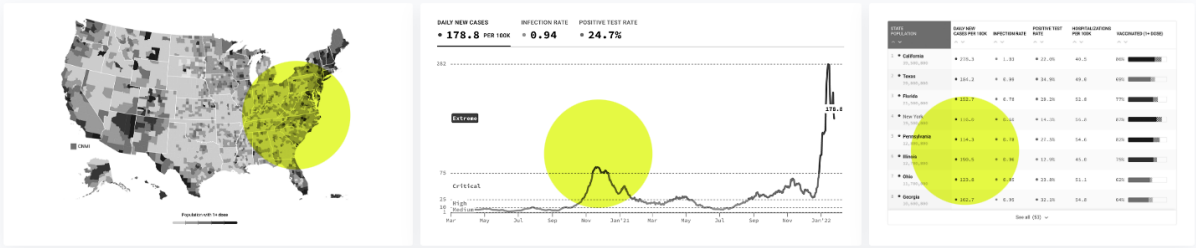



Verhulst, SG, and Young, A (2016) OPEN DATA IMPACT Key Findings of the Open Data Impact Case Studies

**OPEN DATA**

**ACT NOW COALITION**

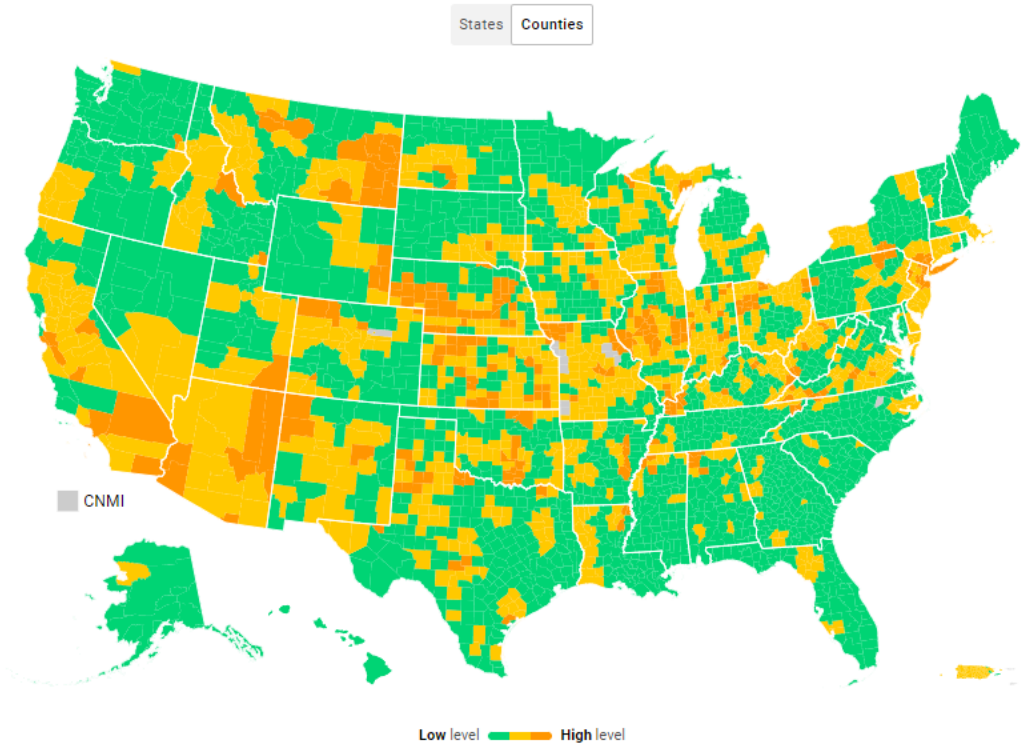
# We build data-driven products to tackle today's urgent problems.



## COVID Community Risk Level

Our new framework reflects the decreased risk of severe illness and death from COVID due to vaccines, therapeutics, and past COVID infections.

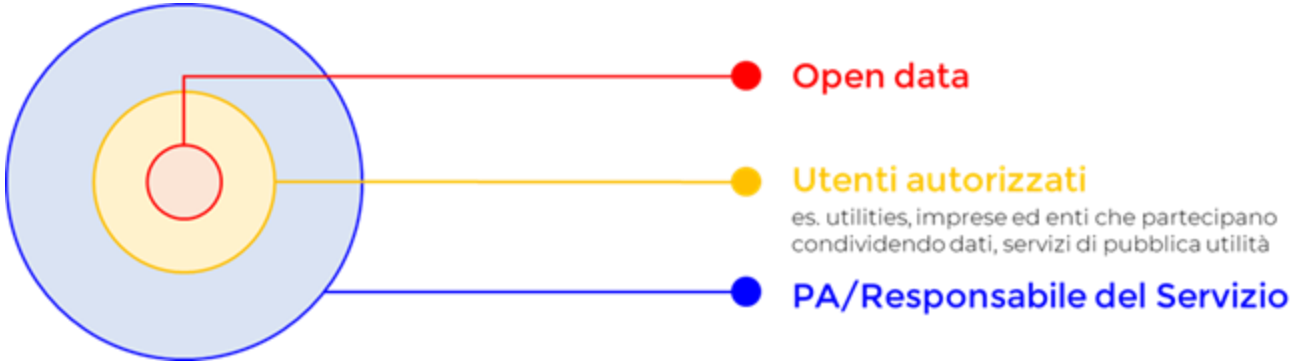
Note: People who need extra caution can still refer to our older Transmission metrics.



# EDU CHARACTERISTICS

The sharing of information via the EDU platform takes place via APIs and within the **Ecosystem's framework of rules**, which provides providers and users with guidelines for using the platform.

**Data providers indicate in which modalities and at what level the information will be made visible and usable by other actors of the Ecosystem**, according to the role defined for each user.




In fact, the information collected through the platform will always remain available for the Municipality of Milan, while for all other members it will be available according to the level of accessibility indicated.

Scarica qui
**Policy di adesione a Ecosistema Digitale Urbano**
**Determina per l'approvazione**
**Termini e condizioni**

# CREATING INTELLIGENT CITIES

## OBJECTIVE

The publication of APIs on EDU, will allow the Municipality of Milan and the city's operators to:

- **collect and manage information** related to services;
- **correlate them and make them available to improve monitoring and planning** of the territory;
- develop a **portfolio of** integrated Smart City **services**.

