The New Hanse
Data Commons Working Group

Chair Francesca Bria

Summary of working session

2 March 2023, Hamburg

Purpose of this document:

- provide a general overview of key discussion points
- present achievements and challenges of public-private data sharing of the three present cities
- sharing the slides presented

Check out the DCWG section on our homepage: www.thenewhanse.eu

Hamburg

Summary of take-aways from the meeting

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Current challenges & best practices – Summary of 3 cities' perspectives

(Hamburg, Barcelona, Bologna)

Achievements:

Please note that the cities' perspectives have been summarized for the purpose of this document.

- Hamburg, Barcelona and Bologna are quite advanced working with data owned/collected by the cities themselves. Although there are no harmonised legal rules for private data access.
- Have mostly built up relevant capacities at local data offices. Evolution working on skills and capabilities still needed
- Attraction of talent is generally possible, but public requirements to hire employees makes it more difficult
- Data Protection Officer supports private data sharing initiatives. More engagement of DPOs during experiments is needed.
- Various examples of using cross-sectoral data insights were presented. Need to work on common standards.
- Barcelona has successfully implemented data sovereignty clauses in public procurement contracts
- Examples for data policy framework by Bologna: „City of Knowledge" or „Digital Twin Project"

Current challenges & best practices – Summary of 3 cities' perspectives

(Hamburg, Barcelona, Bologna)

Challenges:

Please note that the cities' perspectives have been summarized for the purpose of this document.

- Need of focusing on concrete use cases, that are showing the relevance of private to public data sharing (mostly relying on companies' voluntary data sharing, and no coherent legal framework to require mandatory access)
- Infrastructure strategically mainly focuses on administration currently
- Partially tied to federal legislation (vs. own legislative powers in the city itself) – "the real playground is on EU level"
- Intellectual property rights and data rights are not properly taken into account in legal municipal offices (need of interdisciplinary task forces working on data).
- There is a transparency fatigue for city officials (too many administrative requirements)
- Partially lacking expertise and strategic interest regarding data policy at municipality level

Shared vision & shared problem of cities

Hamburg

Shared vision:

Cities need access to private data for better public policies and better decision-making. Preserving data rights of citizens and their trust.

Shared problem:

Data is a new policy field. Lack of harmonised and comprehensive regulation on data access, use and governance. Data access from private sector is hard since many companies resist sharing. work on data sharing mandates is needed. Work at city level can help built up pressure at national and EU level.

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What solutions are needed?

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1. Data Sharing Framework

- Data Act is not enough and could only provide a general outline (once approved)
- Regional approaches (but not limited on specific sectors) are required to test and finally implement data sharing
- Possible routes could be, for example:

1. new laws
2. backup clauses
3. Licensing (if you implement x, sharing data on y is obligatory) or conditionalities for public funding (for public administration to fund z, sharing data on y is obligatory)

- A new law would require strong arguments in favour of mandatory data sharing (and cover competitiveness, privacy concerns, etc.)
- Might include idea of public (social) value data that has to be shared vs. other data with no sharing obligation
- Data cooperatives, trusts, sovereignty models include intermediaries and struggle with financial sustainability, but differ in terms of goals & value production

2. Software Development Kits

- More specific talent needed
- Investments into strategic & technological capacities for B2G data sharing
- Development of best practices from technologically advanced cities

3. Use Case Depository

- What other use cases are available across cities and sectors?
- Example: City of Amsterdam (included in governance blueprint slides)

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Further exploration required in terms of data access and data intermediary

1. Mandatory vs. Voluntary data sharing:

Is a scenario with incentives for voluntary data sharing realistic or should the focus lie on (a) new law(s) for mandatory data sharing?

3. Legislative power of cities:

What are options to take on a local vs. federal vs. EU level?

Examples: "Sondernutzungserlaubnis“ in Berlin for bicycles and eScooter, Intelligent Transport Directive

2. Role and legal form of a data intermediary:
Many open questions/aspects on characteristics of a data intermediary:

- Contract vs. Company?
- Standardisation among cities?
- To what extent is giving back aggregated data to companies foreseen/ possible?
- Preferred legal form (e.g. not-for-profit)?
- How to lower transactional costs?
- What are data privacy considerations (e.g. in terms of access, protocols, etc.)?

Next steps to investigate from a city perspective

Overarching question:

1. What legislative power does the city have (vis-a-vis National Gov and the EU) in terms of forcing private companies to share their data?/ What kind of rules can be enacted at city level? → Create city Task Forces to address regulatory gaps.

Underlying questions:

2. Work on repository of relevant use cases/examples where the city needs to access data to pursue their policy goals?

3. In the cases where the city has already identified the need for privately held data: What is the process of buying that data, incl. details about prices, volumes, etc.?

4. How to move beyond opaque transactions to enforcing right to access data for the public interest?

Impressions from the meeting

Session 1
Hamburg, other cities & the big picture

Hamburg

Update
Urban Data Challenge

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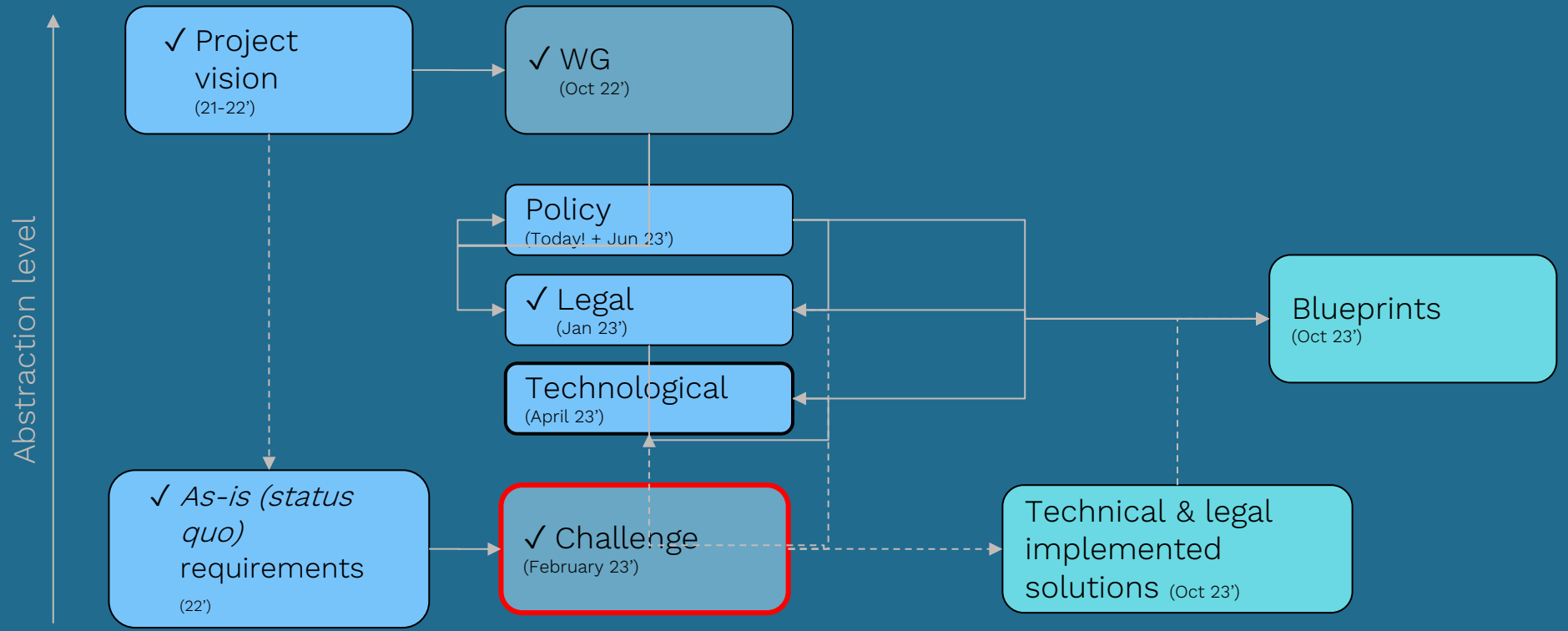
Key parts of the project



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Urban Data Challenge Hamburg

- **Launched** by FHH & TNI on 23. February 2023
- Seeking innovative **data-driven solutions** to the question:
- How can we gain **insights into micromobility and cycling flows** in Hamburg to make the city more liveable and sustainable?
- Data partners: Bolt & IoT Venture + **municipal data** provided by the city
- Goal: explore collaborative use of urban data and promote **data sharing in the public interest**

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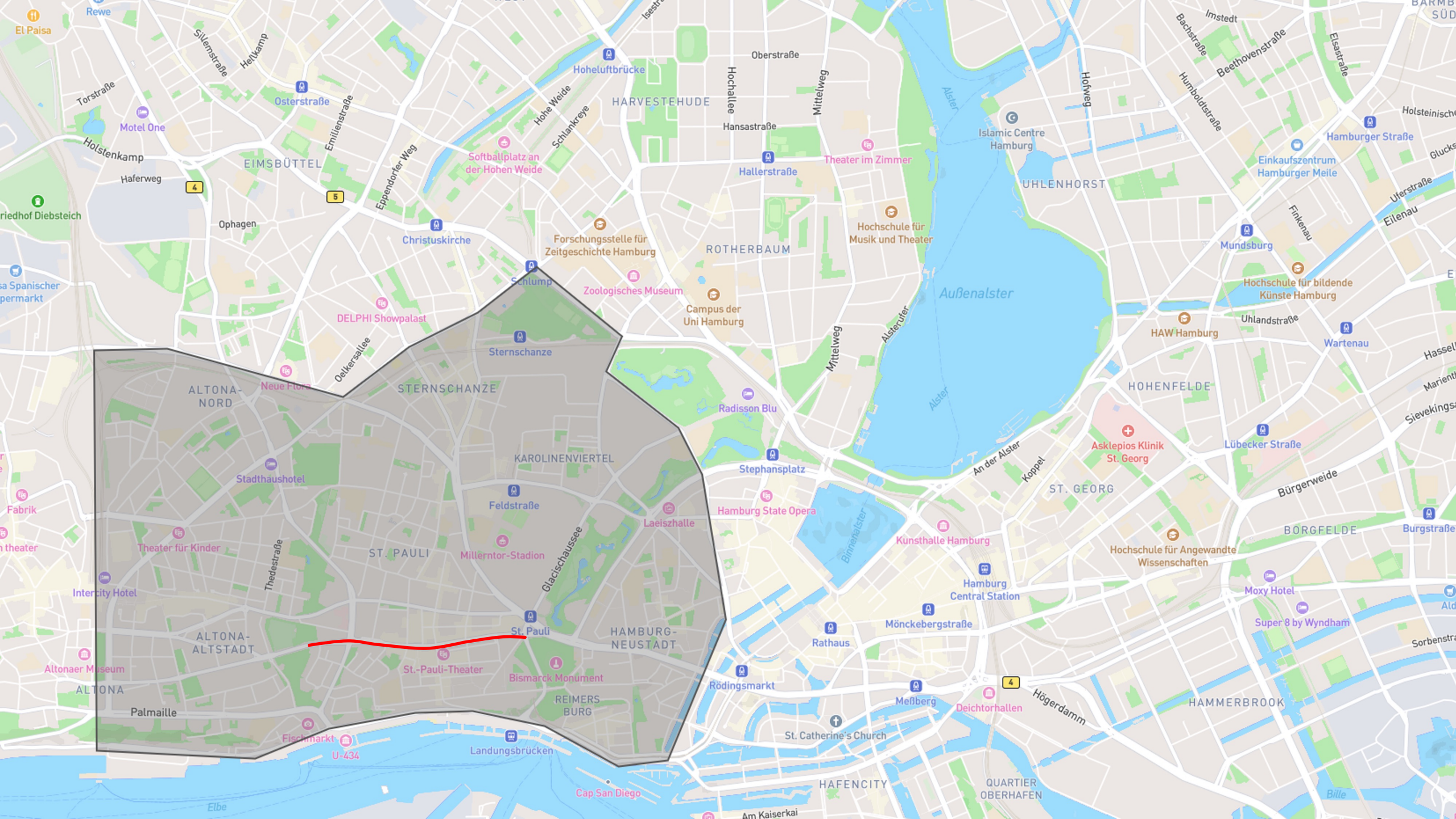
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El Paisa
Torstraße
Motel One
Holstenkamp
Haferweg
Sillemstraße
Heitkamp
Osterstraße
Emilienstraße
EIMSBÜTTEL
Eppendorfer Weg
Softballplatz an der Hohen Weide
Hohe Weide
Schlankreye
Hoheluftbrücke
HARVESTEHUDE
Oberstraße
Hochallee
Hansastraße
Mittelweg
Hallerstraße
Theater im Zimmer
Islamic Centre Hamburg
Hofweg
Alster
UHLENHORST
Bachstraße
Imstedt
Beethovenstraße
Humboldtstraße
Elsastraße
Hamburger Straße
Einkaufszentrum Hamburger Meile
Holsteinische
Uferstraße
Eilenau
Finkenau
Mundsburg
Hochschule für bildende Künste Hamburg
Uhlandstraße
HAW Hamburg
Wartenau
Hasselb
Marienth
Sievekingsa
HOHENFELDE
Lübecker Straße
Asklepios Klinik St. Georg
An der Alster
Koppel
ST. GEORG
Bürgerweide
BORGFELDE
Burgstraße
Hochschule für Angewandte Wissenschaften
Moxy Hotel
Super 8 by Wyndham
Sorbenstra
Hamburg Central Station
Mönckebergstraße
Rathaus
Kunsthalle Hamburg
Hamburg State Opera
Stephansplatz
Binnenalster
Außenalster
Alsterufer
Mittelweg
Radisson Blu
Campus der Uni Hamburg
Zoologisches Museum
Forschungsstelle für Zeitgeschichte Hamburg
Hochschule für Musik und Theater
ROTHERBAUM
Christuskirche
Ophagen
Friedhof Diebsteich
Schlump
Sternschanze
DELPHI Showpalast
Oelkersallee
Neue Flora
ALTONA-NORD
STERNSCHANZE
KAROLINENVIERTEL
Stadthaushotel
Feldstraße
Laeiszhalle
Fabrik
Theater für Kinder
Thedestraße
ST. PAULI
Millerntor-Stadion
Glacischaussee
Intercity Hotel
St. Pauli
ALTONA-ALTSTADT
HAMBURG-NEUSTADT
Altonaer Museum
St.-Pauli-Theater
Bismarck Monument
ALTONA
Palmaille
REIMERS BURG
Fischmarkt
U-434
Landungsbrücken
Rödingsmarkt
Meßberg
Deichtorhallen
Högerdamm
St. Catherine's Church
HAMMERBROOK
HAFENCITY
QUARTIER OBERHAFEN
Cap San Diego
Elbe
Am Kaiserkai
Bille

Hamburg

Spotlight on Barcelona

Presentation by Pau Balcells

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Ajuntament de Barcelona

BARCELONA CITY COUNCIL

Municipal Data Office

Ajuntament de Barcelona

VISION B2G

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IS THIS VISION A PRIORITY?

