

**NORDIC
DATA
FEST
IVAL
2024**

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Peter Sarlin

CEO and Co-Founder of Silo AI

The Link between AI, Data ecosystem and Data



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Ute Burkhardt

Product owner

Catena-X Automotive Alliance

From Value Chain Digitalisation to Data Ecosystem Economy



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Nordic Data Festival 2024

From Value Chain Digitalisation to Data Ecosystem Economy



Catena-X - The first Automotive Data Space & Volkswagen's way to adopt

Our Motivation

Collaborative must-win battles for the automotive industry

RESILIENCY



“Today’s peer to peer supply chain network doesn’t do the job”

EXECUTIVE AWARENESS

SUSTAINABILITY AND
REGULATORY REQUIREMENTS



“Flow of data across the entire value chain requires new collaboration models”

DATA ECOSYSTEM

GEO POLITICS AND INNOVATION



“Sharing data is a matter of trust and sovereignty”

EUROPEAN VALUES GAIA-X

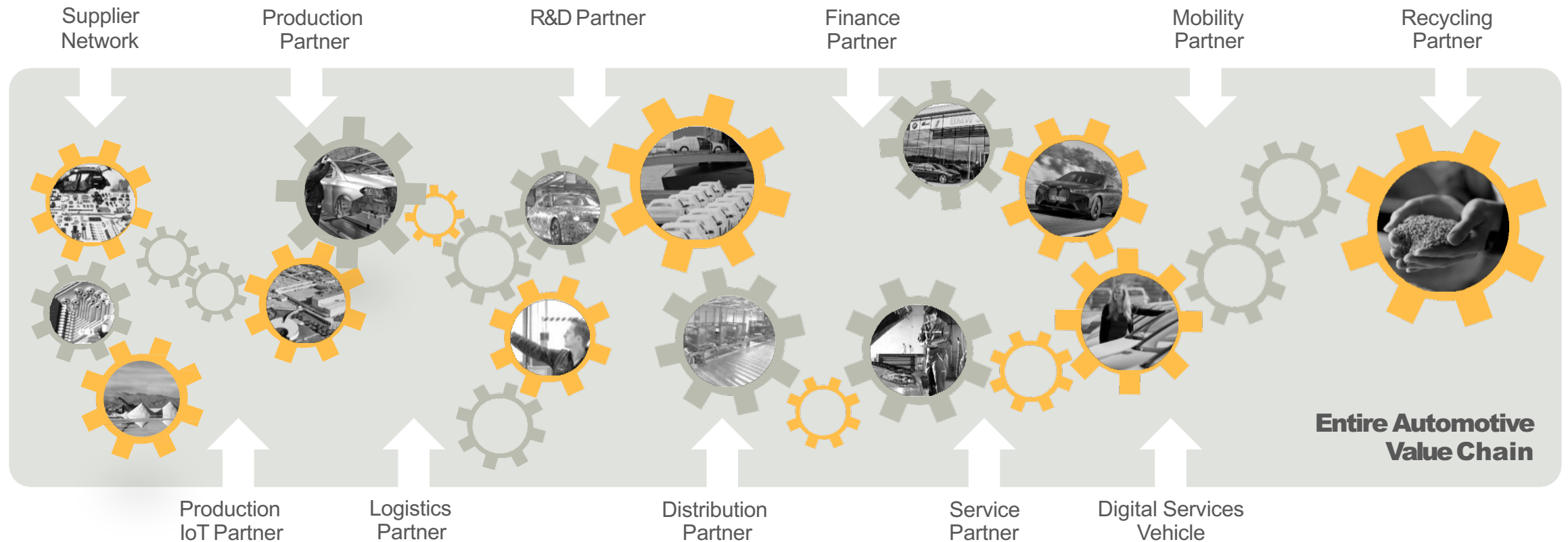
ECONOMICS



“Network adoption and interoperability is a team effort”