**CO2 emissions monitoring**

**Climate intelligence**

**Waste management**

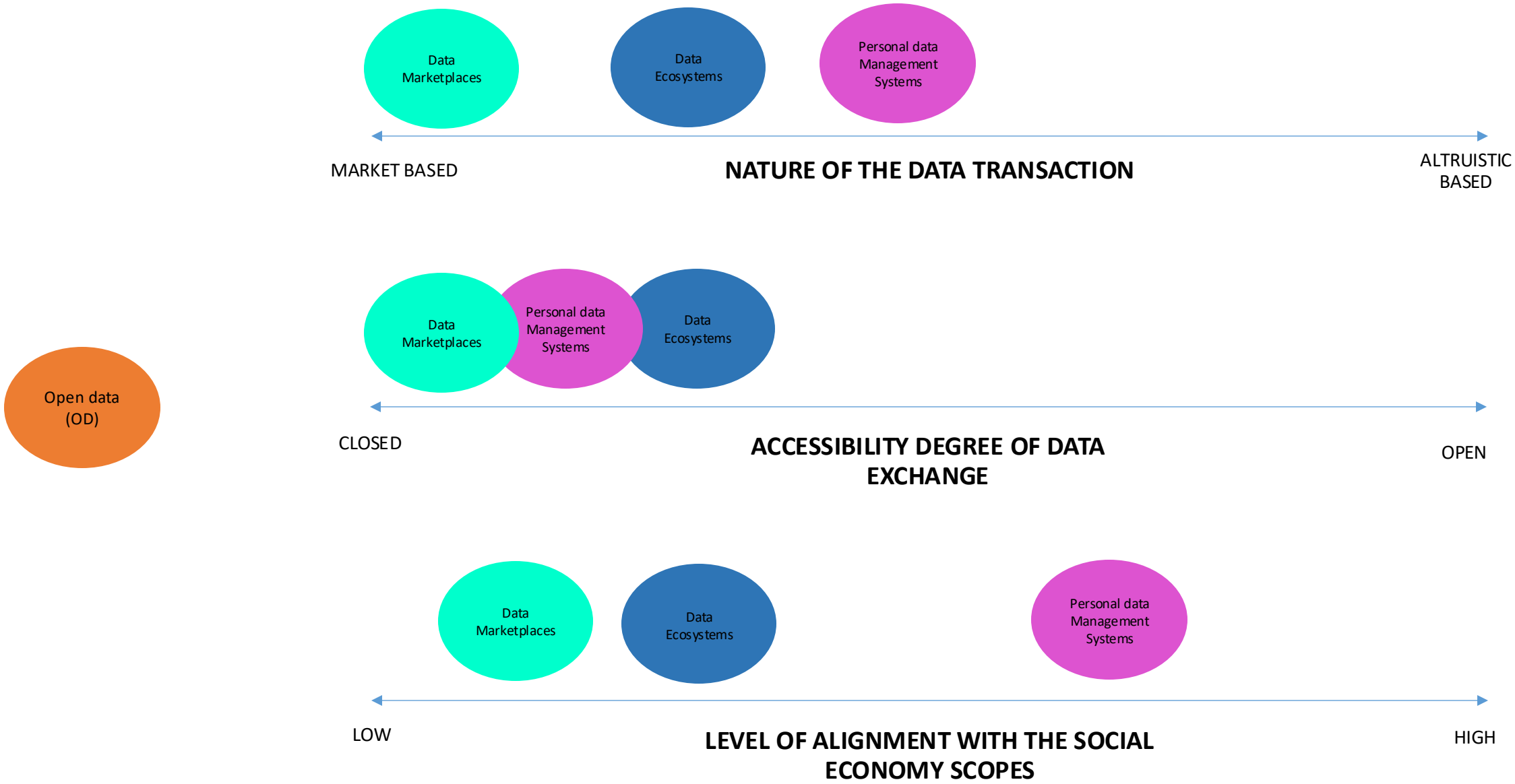
**Access and traffic monitoring**

**Urban Logistics**

**Mobility as a Service**

*Possible areas for the development of digital services for the city and citizens through EDU*