YES BUT……

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MOST AMBITIOUS PROJECT

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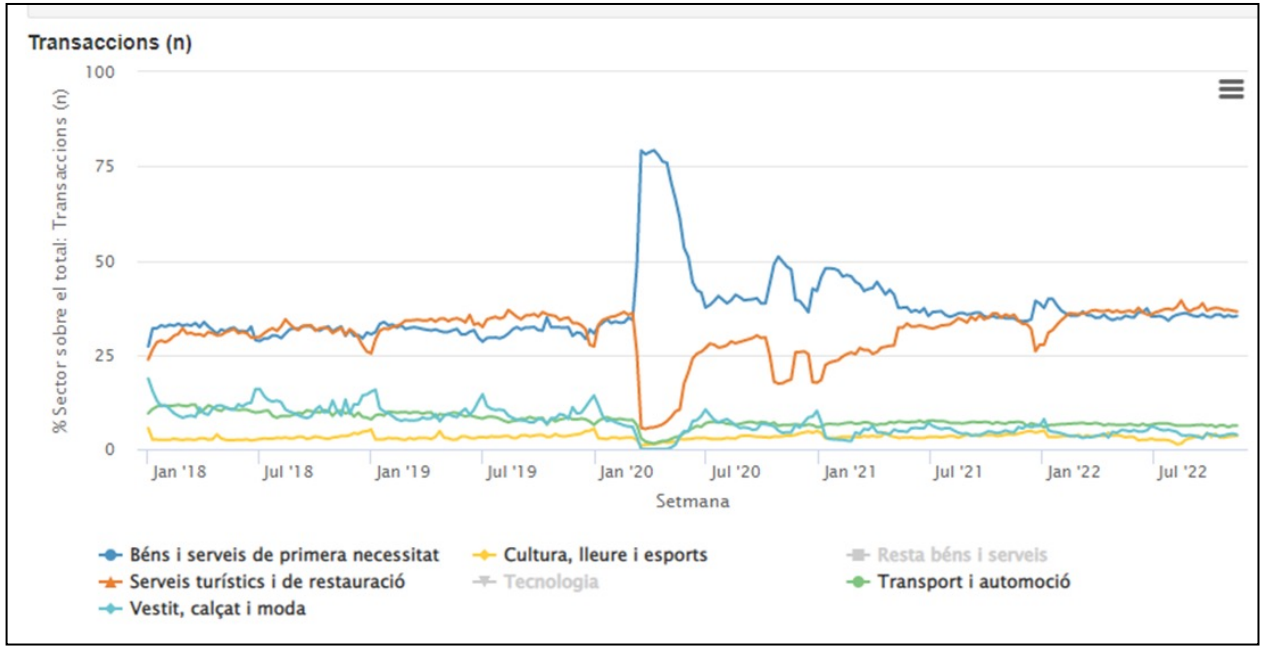
MOST VALUABLE P.DATA WE CURRENTLY USE



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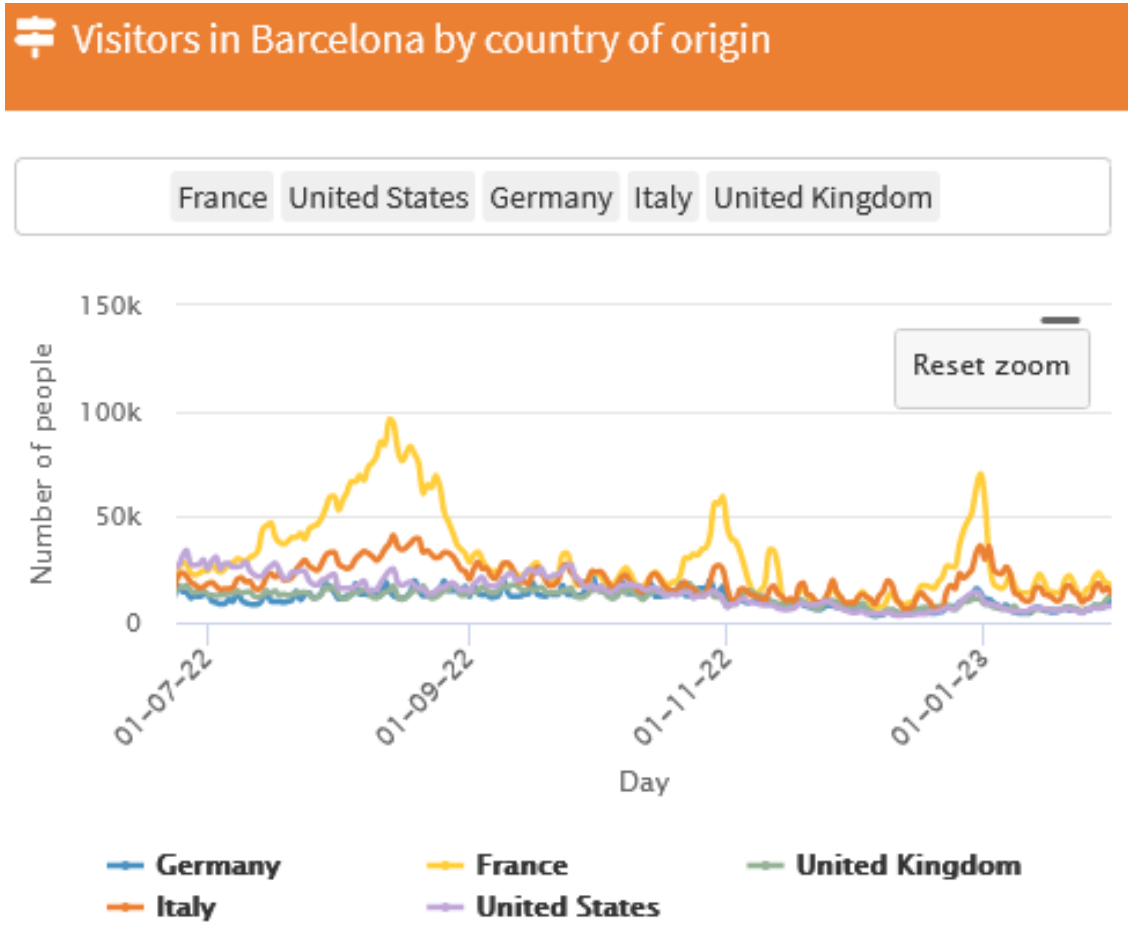
MOST VALUABLE P.DATA WE CURRENTLY USE



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CHALLENGES

1. Internal:
    - Legal arguments/discussions
    - Procurement process arguments/discussions
    - “GDPR” not an issue
2. External:
    - 1st the GDPR issue
    - Then the “Trade Secret” argument
    - And finally the usual “Operational” discussion

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CHALLENGING AREAS

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KNOWLEDGE CREATED

- Internal resources. No outsource (as first option).
- “Agile” Approach: Deliver, deliver, deliver.
- FLOSS (Continuous improvement, sovereignty)
- Co-work: Data Office+ IT Unit + Business Unit

Run from perfection, is the enemy of the good

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TALENT ATTRACTION/RETENTION

Attraction: Lets face it, we will not get the most talented people but ….

Retention: The key - from vertical to a transversal challenge approach

Danke Schön

MOLTES GRÀCIES

Ajuntament
de Barcelona

Hamburg

Spotlight on Bologna

Presentation by Stefania Paolazzi

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Data value in Bologna Digital Twin project

Comune di Bologna

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Comune di Bologna

Vision

Metropolitan Bologna offers a unique experimentation space for urban digital transformation. Bologna places **data for public good** at the center of the strategy “**City of Knowledge**”, to develop city assets and become a European knowledge platform.

Bologna envisages a **new governance of urban data** under the framework of the **city's Digital Twin**.

The Digital Twin will help build a realistic, innovative and sustainable data ecosystem centered on recognizing the **absolute value of individuals' rights** and on placing **"public value" of data** as the core of its strategy. A data ecosystem based on a deal between the city and its citizens for the **democratic sharing and use of data**, to improve **the social and economic impact of urban policies.**

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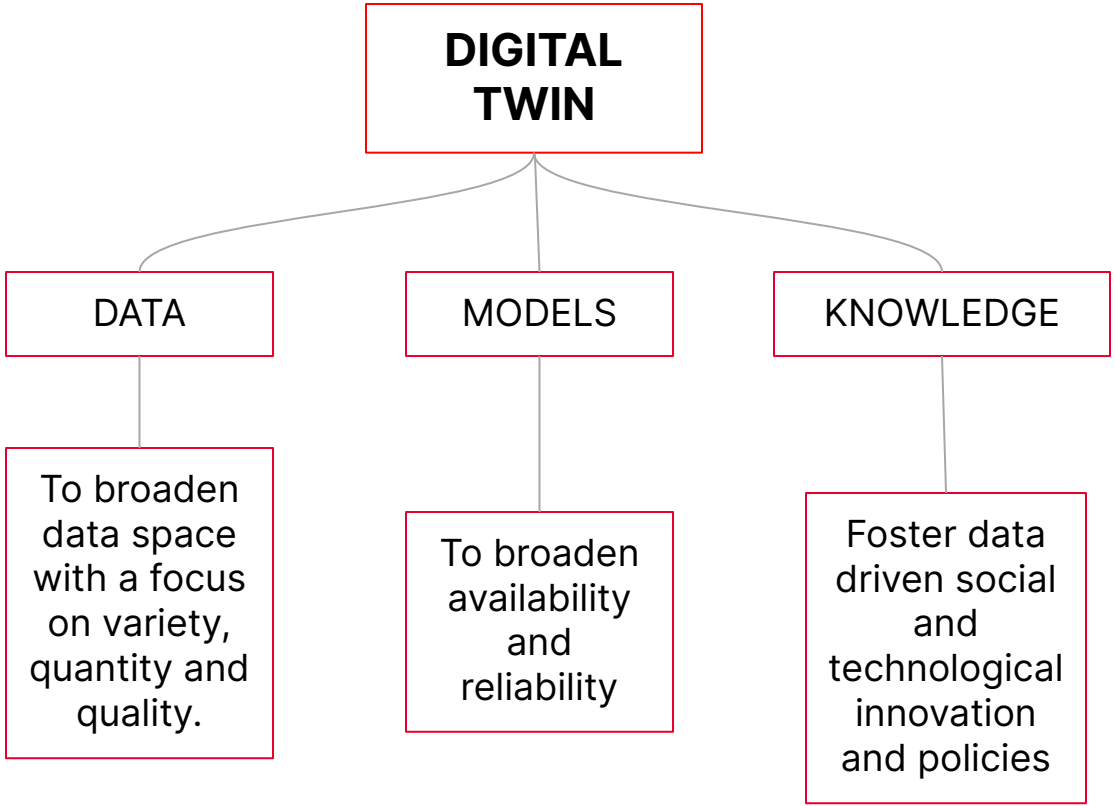
Bologna Digital Twin

Bologna aims to develop a **full digital model** of the city - based on the **collected online data and information** - supporting **decision making** through **analysis** and **forecasting**, and capable of co-evolving with its physical counterpart.

Deploying an incremental approach, Bologna DT will collect and process data from public and private actors as well as from individual citizens. Starting from the **mobility** and **energy** domains (and integrating the existing datasets), Bologna DT wants to experiment **new protocols and PPP schemes**, to develop an ambitious **data value strategy** and a **new civic infrastructure.**

A crucial role will be played by **Municipal utilities**, **micro-mobility players** and **key national companies based in Bologna** - such as Unipol.

Data value in Bologna DT



Data value in Bologna DT

DATA

Actions

- Incremental exploration and development of public data from the urban ecosystem
- Inclusion of citizen-generated data
- Memoranda of understanding, contracts and support to private actors for B2P(2P)
- Data sovereignty clauses in procurement contracts
- Data reuse strategies
- Know-how transfer

Features

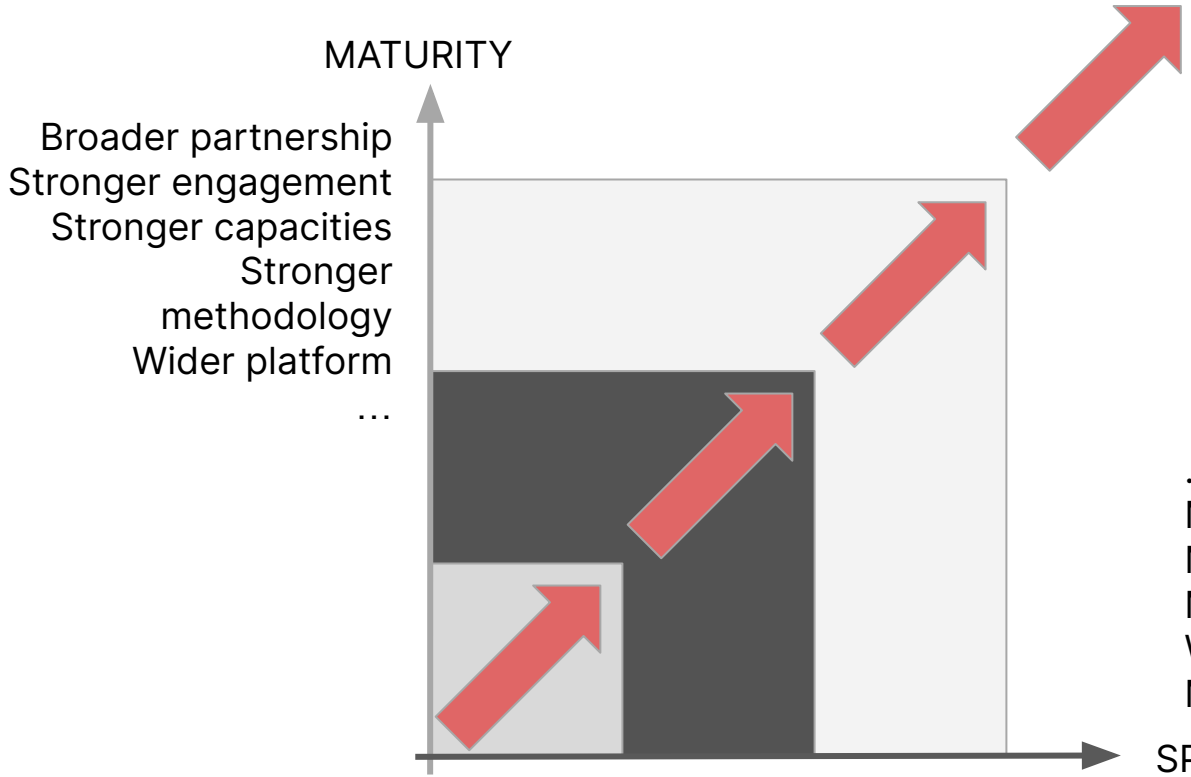
social and legal

- Policy use
- F.A.I.R.
- Right of access
- Citizens engagement by-design
- Privacy