INDUSTRY DATA SPACE

Data Driven Value Chain incorporating all Participants and Steps



Catena-X

Lighthouse Project for the Automotive Industry

We build data-driven value chains

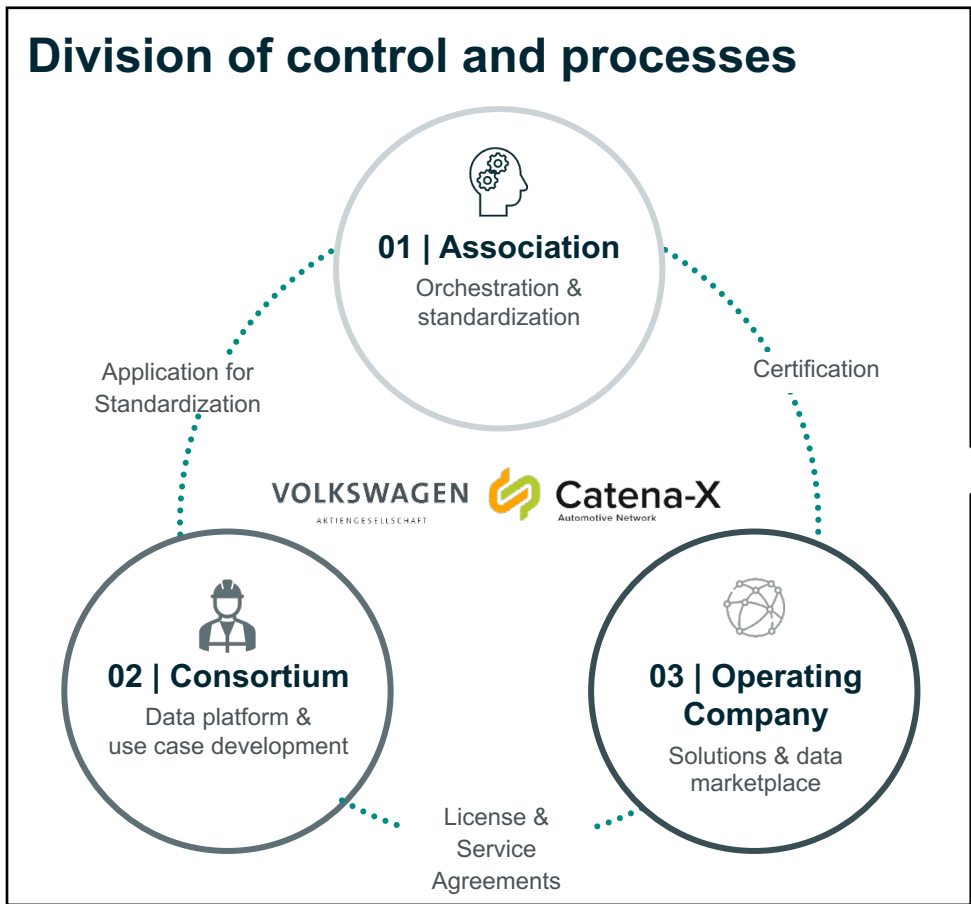
We make applications interoperable

We focus on time to value

We guide and support our user groups

We are the
fitness program
for the automotive industry & tap into
new value pools

Catena-X is divided into three legal entities to accomplish the vision and mission of Catena-X



Partners of each entity of Catena-X

01 Association | 160+ members



02 Consortium | 28 members



03 Operating Company – Cofinity-X | 10 Shareholders



» We, as Volkswagen, ensure the best possible cross-brand use of Catena-X through active positioning in the Association, Consortium and Operating Company #1

What is Catena-X and why is such a high added value to be expected?

“From data silo to end-to-end data chains”

Example

Recycling

OEMs

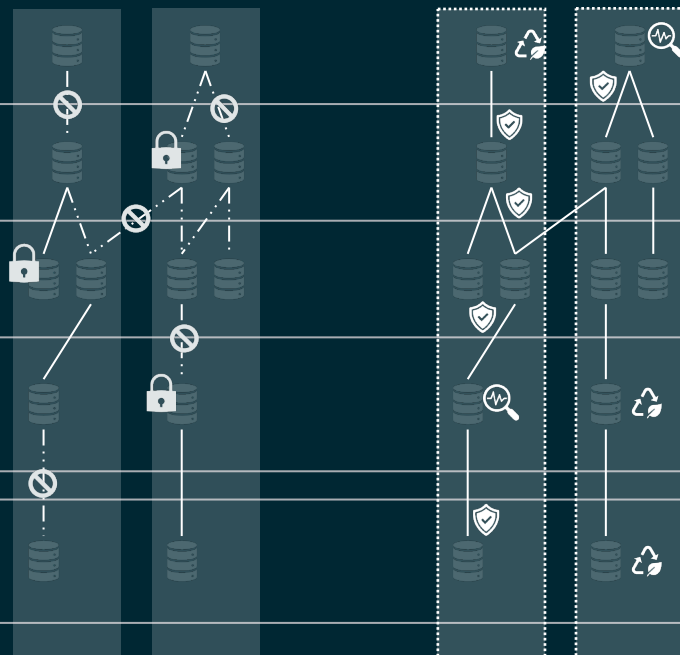
Tier-1

Tier-2

...