## DIFFERENT DATA SHARING CONFIGURATIONS



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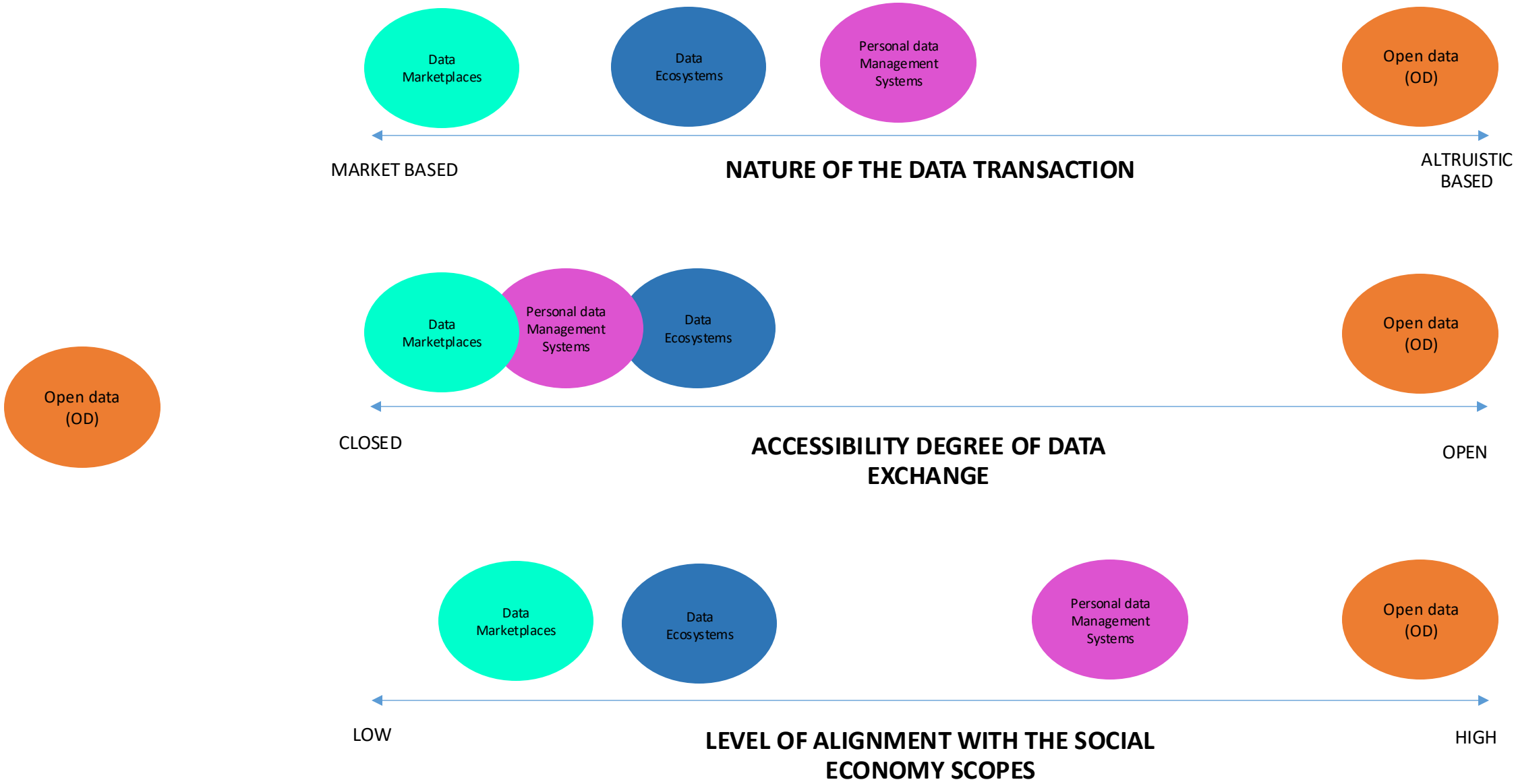
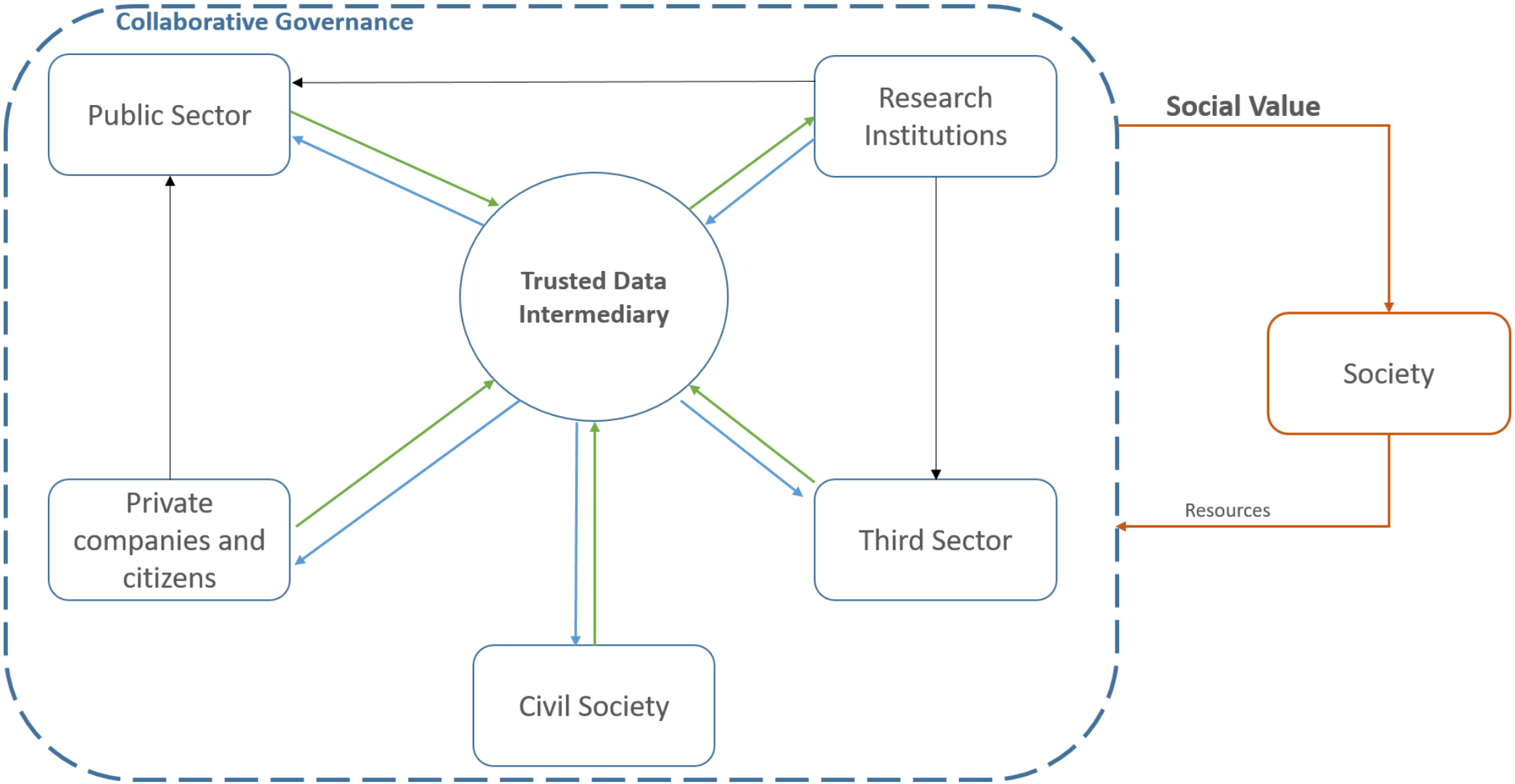
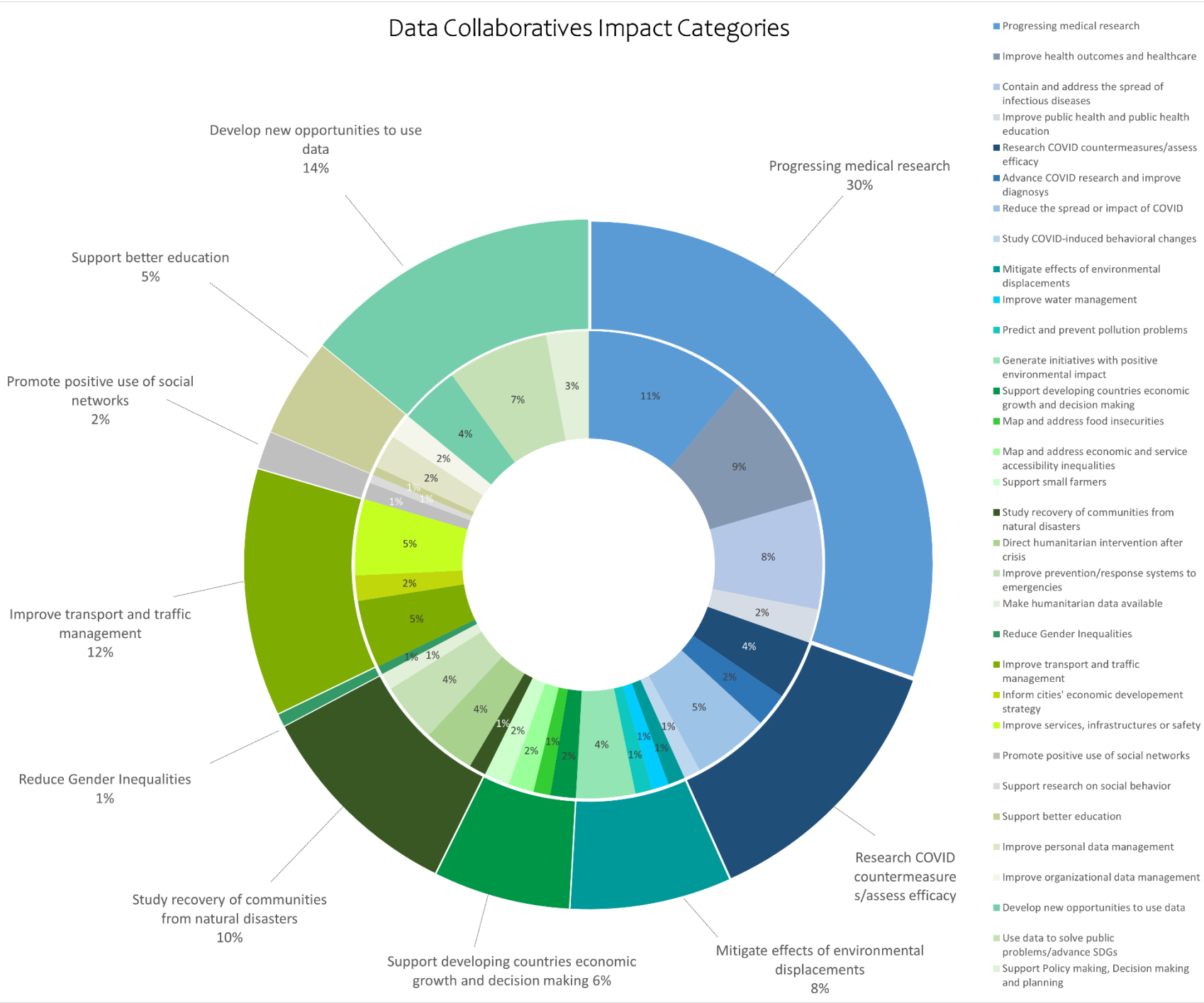


# DATA COLLABORATIVES

**DATA COLLABORATIVE**



# Data Collaboratives Impact Categories



**DATA COLLABORATIVE TYPES**

1. Collaborative efforts to support wide-scale research projects

2. Prompt response to emergencies

3. Continuous effort to improve systemic responses

4. Data-driven initiatives to support innovation

5. International mobilization for development

POLIMI GRADUATE SCHOOL OF MANAGEMENT

Bartolomucci, F, and Bresolin, G (2022) Fostering Data Collaboratives' systematisation through models' definition and research priorities setting. *ACM International Conference Proceeding Series*, 35–40. doi:10.1145/3543434.3543442.