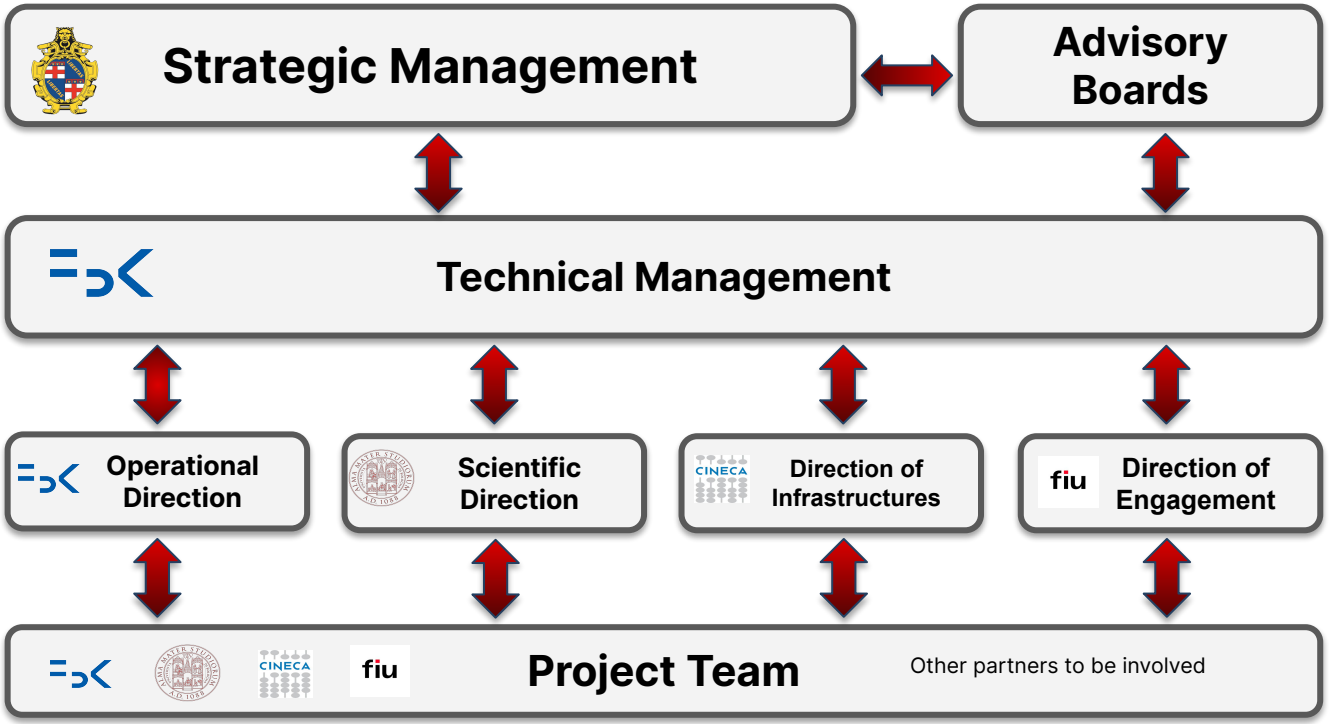
technological

- Data as a service
- Common data model
- Interoperability
- Data quality (complete and updated)
- Data monitoring (sourcing and traceability)
- Security

Bologna DT incremental approach

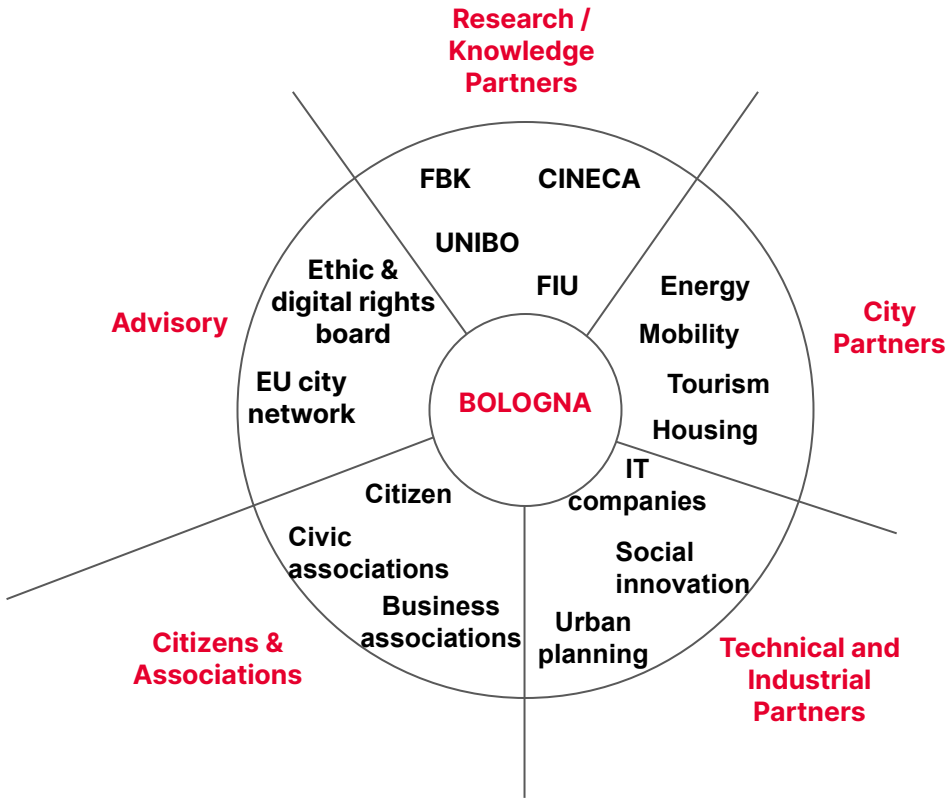


Management & Governance



Comune di Bologna

DT Community



Comune di Bologna

Talent attraction

- **Municipal strategy for talent attraction and retention:** focus on life quality and high level of city services.

- **Ecosystem value:** Bologna is currently undergoing an industrial transformation, led by the new Supercomputing center. In the next years the digital ecosystem will grow and interconnect with other national and international communities.

- **City as a Lab:** Within the City of Knowledge strategy, the Municipality of Bologna aims to experiment with “urban challenges approach”, connecting scientific production with the prototyping of solutions to meet the social, economic, technological and environmental challenges facing the City. By envisaging Bologna as a laboratory of research and development, the City intends to fund and offer technical support to public-private community ecosystems to prototype technological solutions, attracting competences and talent on specific projects and building new protocols for sharing public knowledge.

Comune di Bologna

Challenges

Technology & operations: Is the city ready for it? **3**

Legal: Has the city the necessary legal tools for it? **5**

Policy: Is it difficult to reach the necessary decisions to make it happen? **7**

Spotlight on Hamburg

Presentation by Adrian Fielder

(oral presentation, please see summary at beginning of this document)

Session 2
Governance Blueprint

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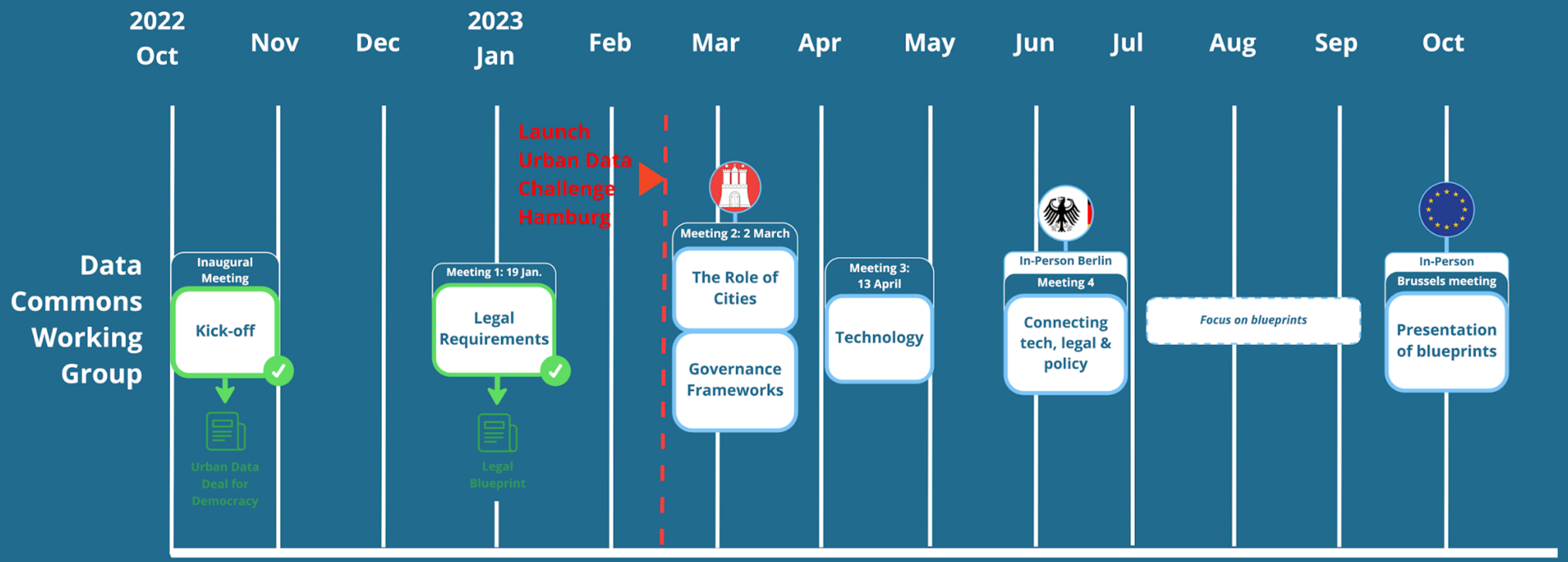
Reminder: context of the session



On the legal blueprint: intermediate status

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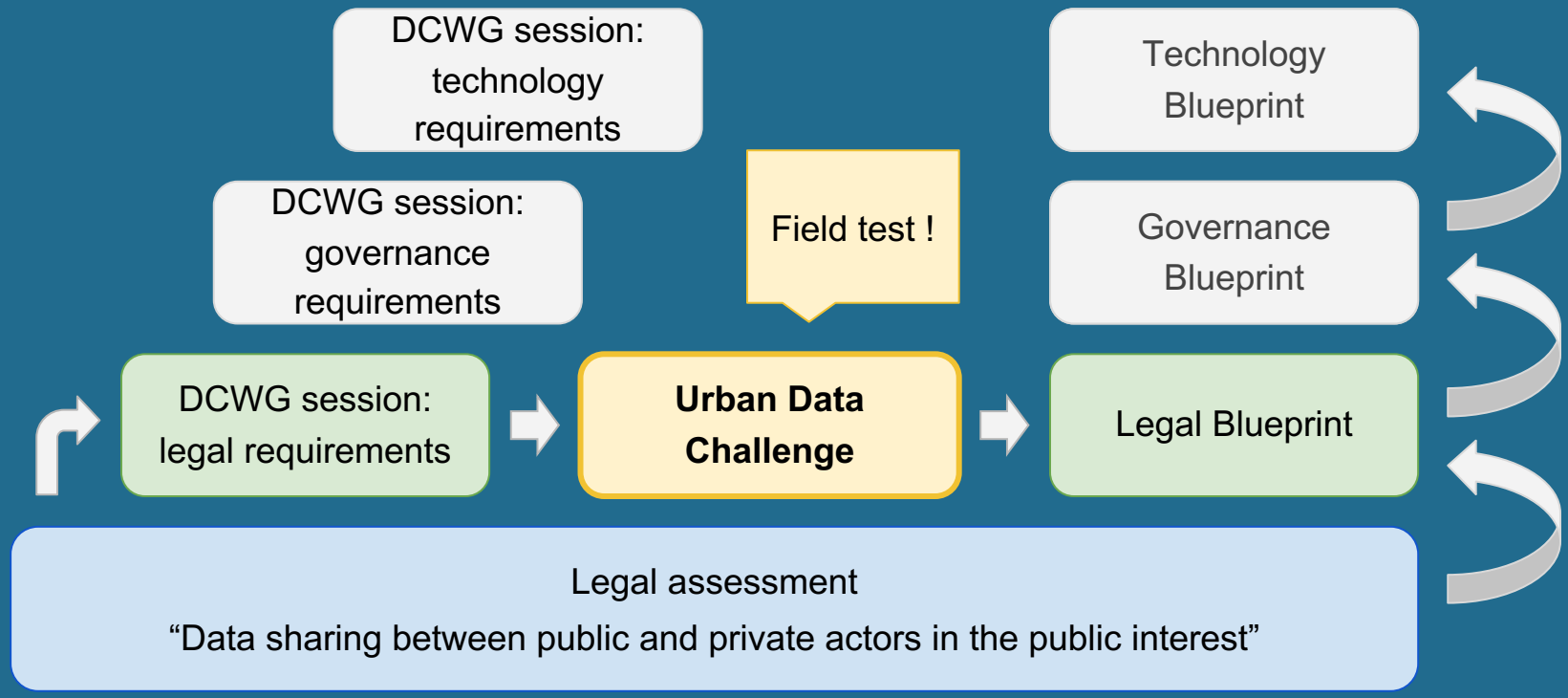
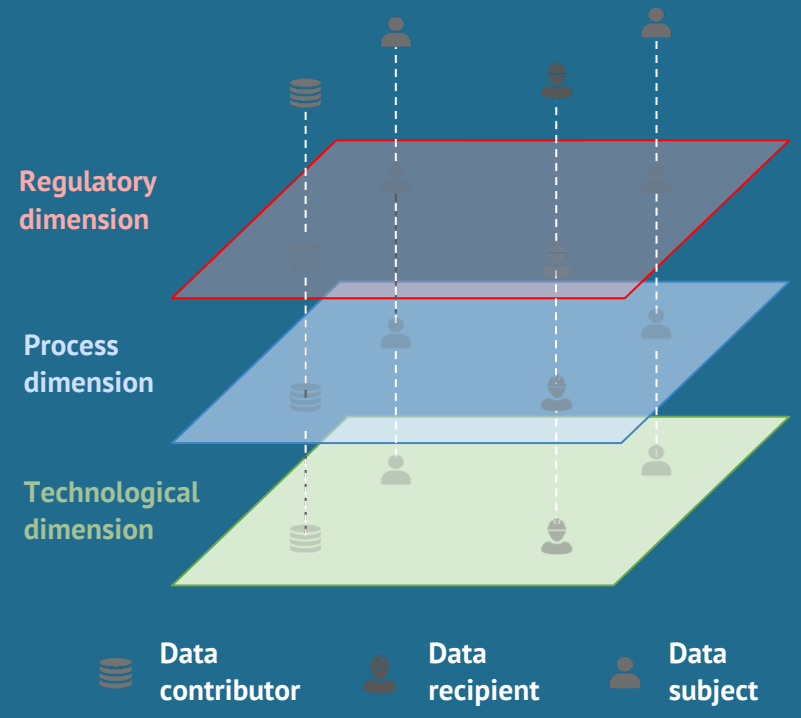
Overall perspective