Tier-n

Status quo



Examples of challenging use cases to be solved by Catena-X:



Traceability

Building data chains, standardized data access & ensuring the Supply Chain Act



Demand & Capacity Mgmt.

Bottleneck transparency & security of supply



Sustainability & CO2-Footprint

Carbon footprint assessment & compliance with social standards



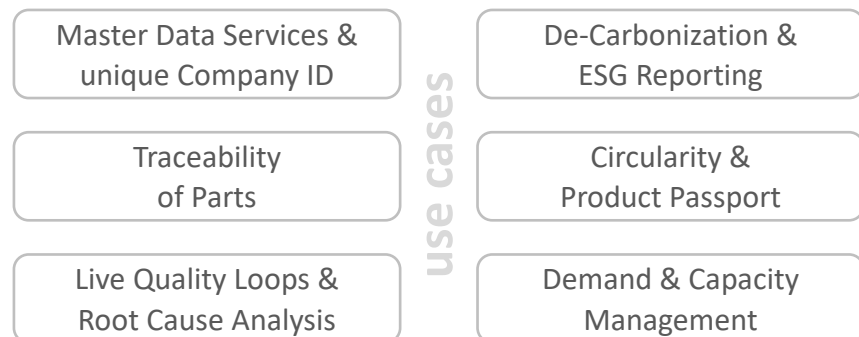
An important prerequisite for the success of Catena-X and the establishment of data chains is, in addition to consumption, the willingness to provide data on a fair level

What is new about Catena-X, compared to previous solutions

Catena-X doesn't replace existing offerings, it fills gaps and redirects forces towards a common **GOAL**.
Catena-X enables all participants to collaborate compliantly within one shared global **DATA SPACE**.

Common **GOAL**

Solve top industry problems together and now



... many more to come in 2024

Shared global **DATA SPACE**

- One **operating model** and **federated operating system** for the data space
- **Customer value journeys** for common GOALS enabled by open, multi vendor marketplaces



- Foundational services and **standards** built upon **OSS (KITs)** with dedicated **developer journeys**



- **Neutral governance**, incl. conformity assessment body

We simply call this „**NETWORK of NETWORKS**“

Enabling a data driven value chain collaboration for the first time

Volkswagen is currently involved in 8 Use Cases, further involvement is continuously in assessment



Catena-X – Solutions to be implemented in 2023/2024



The first Go-Lives within Volkswagen using the Catena-X functionalities of the Business Partner Data Mgmt. (BPDM) and Quality Mgmt. use case **are scheduled for 2023.**

The provision of **basic functionalities** (e.g. traceability) by Cofinity-X is a **prerequisite.**

Timeline of Catena-X use case Go-Lives at Volkswagen



¹ Predictive Unit Real-Time Information Service (PURIS)

Thank you!