## CONSUMER RESEARCH DATA CENTRE

https://www.cdrc.ac.uk

Dimension: national
HQ: Distributed in UK

- Population and Mobility
- Transport
- Digital
- Retail Futures
- Finance and Economy

## MAPPING EARTHQUAKE DAMAGES IN NEPAL (2015)

Dimension: national
Main effort is
distributed among volunteers

Aid support

Emergency management

Mapping

Humanitarian OpenStreetMap Team

ICRC

Satellite footage of the nine-storey, 61.88-metre-tall tower at Sundhara in Kathmandu, before and after the earthquake DIGITALGLOBE

https://www.wired.co.uk/article/mapping-nepal-after-the-earthquake

## CALIFORNIA DATA COLLABORATIVE

https://www.californiadatacollaborative.org

Dimension: National, California
HQ: Los Angeles, California
Cooperative

Water Management

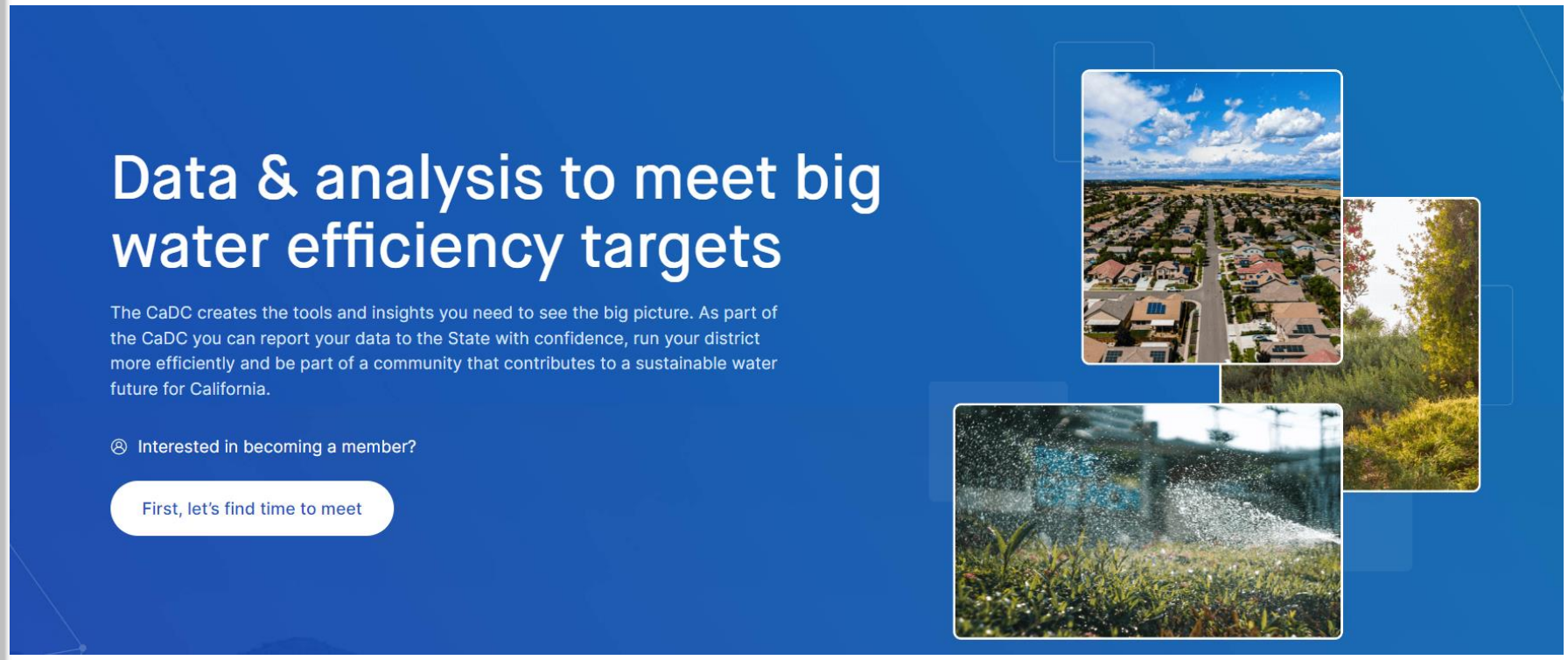
### Service Offered

Maintenance and cleaning of the data of the companies that join the collaboration.

Access to data communication and data visualization tools to analyze, understand and their data.

Access to resources on industry legislation in California.

Optional> possibility to share data with researchers for research and policy purposes, access to network of experts