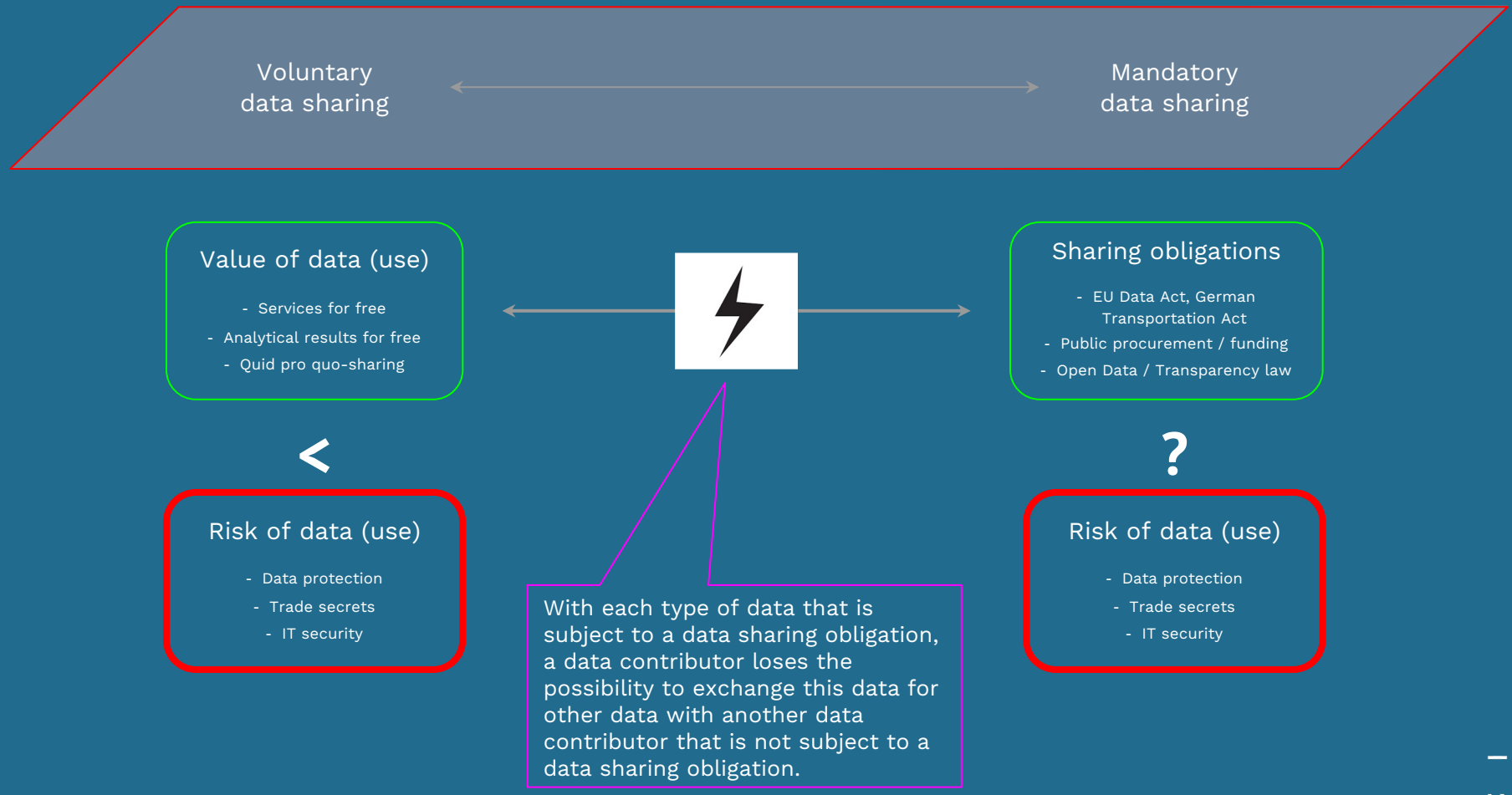


Conceptual starting point



- Many different laws (often conflicting each other) are applicable to the sharing of data according to the type of actors involved, their data in question and the respective data usage purposes
- Regulatory, technical and organisational/business aspects are tightly interwoven → too complex, too burdensome (too high compliance risks/costs)
- Dynamic assessment, since these aspects constantly change according to new data usages

Three main challenges



Solution approach

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Voluntary data sharing ⟷ Mandatory data sharing

Value of data (use)

- Services for free
- Analytical results for free
- Quid pro quo-sharing

Sharing obligations

- EU Data Act, German Transportation Act
- Public procurement / funding
- Open Data / Transparency law

<

for non-commercial purposes

compensation

- comparable or other data
- or re-financing the costs

Risk of data (use)

- Data protection
- Trade secrets
- IT security

?

for commercial purposes

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On the technical blueprint: Relevant questions to cover

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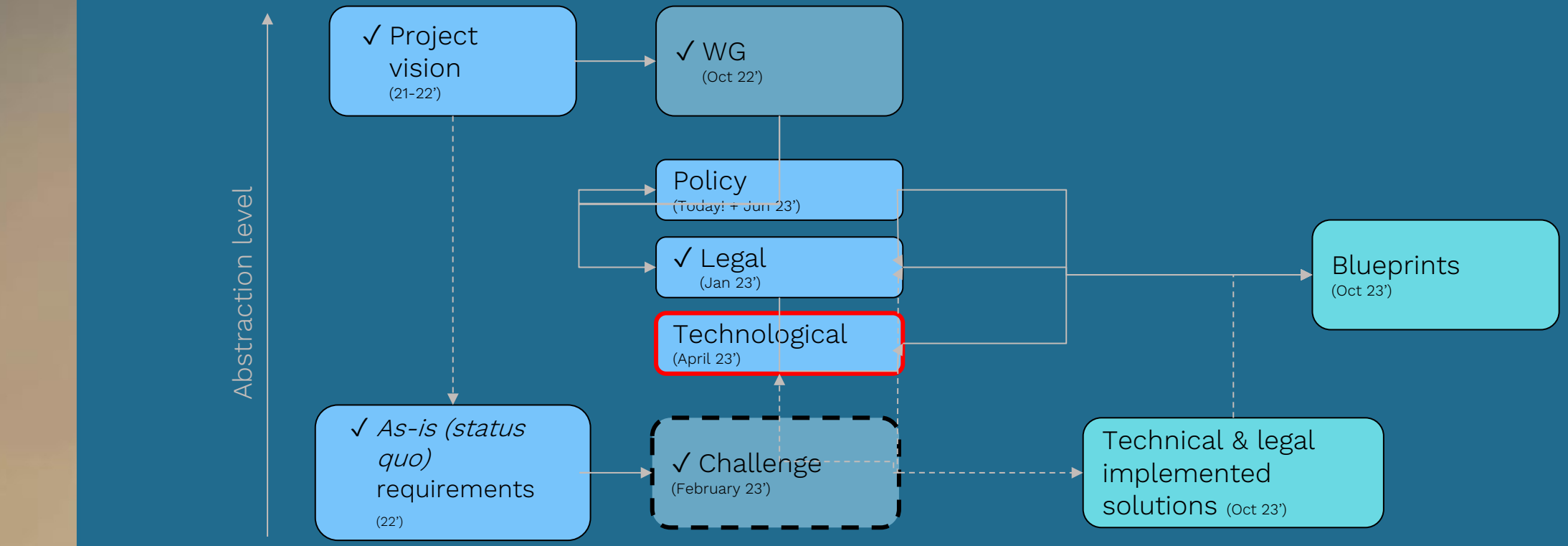
Where are we at?

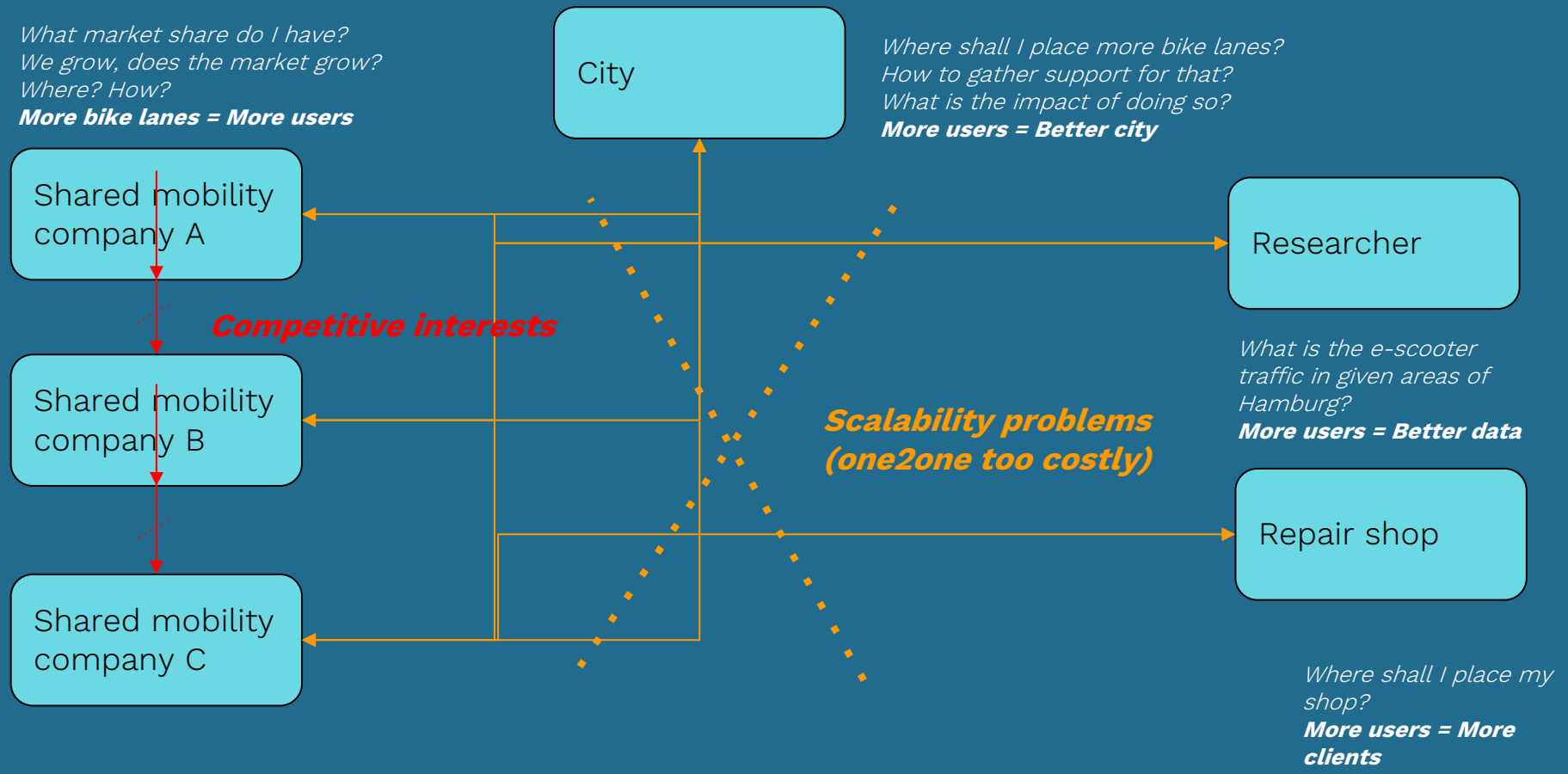


Key dates & inputs

- Tech stream presentation (today)
- Blueprint v0.1 (Table of contents): Document circulated (next weeks)
    - Feedback gathering among experts (you!) until **March 27th**
- Blueprint v0.2: Circulated one week prior to Tech meeting (April)
- Tech stream meeting **(April):** Comments + inputs
- Blueprint v0.3: Release candidate **(July)**
- Blueprint v1.0: First release **(August)**

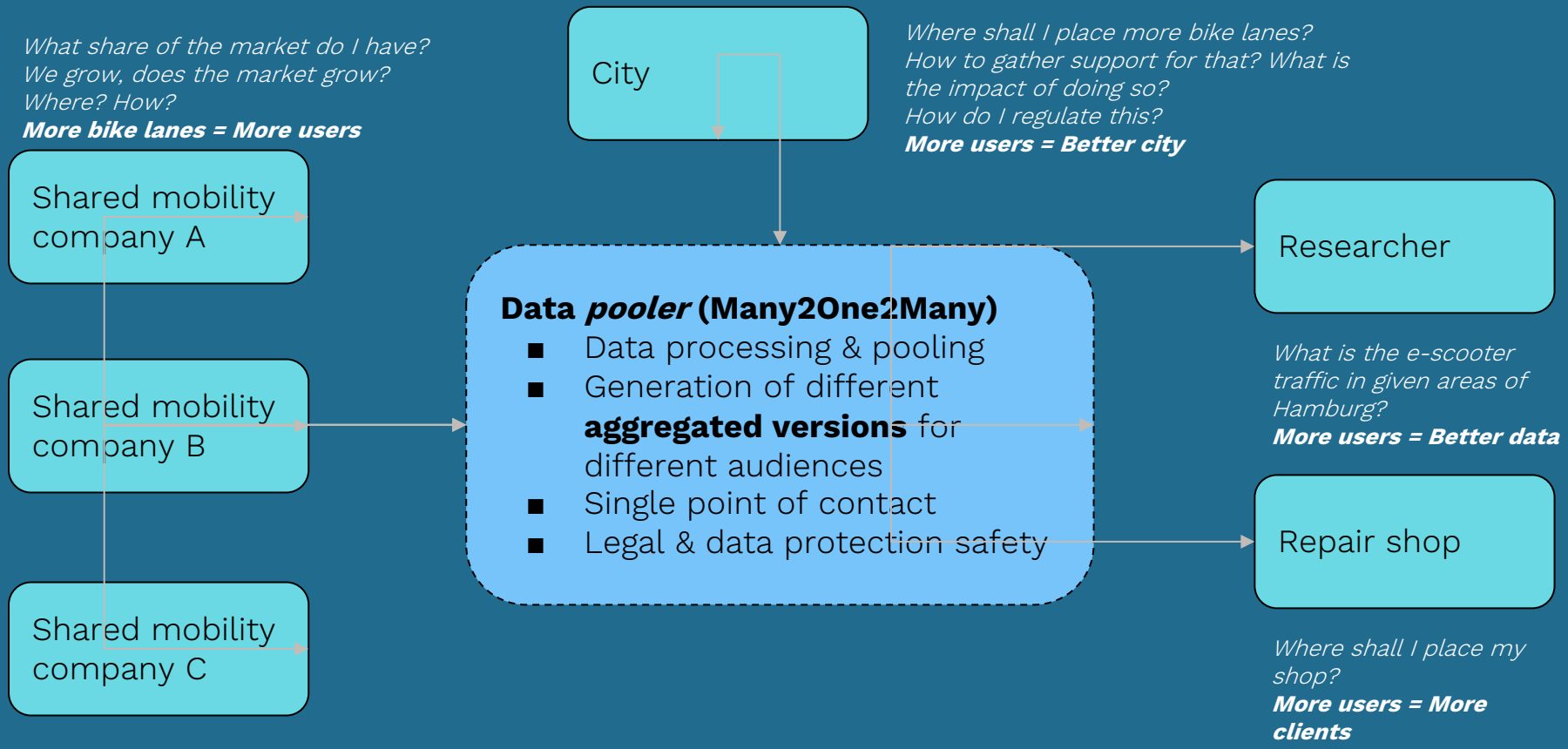
What are we trying to achieve?