Ute Burkhardt

Product Owner@Catena-X

IDSA Board Member

 <https://www.linkedin.com/in/ute-burkhardt/>



**INTERNATIONAL DATA
SPACES ASSOCIATION**



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Lars Nagel

CEO
IDSA

**The International
Data Spaces Association
(IDSA)**



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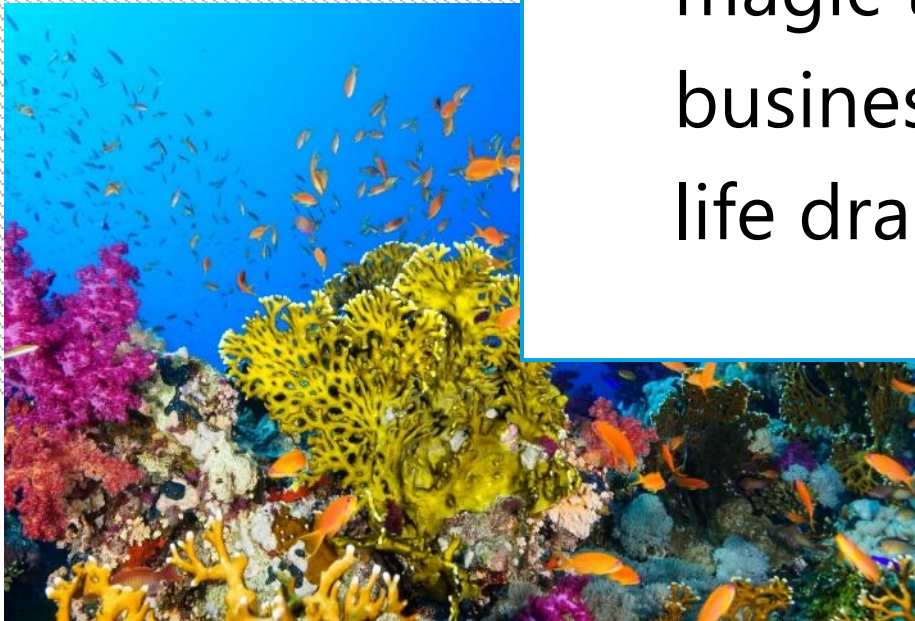
What are data spaces?

*Nordic Data Fest
Helsinki | 10.04.2024*

Lars Nagel | CEO International Data Spaces Association



» Data spaces are a kind of magic that makes business, economies and life dramatically better.





- » Paradigm shift for the way we share data
- » Prerequisite to make data economy and game changers like AI happen
- » It allows to share data that is currently not shared yet (~98 %)

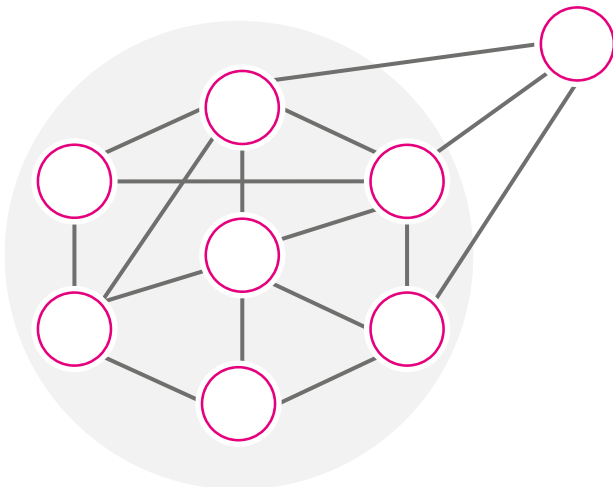


Trustful data sharing takes place in data spaces

Where participants share one common trust framework



A decentralized and dynamic data ecosystem:
with many-to-many interactions



A **data space** is the sum of all end points that are able to share data with each other.



- Decentralized/Centralized/Federated data architecture: no physical data integration, leave data where it is
- Interoperability: no silos, no vendor-dependency
- Data Sovereignty and traceability
- Trusted participants
- Usage control for data as economic asset

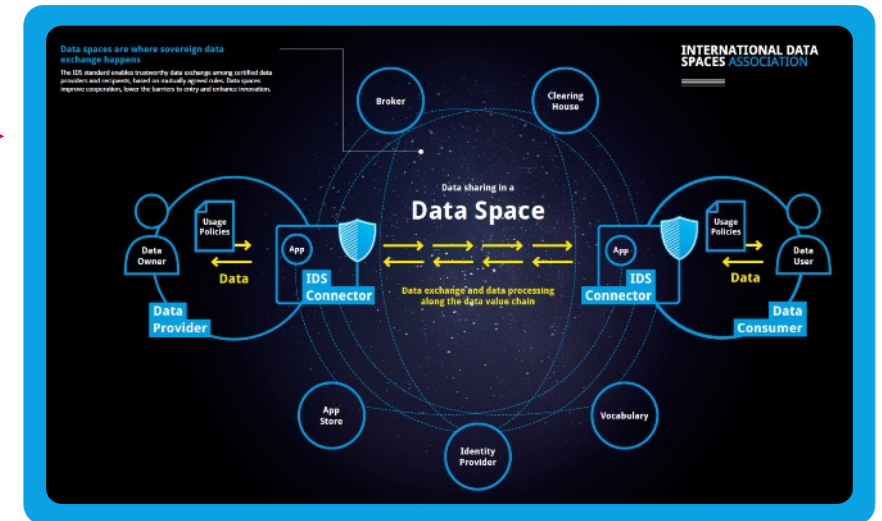
Our northstar: checklist for Data Economy

... and blueprint for all data spaces



What exactly does “data economy” call for?