**DATA KIND**

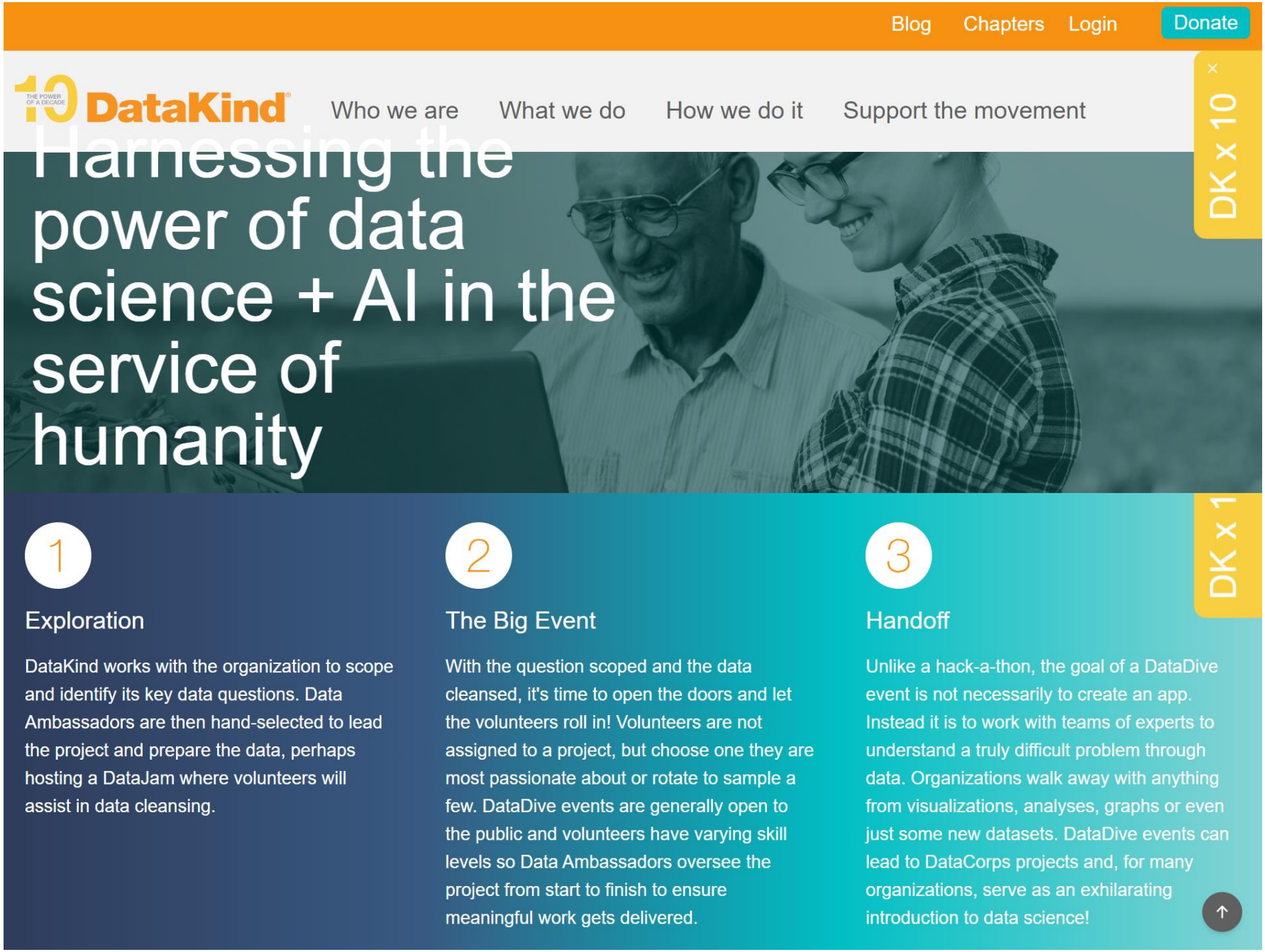
https://www.datakind.org/

Dimension: International

Nature - Not For profit

Different Missions

Service Offered
Data Events
Data projects
Community Events
Impact Practice



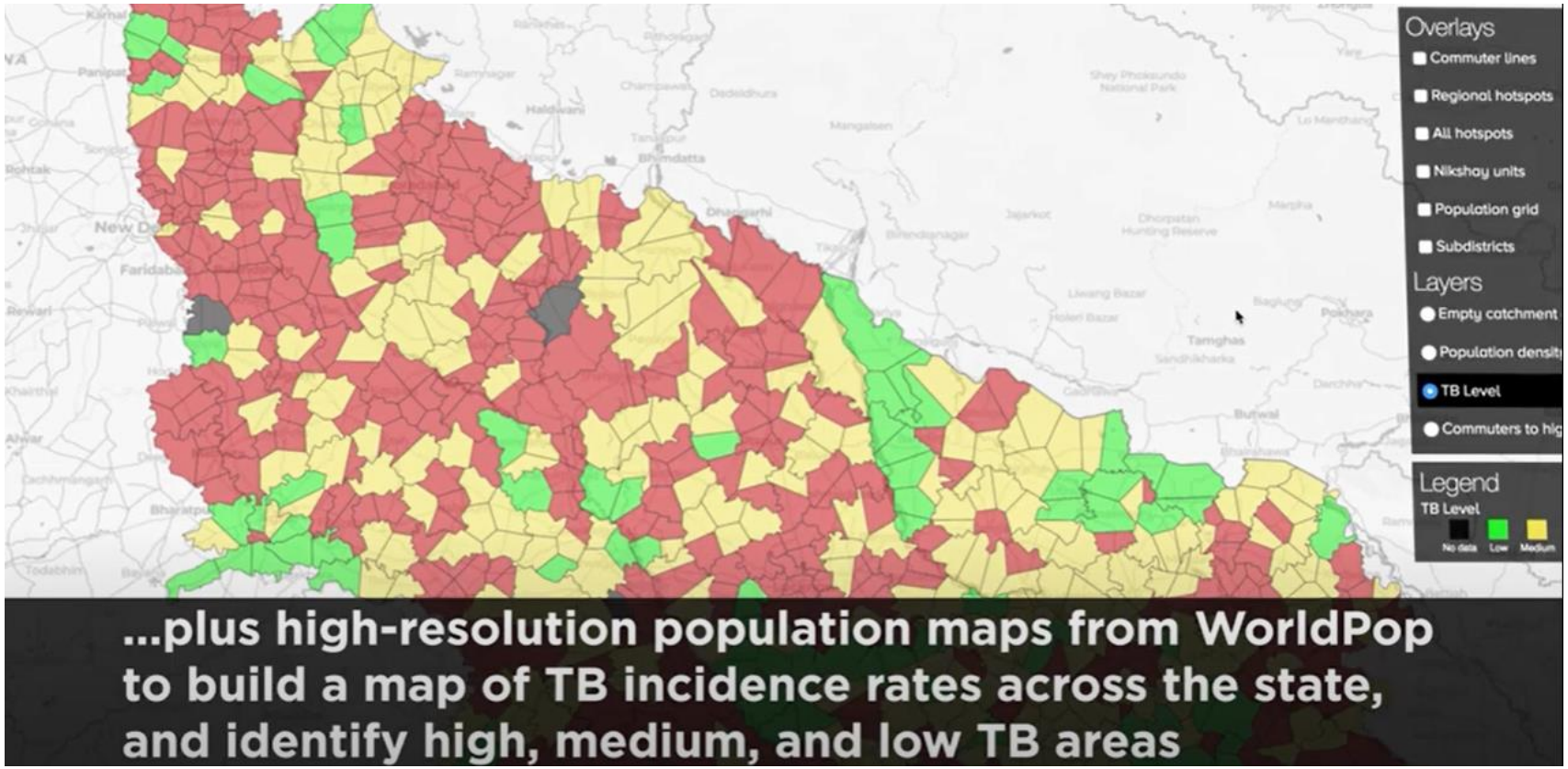
## BHARTI AIRTEL, GSMA AND THE WHO

AI for Impact (gsma.com)

Health

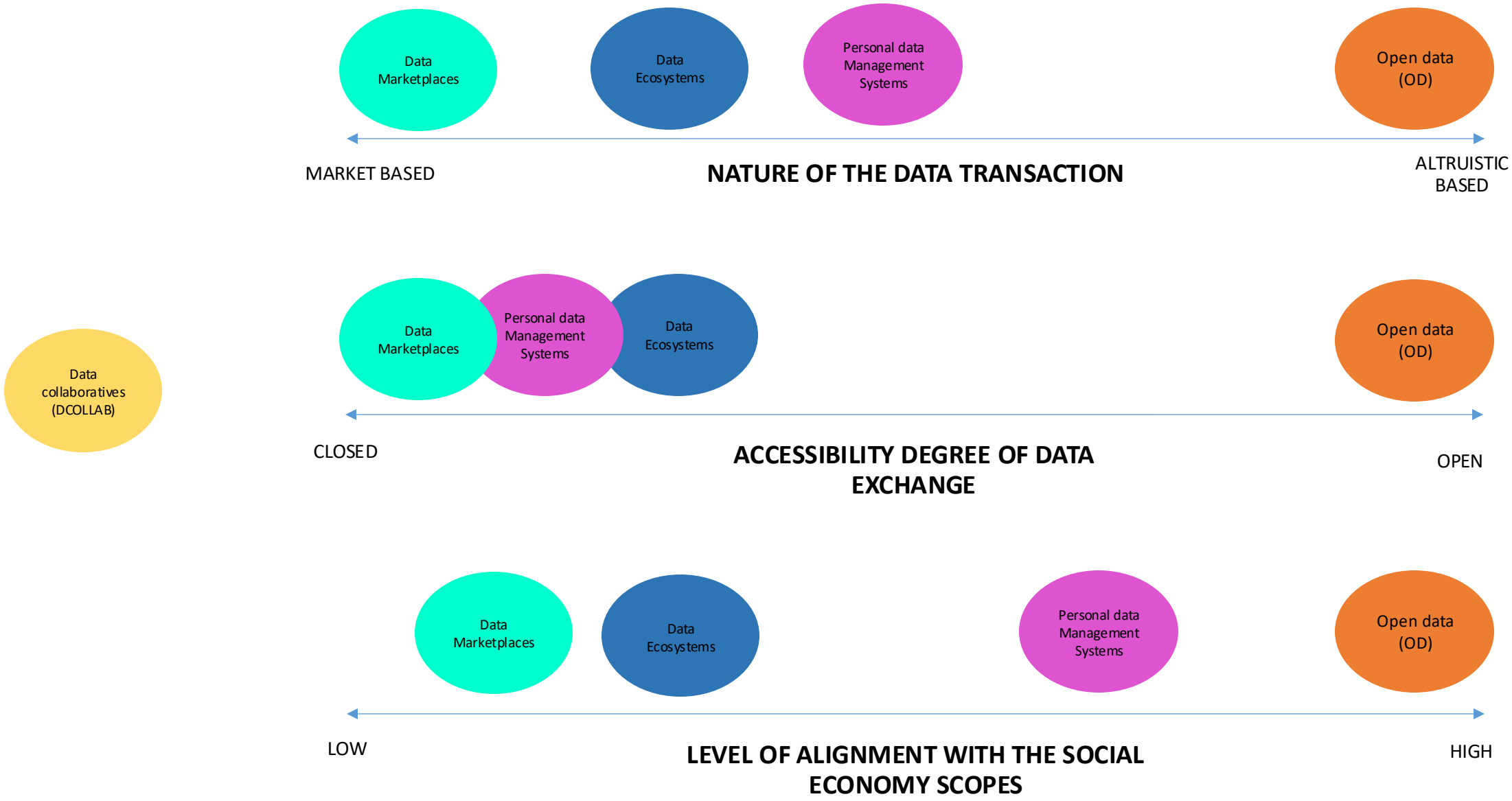
Description

Bharti Airtel and the GSMA partnered with Be He@lthy, Be Mobile; an initiative born out of the World Health Organisation (WHO) and the International Telecommunications Union (ITU), to leverage mobile network insights to fight tuberculosis (TB). The partners were able to identify areas that are at particular risk of increasing TB levels or areas where civilians may already be underreporting TB cases.