An Example



What are we trying to achieve?

An Example



Main questions

? How to enable a **simple set-up** for **B2G2S data sharing**?
- Used to **enhance the public place** (regulation, planning, policy analysis...)?
- From a **specific case** (mobility as a service, MaaS shared services for micromobility operating on bike lanes) towards a **middle case** (whole urban mobility, including motorized vehicles) and a **general case** (B2G).

? Can we **enrich the original data provided by each participant** (aggregated view from many particular views)?
- What would be a potential use case for this?

? Can we design a **process for this that is safe, scalable and safeguards** many of the involved **stakeholders interests** and applicable law?

Key ideas

1. **Data != Information** → From same source, different **versions** are possible → Different risks → Different laws.
   - Find suitable mapping data transformation vs laws

2. **Sovereignty:** Who + What + (until) When + Why → Identity + Information + Use-case
   - Create data communities + set reusable rules for the combination info/time/actors/purpose

3. **Enforcement:** Rule abiding **within** the system
   - Transparent and auditable processes (to enable legal and organizational **preventive & punitive actions**)

4. **Scalability: Minimize** level of ambiguity (automate as much as possible)
   - Deterministic and controlled processes

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Open questions for experts

Food for thought

Adoption: Security vs usability vs cost
- What stack to suggest? (“old (rigid)” and “popular” vs “new (flexible)” and “not widespread”).
- Centralized vs federated set-up? (many2one2many or other uses as well?)
- Re-use existing standard but provide suggested low-level implementation?

Scalability: Balance between online/offline actions. Wider scale = Less control = Wider risk
- Can the system be ill-used by participants?
- System vs Legal vs Organizational assurances

Costs: Time vs implementation cost
- What to automate/streamline?
- Adoption by actors with different levels of tech maturity

Enforcement: Irreversibility of information transfer
- What to do about the impossibility to backwards revoking data access?
- How do we (technically) ensure data is used for the right purposes?
- What are the auditability needs of the system?

Data transformations: Data simplification vs value addition
- How to deterministically map data transformations vs commercial/personal risk/usability vs law of application?
- How to code data transformations so they can be certified by a given authority?

Existing tools: Can we reuse something from past experiments?
- Project vs Gaia-X/Data spaces approach: One2one vs Many2One2many
- Other approaches?

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Diving into the Governance Blueprint

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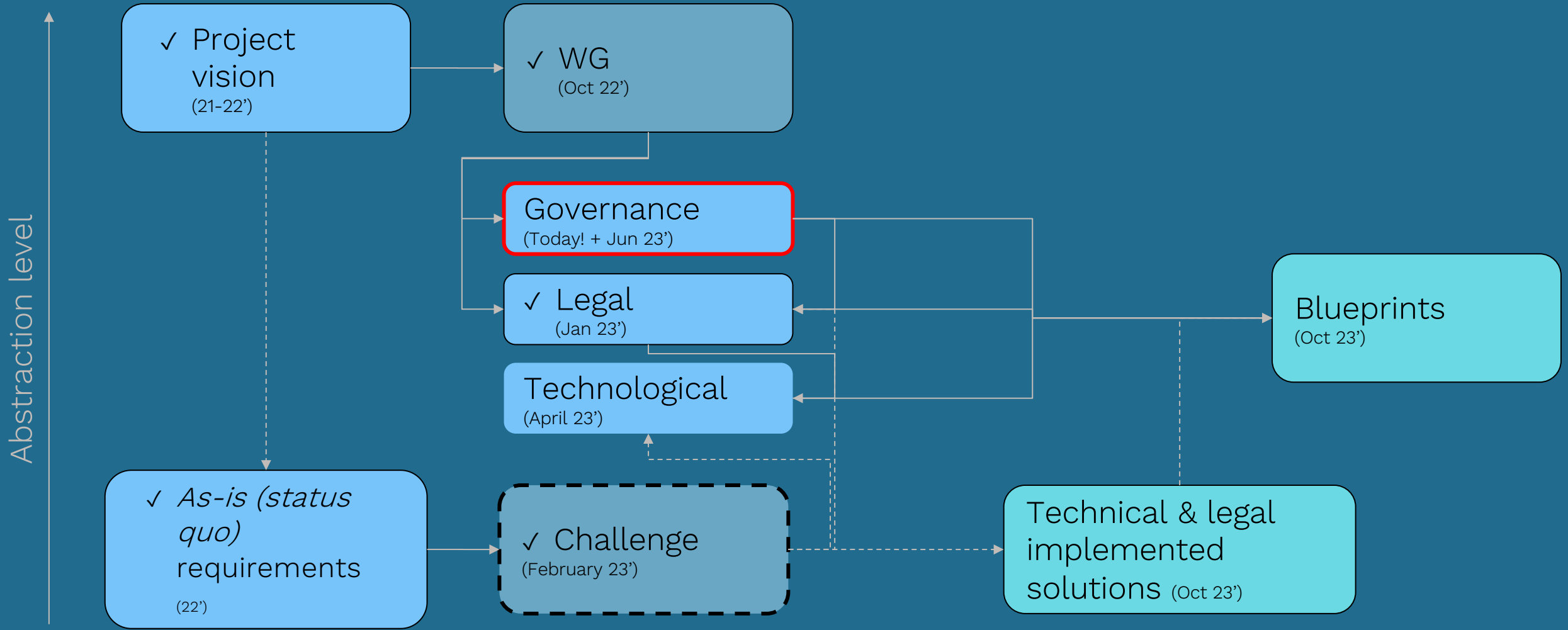
GOV STREAM: WHERE ARE WE?



OVERVIEW

- Public Interest, Value and Data Commons
- Use Cases
- Data Sharing and Governance Models
- Key Decision Areas

OVERVIEW

- Public Interest, Value and Data Commons
- Use Cases
- Data Sharing and Governance Models
- Key Decision Areas

PUBLIC INTEREST

We can think about two approaches to pursuing the public interest:

1. Reactive (market fixing)

2. Proactive (market shaping)

PUBLIC INTEREST

Reactive (market fixing) → Access data from micromobility operators to identify traffic violations or misuse of public space

Vs

Proactive (market shaping) → Pool data from different mobility operators to (i) gain a more detailed understanding of urban mobility and city life to shape policies, and (ii) enable research and development of new products and services

PUBLIC INTEREST

Reactive (market fixing) → Access data from micromobility operators to identify traffic violations or misuse of public space

The role of the Government is key as **orchestrator** and not just regulator

Proactive (market shaping) → Pool data from different mobility operators to (i) gain a more detailed understanding of urban mobility and city life to shape policies, and (ii) enable research and development of new products and services.

BARRIERS TO SHARING DATA

1. Value of data is unknown until used and measured for a particular purpose.

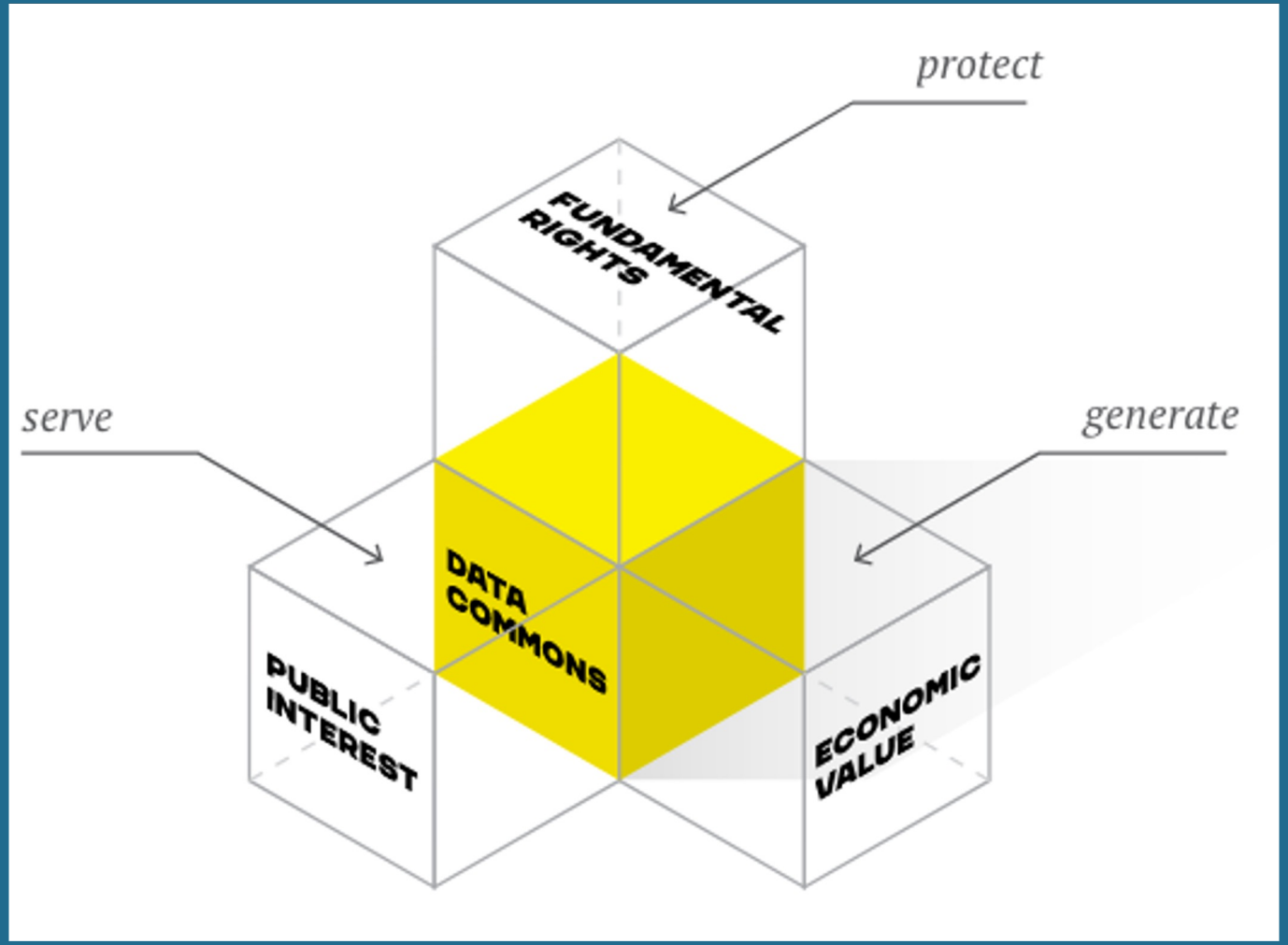
1. And yet the risks and the costs of sharing data are often immediately experienced for those sharing the data.

1. This renders cost-benefit analyses on the value of data challenging to undertake and therefore to an under-sharing of data.

OUR CHALLENGE

How can we promote the sharing (and pooling) of data to generate value?

DATA COMMONS



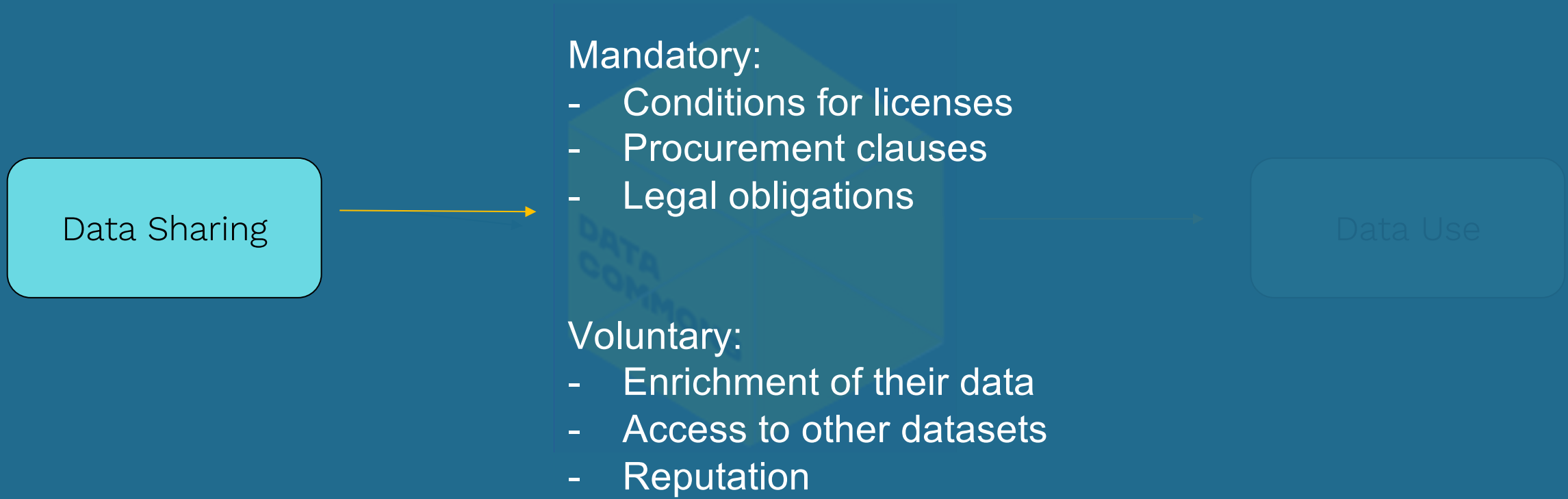
Source: Tarkowski and Zygmuntowski, 2022

DATA COMMONS

The intermediary that orchestrates the process

DATA COMMONS

The intermediary that orchestrates the process



Data Sharing Mandates

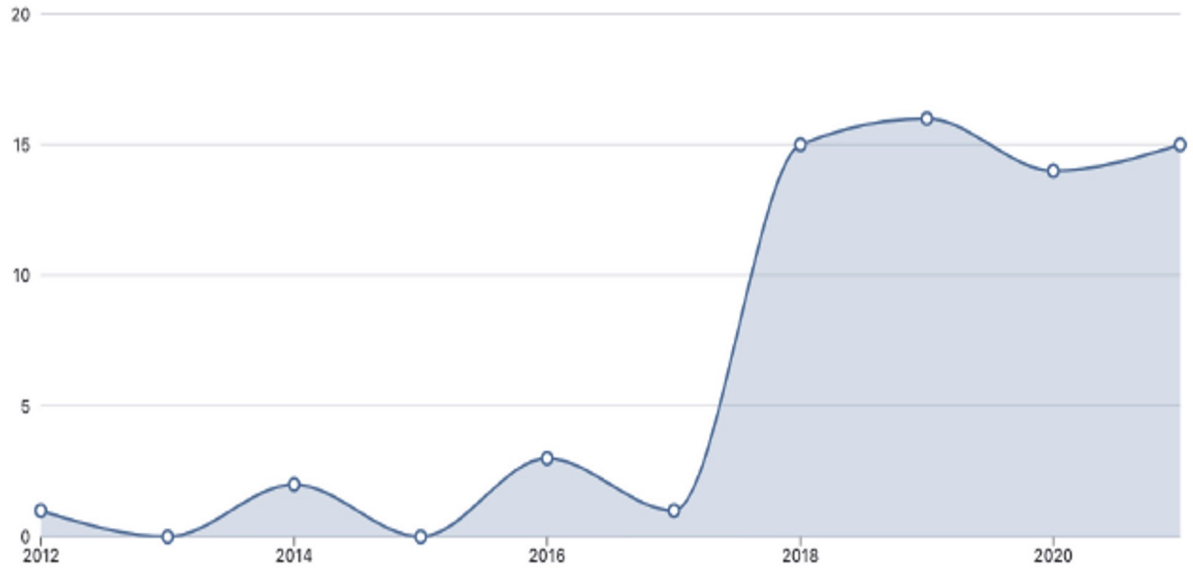


Figure 1. Number of observed Local Government Platform Urbanism Data Sharing (PUDS) Policies Enacted per Year. The chart shows a significant increase in PUDS policies enacted by local government agencies beginning in 2018.