AIRTEL INDIA TB case study video - YouTube

## DIFFERENT DATA SHARING CONFIGURATIONS



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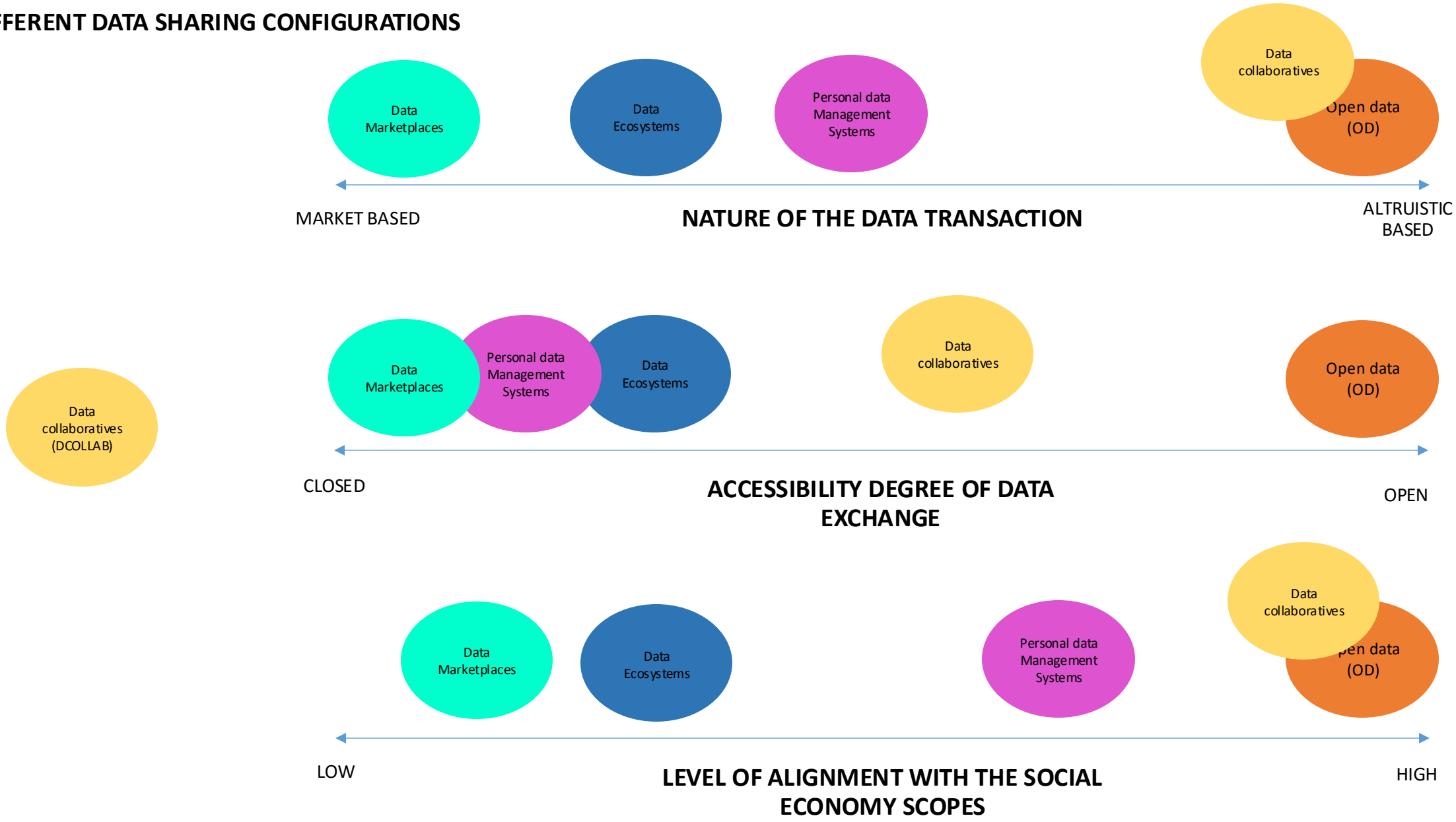


# DATA COOPETATIVES

1) **cooperativism and high-reciprocity**: as a decision-making principle

2) **data subject-centeredness:** individual members' interest is inherently the main priority

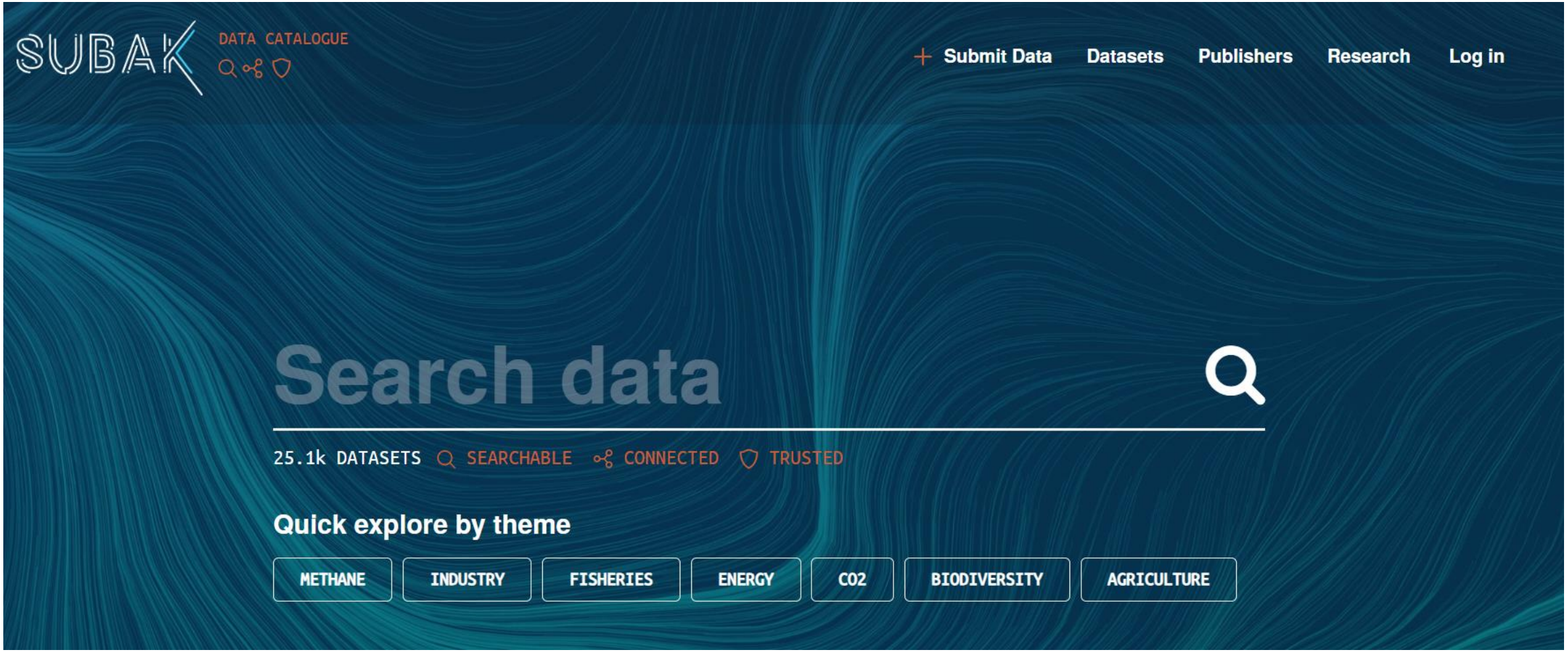
3) **subversiveness:** as a principle against power imbalances

4) **collective action and benefit:** as a way to operate and objective

5) **fiduciary responsibility**: towards its members

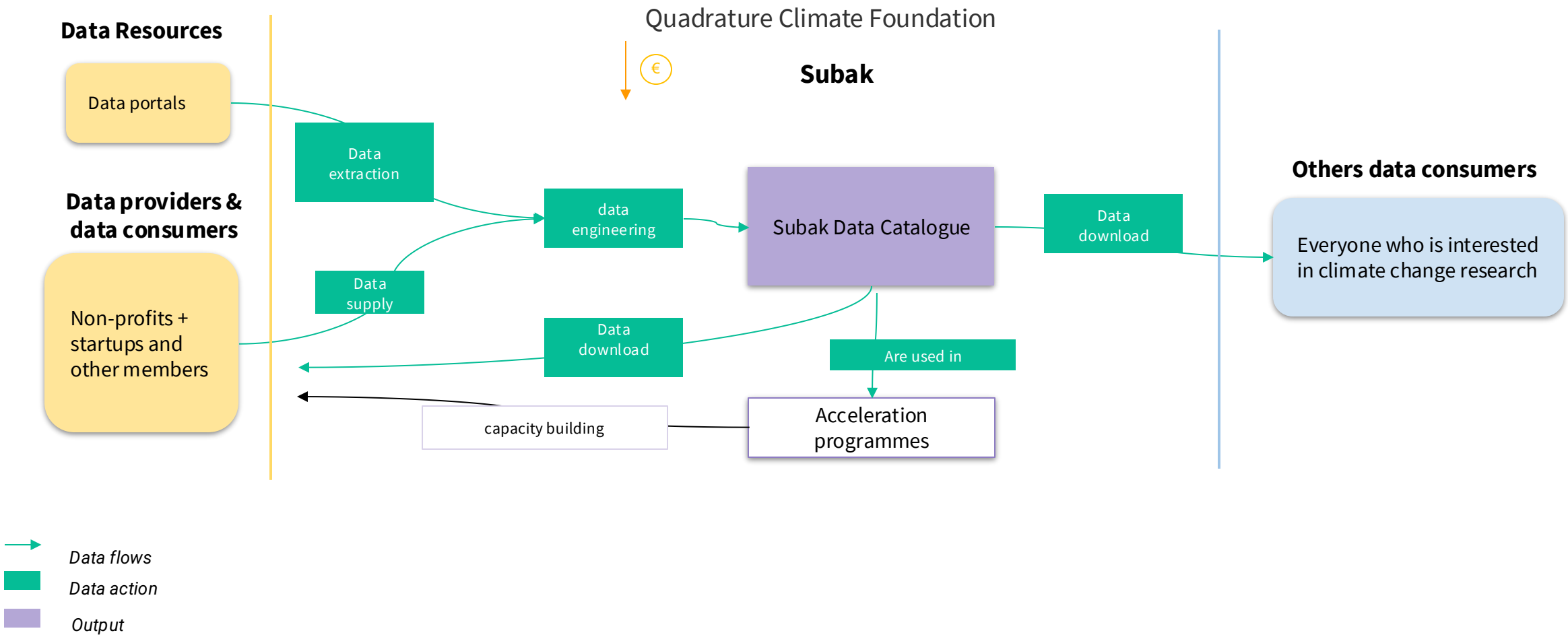
## DATA COOPERATIVES SECTORS

## COOPERATIVES SECTORS

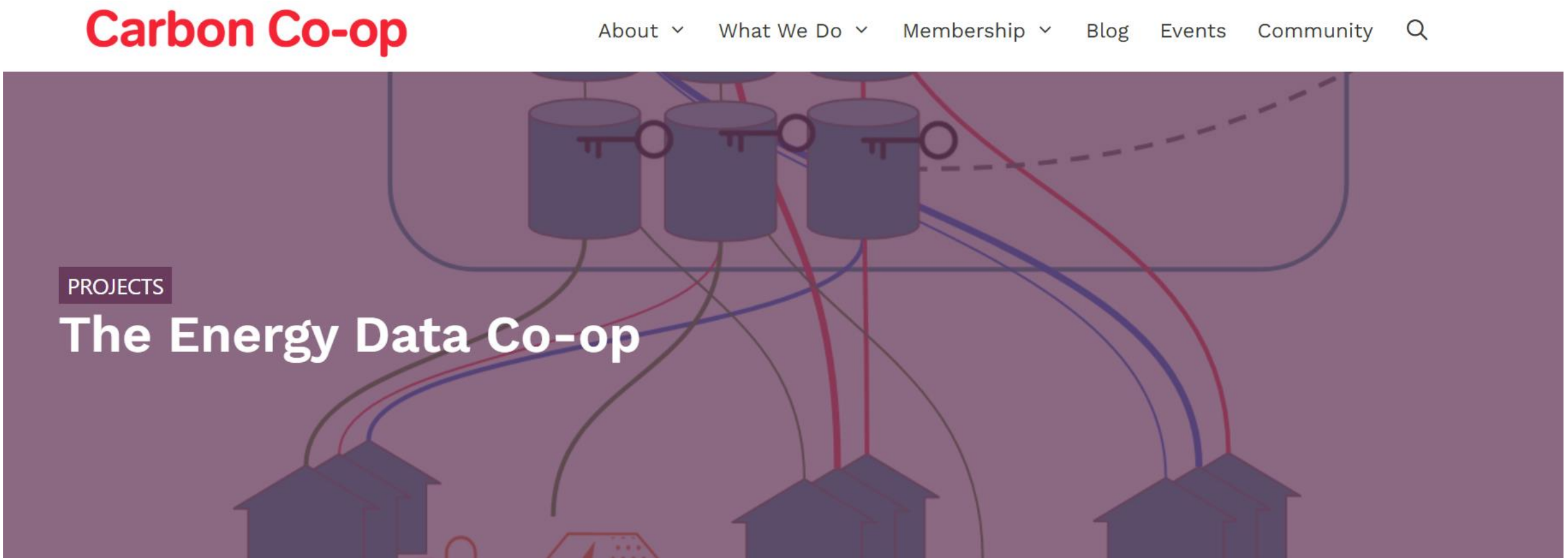


# Subak

## Data Flows



**COOPERATIVES SECTORS**



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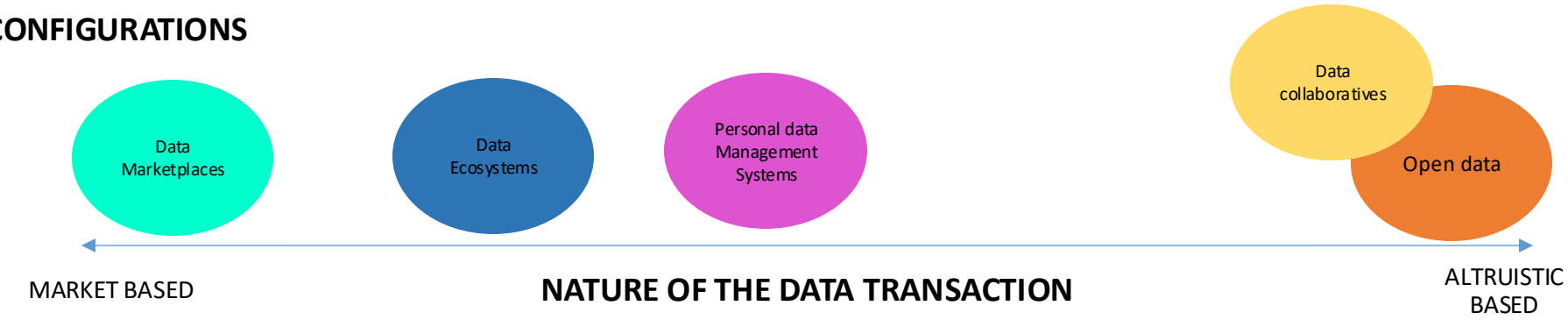