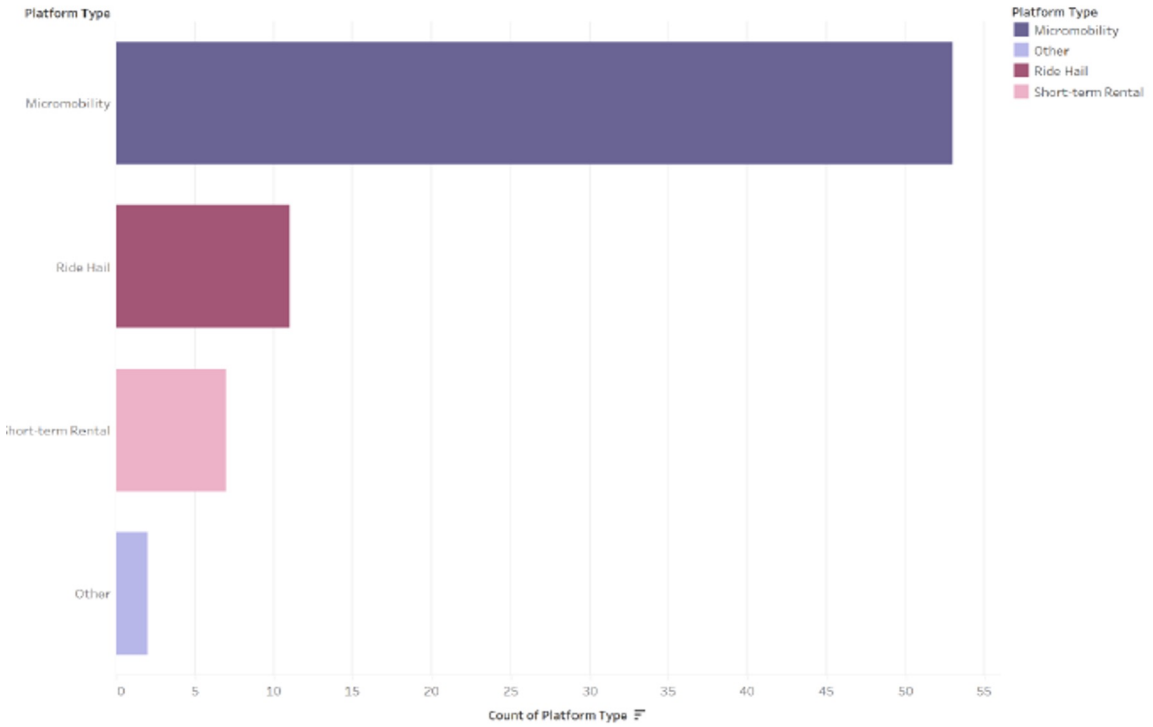
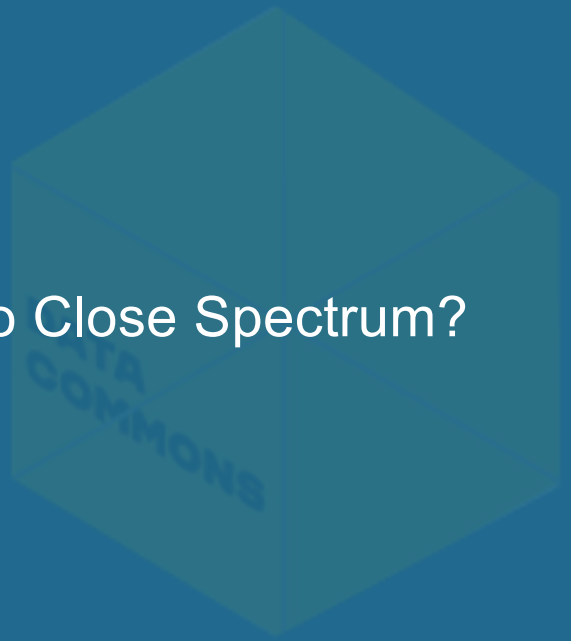


Figure 21. PUDS Policies by Type of Platform Regulated (Bar Chart). 52 out of 72 policies observed apply to micromobility platforms, representing more than 2 out of 3 PUDS polices observed.

DATA COMMONS

The intermediary that orchestrates the process

Where in the Open to Close Spectrum?

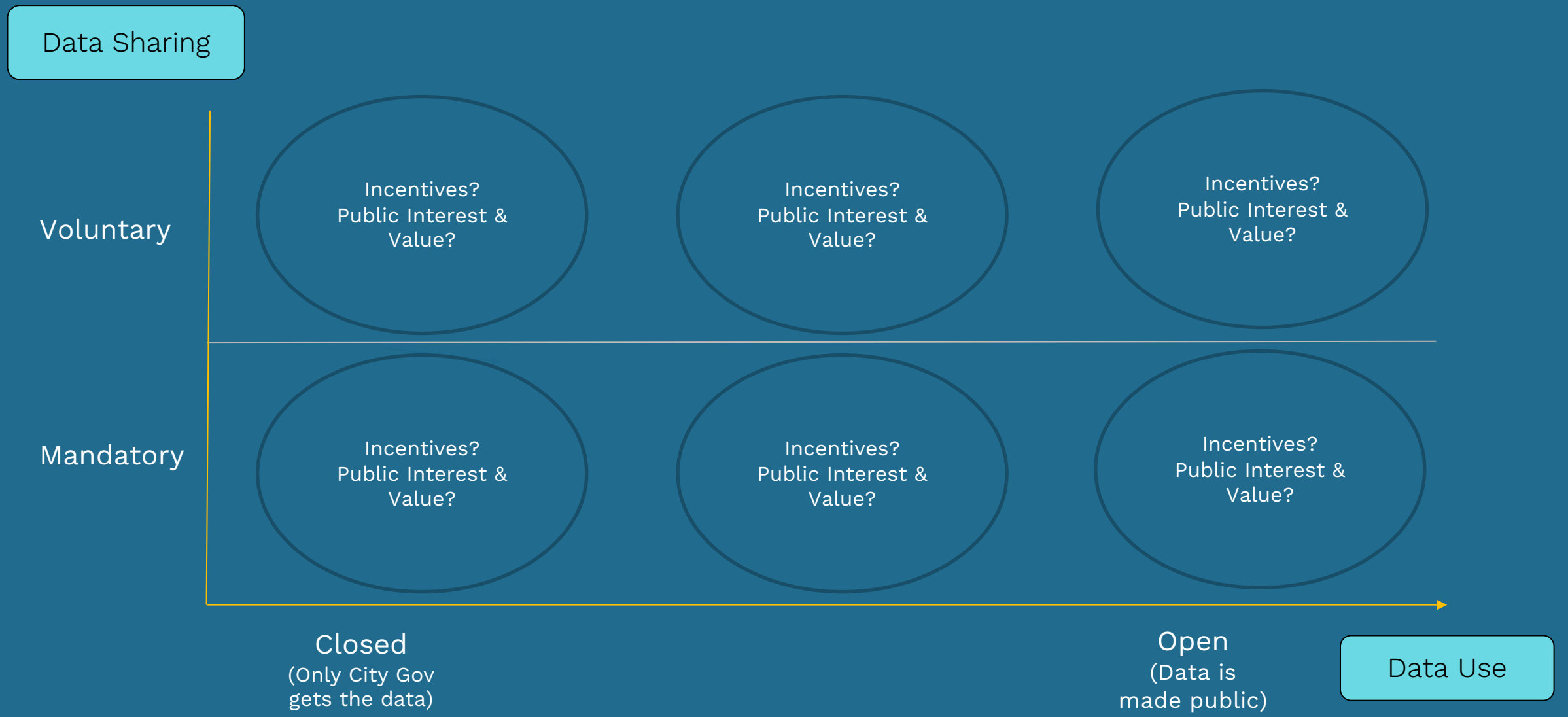


Data Use

OVERVIEW

- Public Interest, Value and Data Commons
- Use Cases
- Data Sharing and Governance Models
- Key Decision Areas

USE CASES


Data Sharing
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(Only City Gov gets the data)
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(Data is made public)
Data Use

USE CASES

Data Sharing

Voluntary

Mandatory

Waze for Cities

US DoT Secure Data Commons

NYC Recovery Data Partnership

CDS-M City Data Specification - Mobility

Shanghai's Electric Vehicles Data Platform

NZDPU Net-Zero Data Public Utility

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Data Use

Use Cases – City Data Specification in the Netherlands

Mandatory and mostly closed

Use Cases – City Data Specification in the Netherlands

THE NEW INSTITUTE

CDS-M

City Data Specification - Mobility

ROADMAP

Working with CDS-M involves seven steps. Every step is described below, together with downloadable documents and some links to additional information. Following this roadmap provides a ready-made set of documents and contracts that can be applied in practice straight away.

Use Cases – City Data Specification in the Netherlands

THE NEW INSTITUTE

CDS-M

City Data Specification - Mobility

COVER
INTRO
INDEX

ROADMAP

1. DEFINE THE PROBLEM
2. SELECT THE USE CASE
3. PRIVACY ASSESSMENT
4. SECURITY ASSESSMENT
5. LEGAL AGREEMENTS
6. DATA EXCHANGE
7. DATA ANALYSIS & EVALUATION

BACKGROUND

CONTACT

DEFINE THE PROBLEM

WHO IS IT FOR? *Policy officer, project lead*

With CDS-M a use case is always linked to a city's vision in the field of shared mobility. Use cases describe what decisions are made, what data are needed for that purpose and how they contribute to the organization's objectives.

Every use case begins by defining the problem. A problem definition is essential in order to formulate the use case. If the problem is not defined, the roadmap plan cannot be followed.

In CDS-M all the use cases are described by means of the use case template. This template maps what the problem is, what assumptions there are about solving the problem, and describes which data items make the problem measurable. This is the start of the use case.

TIP: Involve the relevant mobility provider in drawing up the use case. In this way, good cooperation is guaranteed from the start.

TOOLS

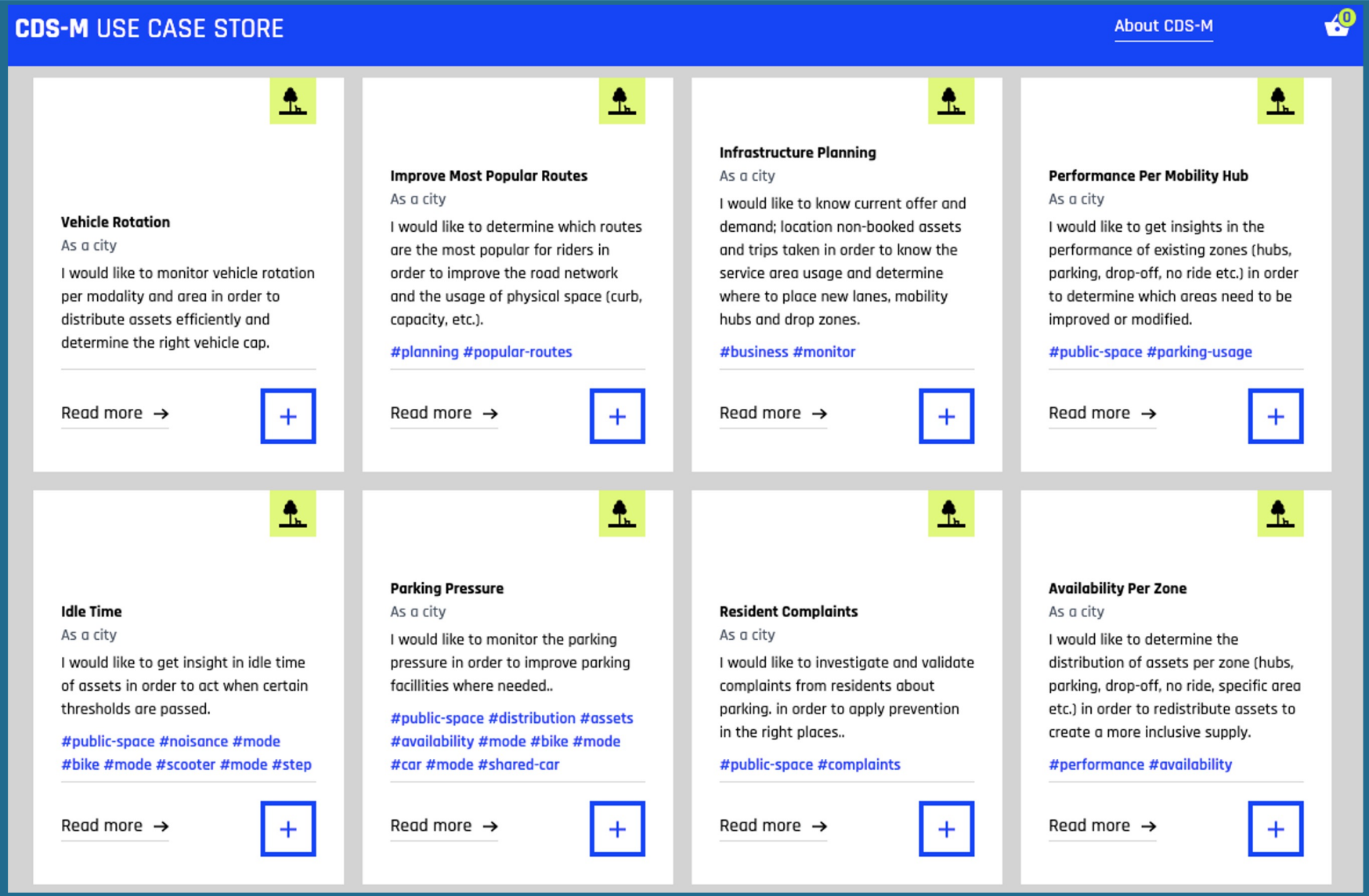
Handy tools for progressing this subject.