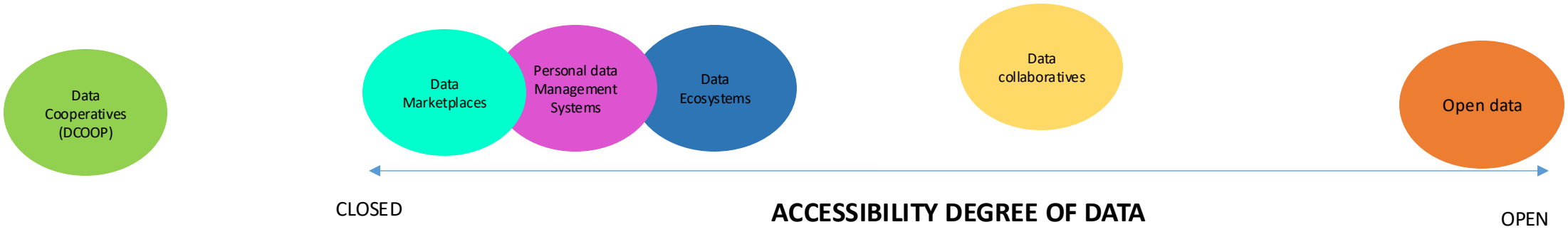


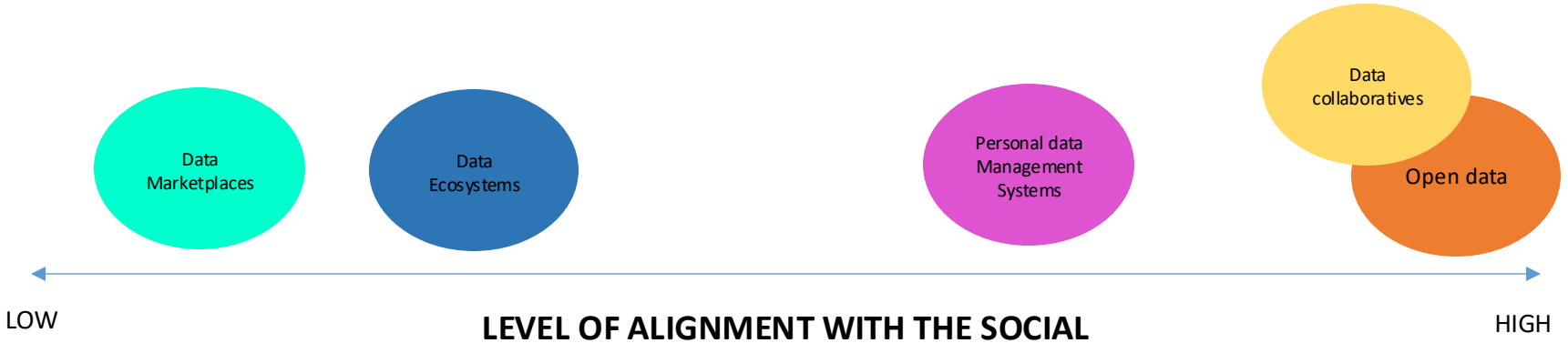

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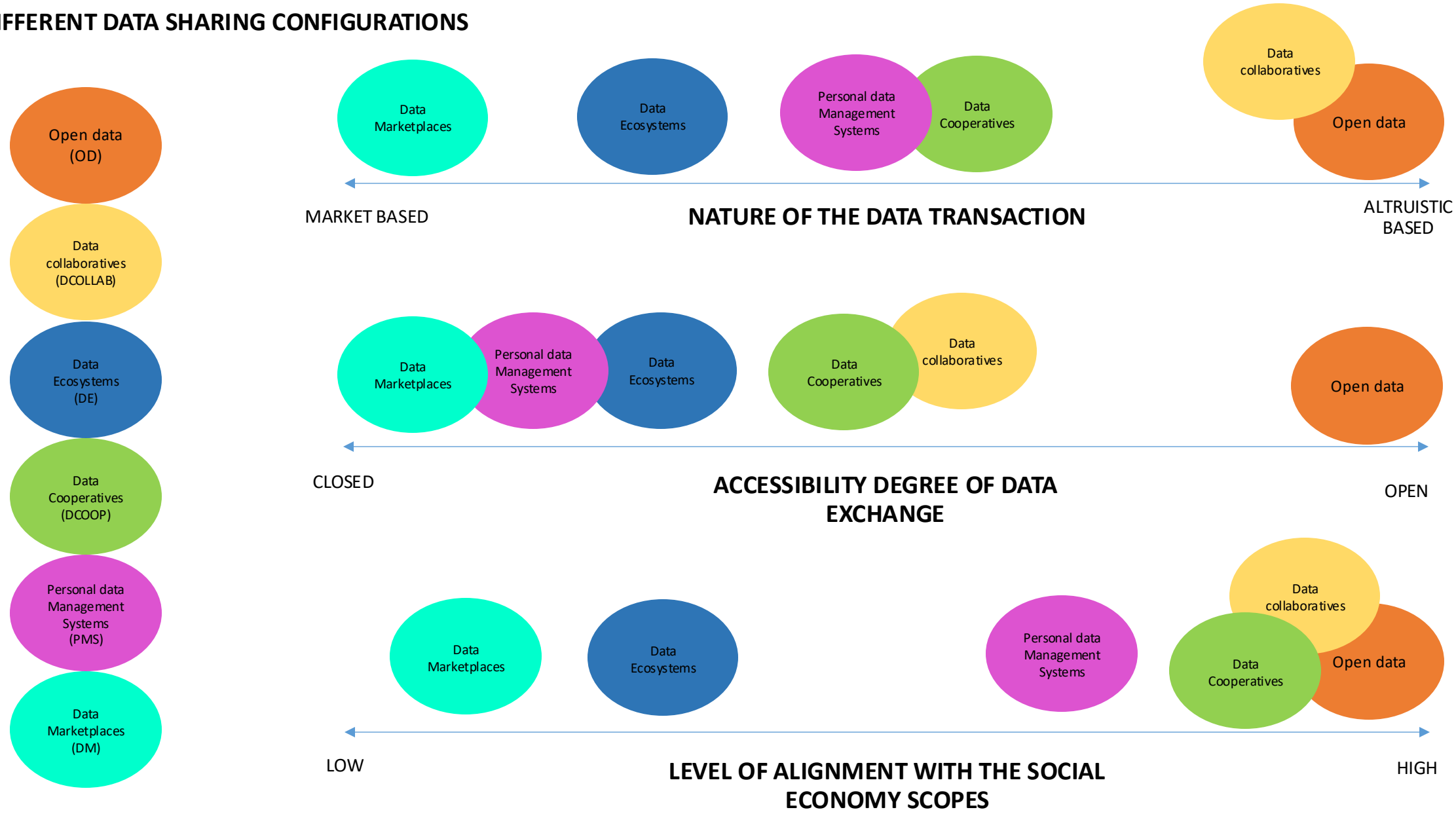

# CONCLUSIONS

**KEY MESSAGES**

- It’s not just about data, it’s about people
- Data are a new asset, and we should still understand how to deal with it
- Everyone can play a role in using and interpreting data
- Social Economy actors need of training to exploit data value
- Different data sharing configurations apply to different aims and impacts
- **Luckly, we are EU citizens!** 

# THANK YOU

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