Use case template

Map your problem with the use case template and the data items.

DOWNLOAD

Use Cases – City Data Specification in the Netherlands



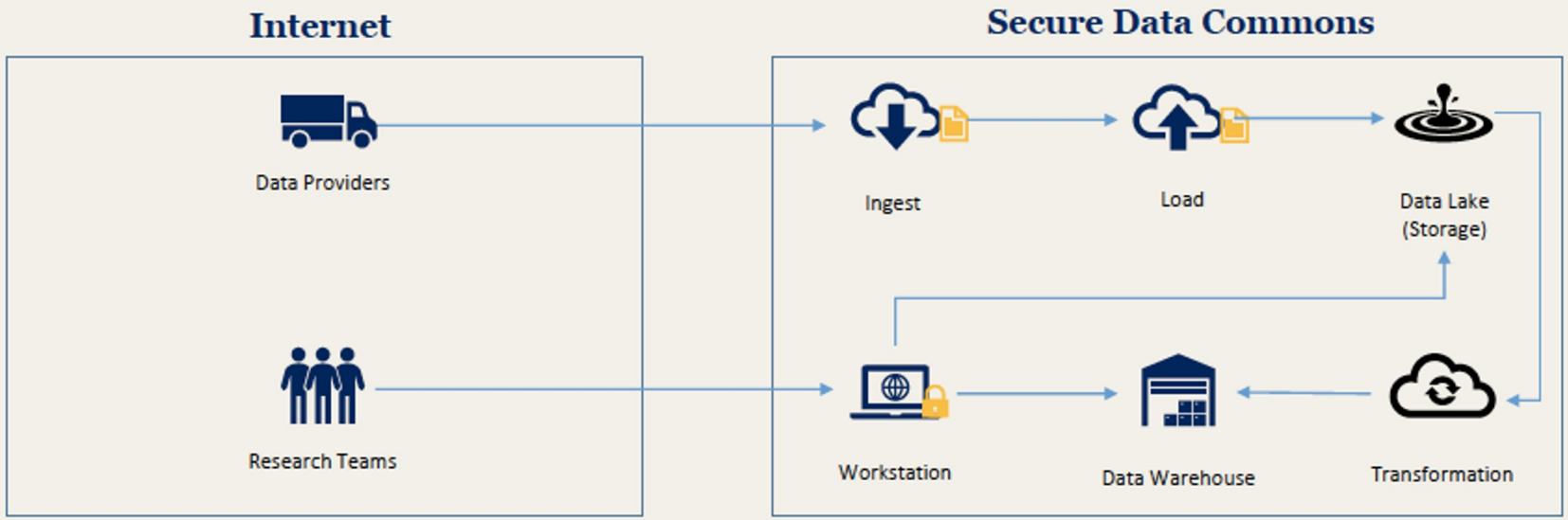
Use Cases – US DoT Secure Data Commons

Voluntary and semi-open

Use Cases – US DoT Secure Data Commons

Example of SDC Architecture

We bring in data from the following data providers into the SDC, using the repeatable pipeline architecture below.



Data Providers:

1. *Connected Vehicle Pilot* (CVP): New York City (NYC), Wyoming Department of Transportation (WYDOT)
2. WAZE for Cities Program
3. Federal Railway Administration (FRA) Agile RSIS Data Science Program (ARDS
4. Open Source Software for Intelligent Transportation Systems (OSS4ITS)

Ingests and Datasets

1. *Data Ingest: Upload to secure AWS S3 buckets (Data Storage)*
2. *Data Lake: AWS Lambda (Data Transformation) then moves data from ingest to the data lake (Data Storage)*

U.S. Department of Transportation
Office of the Chief Information Officer

Use Cases – US DoT Secure Data Commons

Project Spotlights

Project Spotlights are designed to bring awareness to the how SDC was utilized to support the research program needs.

Connected Vehicle Pilot (CVP) Deployment Program

Facilitating independent evaluation of the safety impacts of connected vehicle technology

FRA Agile Railroad Data Science Programs (ARDS)

Integrate railroad data with external datasets, from other DOT modes and other government agencies

Highlights from the Waze Alerts User Community

Compiled SDC Crowdsourced Traffic Data on traffic jams, hazardous roadside parking, crashes, and reported road closures

COVID-19 Waze Traffic Alert Dashboard

Visualizing changes in roadway transportation activity with the COVID-19 Waze Traffic Alert Dashboard

Use Cases – US DoT Secure Data Commons

Connected Vehicle Pilot (CVP) Deployment Program

Facilitating independent evaluation of the safety impacts of connected vehicle technology

The CV Pilots Deployment Program sought to combine Connected Vehicle technologies in innovative and cost-effective ways to improve traveler mobility and system productivity, while reducing environmental impacts and enhancing safety. The USDOT selected three pilot deployers: New York City Department of Transportation (NYCDOT), Tampa-Hillsborough Expressway Authority (THEA), and Wyoming Department of Transportation (WYDOT). All three deployments provided post-processed data to the Secure Data Commons (SDC). The SDC provided support to Independent Evaluators conducting safety-related assessments analyzing vehicle paths, driver alerts, forward collision warnings, and imminent collision warning data. These safety evaluators were able to make discoveries from CV Pilot data in a variety of formats including: KML Files, CSV Files, Auto Generated Reports, and Data Histograms within SDC platform. Per privacy-related agreements with the deployment sites (documented in their Data Management Plans), these data have been retired. Data that have been scrubbed for sensitive and personally-identifiable information, along with associated analytic tools, may be found on the ITS Data Hub.

Use Cases – Shanghai's Electric Vehicles Data Platform

Mandatory and mostly closed

MAIN QUESTIONS

- What approach is sought: proactive or reactive?
- What are the use cases that show how this public interest can be achieved?

Based on these considerations

- Where does the model fall in the mandatory/voluntary and closed/open spectrum?

OVERVIEW

- Public Interest, Value and Data Commons
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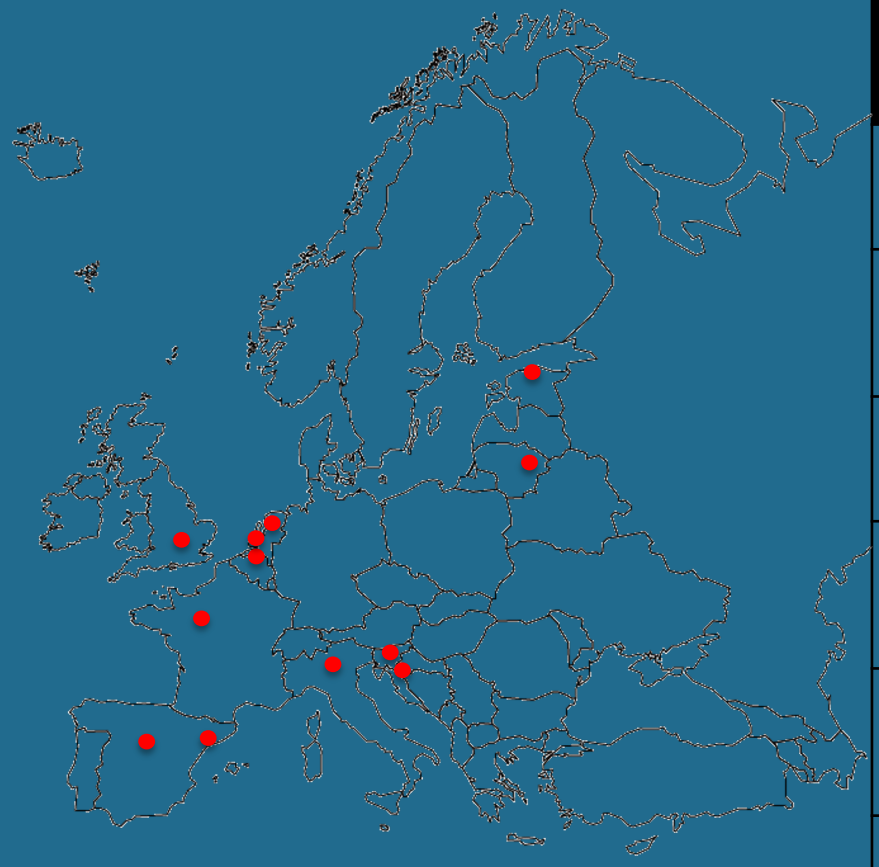
- Key Decision Areas

Typology of B2G data sharing approaches derived from interviews with cities representatives

OPERATIONAL MODELS TO ACCESS PRIVATE SECTOR DATA OF PUBLIC INTEREST



MODELS	EXAMPLES
Data donorship	LinkedIn
Purchase of data assets	Why Vodafone for Ready Cities — Vodafone Power to you
Data sharing pools	Connected Citizens
Data sharing obligations	Barcelona digital city — Putting technology at the service of people (2015-2019)
Research data partnerships	Consumer Data Research Centre — An ESRC Data Investment
Challenges and hackathons	Urban Mobility Hackathon — Towards a greener city.

Micheli, M. (2022). Public bodies' access to private sector data: The perspectives of twelve European local administrations. *First Monday*, *27*(2). https://doi.org/10.5210/fm.v27i2.11720

Typology of B2G data sharing approaches derived from interviews with cities representatives

OPERATIONAL MODELS TO ACCESS PRIVATE SECTOR DATA OF PUBLIC INTEREST

Data donorship

Companies decide to share data at no cost to 'smart cities' to market their services. 'Regular cities' might be disadvantaged.

"There is the ethical question, do we want to have a free lunch if others are paying for it?"

Data sharing pools

Cooperative engagement based on shared interests. Influenced by networks and know-how.

"We're paying each other with value, not money (..) the collaboration starts with the connection between people".

Purchase of data

Limited of power for municipalities, companies set the terms for how data is shared, long negotiations needed.

"The company has set the rules, we are not in the stage were we set the rules, (we are) getting a month worth of data as a sample".

Data-sharing obligations

Clauses included in tender contracts in a city subcontracted services.

"We are trying to set-up this very clearly for everyone to understand when they are dealing with the city council and what we expect they share with us".

Typology of four "alternative" data governance models based on literature review

Emerging models for the governance of data

Table 2. Summary of data governance models.

Model	Key actors	Goals	Value	Mechanisms
Data sharing pools (DSPs)	• Business entities • Public bodies	• Fill knowledge gaps through data sharing • Innovate and develop new services	• Private profit • Economic growth	• Principle of 'data as a commodity' • Partnerships • Contracts (e.g. repeatable frameworks)
Data cooperatives (DCs)	• Civic organisations • Data subjects	• Rebalance power unbalances of the current data economy • Address societal challenges • Foster social justice and fairer conditions for value production	• Public interest • Scientific research • Empowered data subjects	• Principles from the cooperative movement • Data commons • 'Bottom-up' data trusts • GDPR Right to data portability
Public data trusts (PDTs)	• Public bodies	• Inform policy-making • Address societal challenges • Innovate • Adopt a responsible approach to data	• Public interest • More efficient public service delivery	• Principle of 'data as a public infrastructure' • Trust building initiatives • Trusted intermediaries • Enabling legal framework
Personal data sovereignty (PDS)	• Business entities • Data subjects	• Data subjects self-determination • Rebalance power unbalances of the current data economy • Develop new digital services • centred on users need	• Empowered data subjects • Economic growth • Private profit • Knowledge	• Principle of 'technological sovereignty' • Communities and movements (e.g. MyData) • Intermediary digital services (personal data spaces) • GDPR Right to data portability

Typology of four "alternative" data governance models based on literature review

Emerging models for the governance of data

Horizontal collaborations among two or more data holders to increase value production and share benefits.	Members of a community collect, aggregate and collectively manage data for common and public interest.
DATA SHARING POOLS	**DATA COOPERATIVES**
Public bodies act as trustees on behalf of citizens, use data to inform policy-making and address societal challenges.	Data subjects can choose among an ecosystem of services that allow them to aggregate and use their personal data for other pursposes.
PUBLIC DATA TRUSTS	**PERSONAL DATA SOVEREIGNTY**

Micheli, M., Ponti, M., Craglia, M., and Berti Suman, A. (2020) Emerging models of data governance in the age of datafication. *Big Data & Society* 7(2): 1-15. https://doi.org/10.1177/2053951720948087

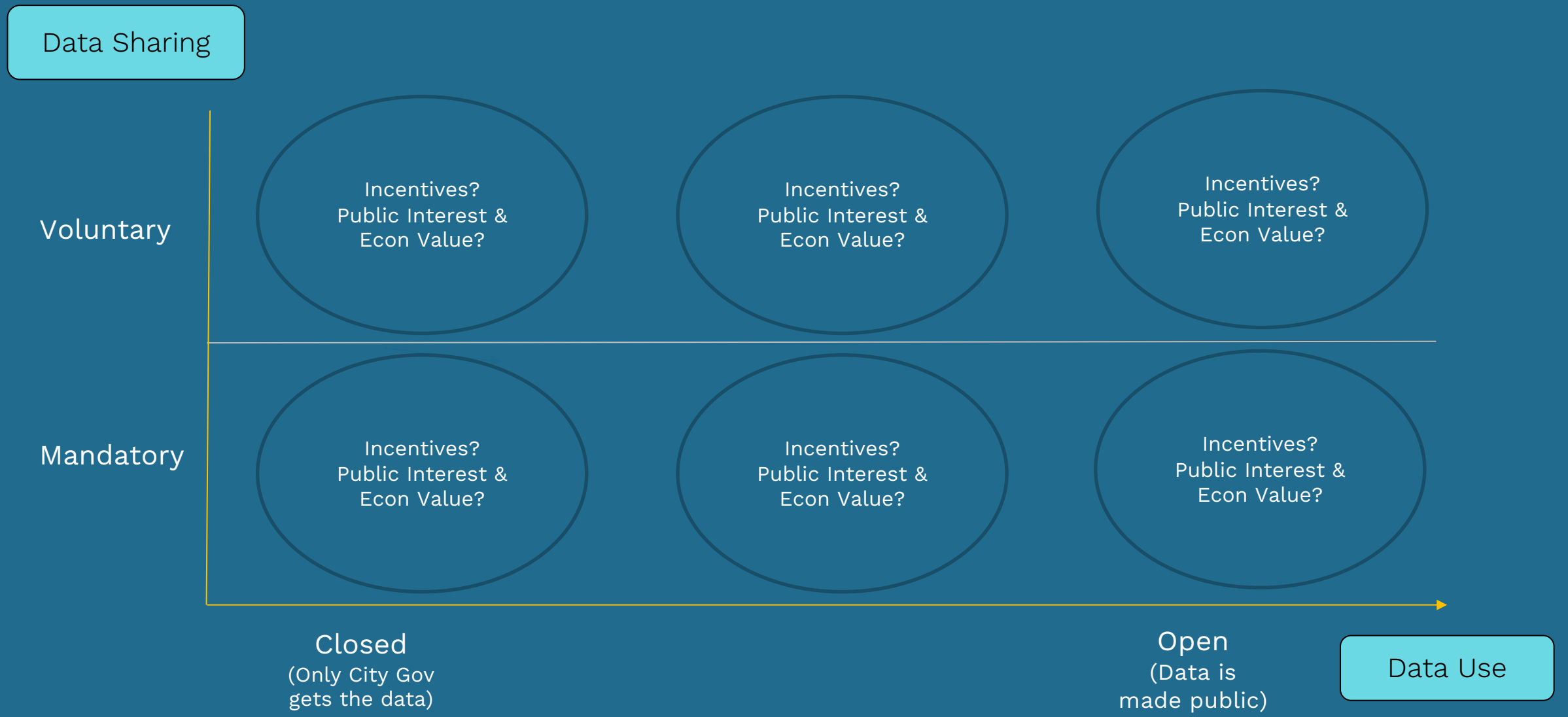
OVERVIEW

- Public Interest, Value and Data Commons
- Use Cases
- Data Sharing and Governance Models
- Key Decision Areas

KEY DECISION AREAS FOR THE MODEL IN HAMBURG

1. Determine the public interest that will be prioritized
2. Determine what data needs to be shared by private entities
3. Determine whether data will be shared in a mandatory or voluntary manner
4. Determine whether data will be made open or closed (or what are the degrees of openness to different data)
5. Determine whether there is a need for an intermediary, and if so, what will it look like

MODELS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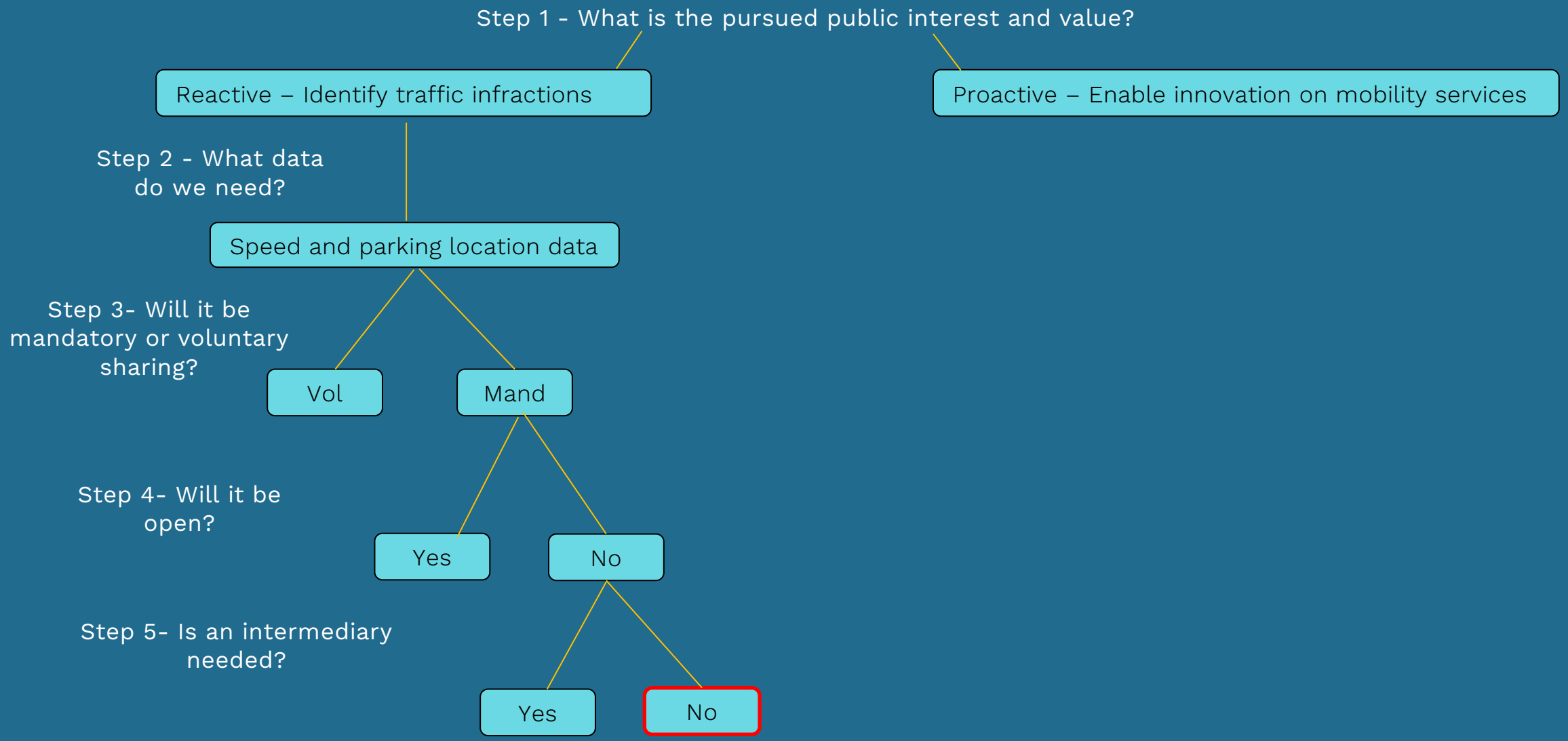
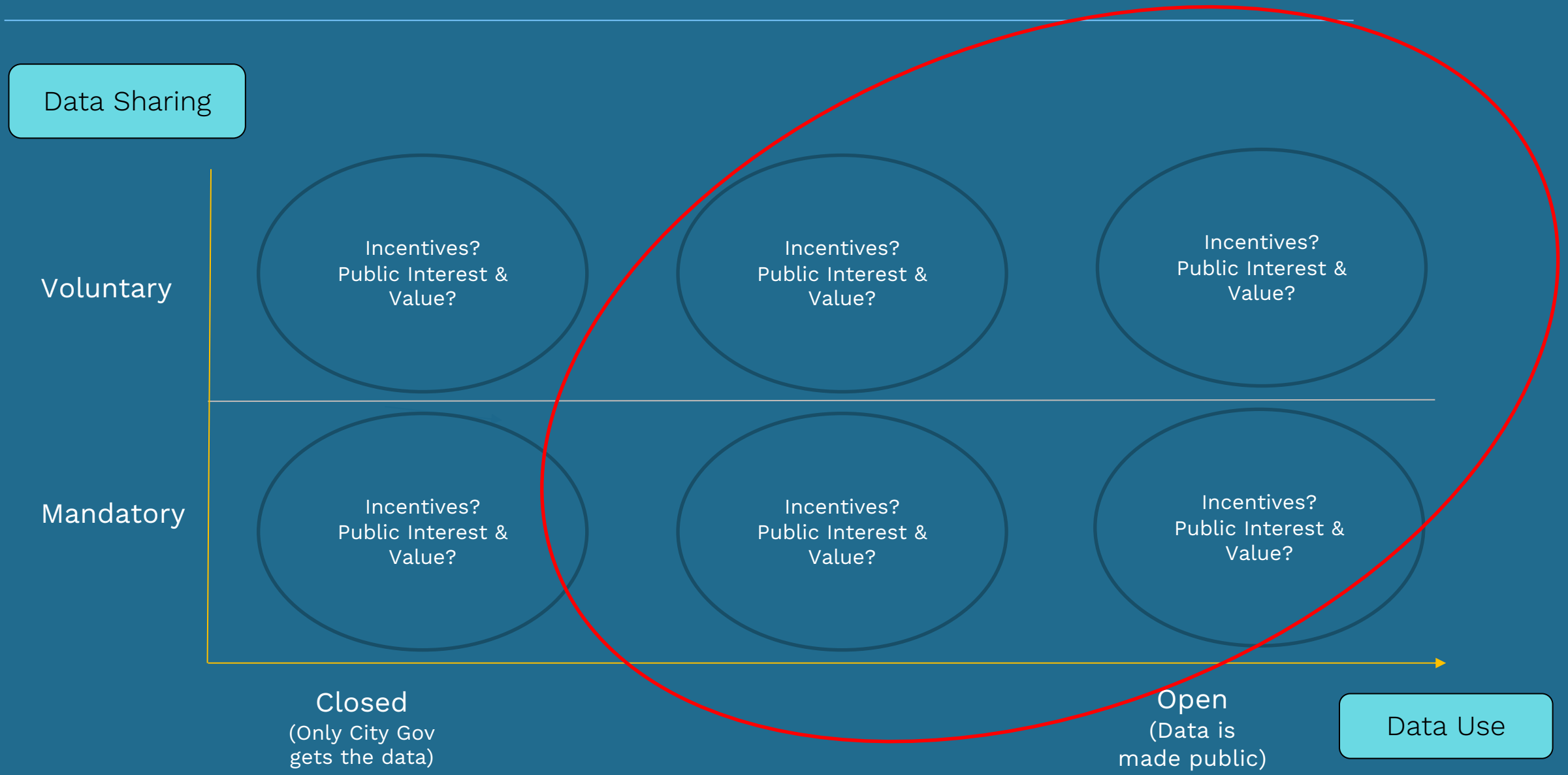
GOVERNANCE ROADMAP – Mandatory and Closed



MODELS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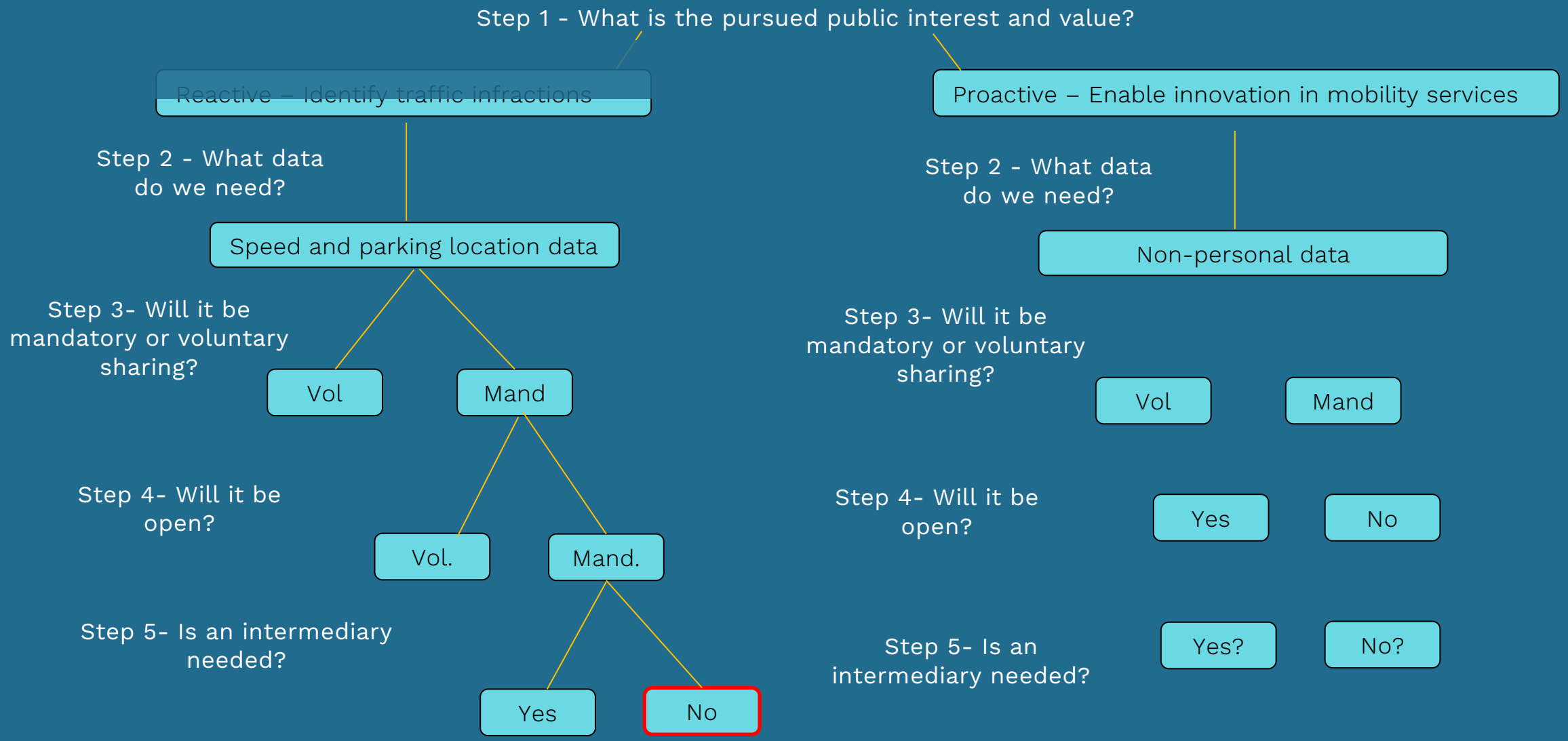
GOVERNANCE ROADMAP – Voluntary and (semi)Open



STEP 1 – DEFINE PUBLIC INTEREST AND VALUE

1. Will public interest be defined broadly or on a case-by-case basis? By whom?

1. What are the pros and cons of each option?

STEP 2 – WHAT DATA NEEDS TO BE SHARED?

1. Types of data

- Personal or non-personal or both?
- Mobility data or other sectors as well?
- Data collected (i) in the public space, (ii) in the context of a contractual relationship, or (iii) broader?

2. What are the pros and cons of each option?

STEP 3 – WILL THE SHARING OF DATA BE MANDATORY AND/OR VOLUNTARY?

1. What are the mechanisms for mandatory data sharing?
- Procurement clauses
- Conditions for licenses and permits
- Legal obligations

2. What are key aspects for voluntary data sharing?
- Incentives
- Data sharing contracts

3. What are the pros and cons of each option?

STEP 4 – WILL DATA BE MADE PUBLIC?

1. Who will have access to the data?
- Public
- Closed (just the city requesting the data)
- Semi-open (selected group of entities)

2. What are the pros and cons of each option?

STEP 5 – WILL THERE BE AN INTERMEDIARY?

1. Does the selected model require the establishment of an intermediary?

2. Types of intermediaries
- Government owned entity
- Entity participated by different stakeholders
- Private entity (data intermediary according to the Data Governance Act)

3. What are the pros and cons of each option?