- Secure end2end data exchange
- Trusted parties
- Make FAIR principles work
- Understand others: data models
- Process data, remote execution
- Monetize data
- Usage policies and enforcement



IDS Reference Architecture, IDS Data Space Protocol, IDS Rulebook and IDS-certified connectors guarantee these features

Make the connection and enable data economy

The key to data spaces is the data connector

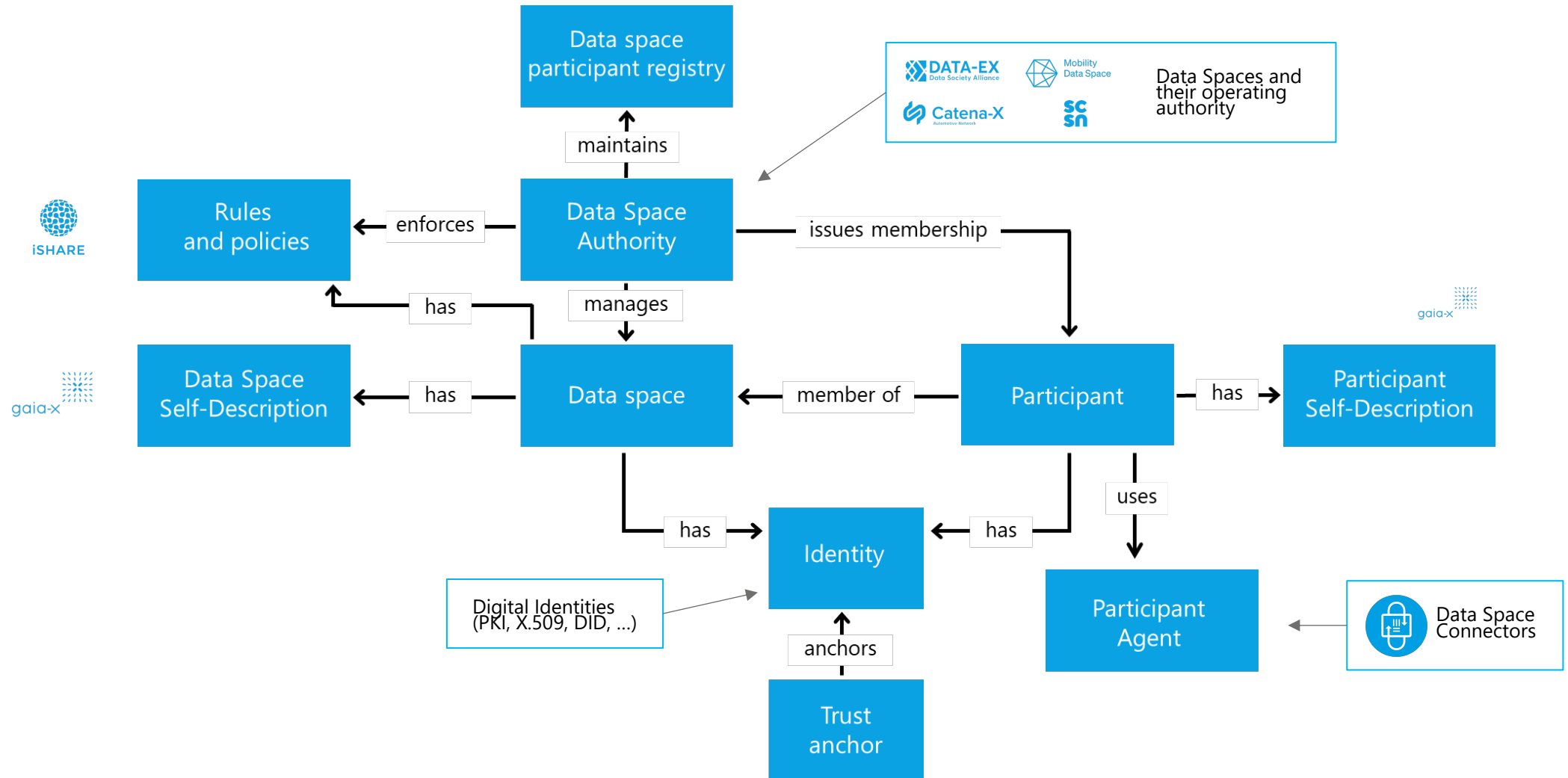


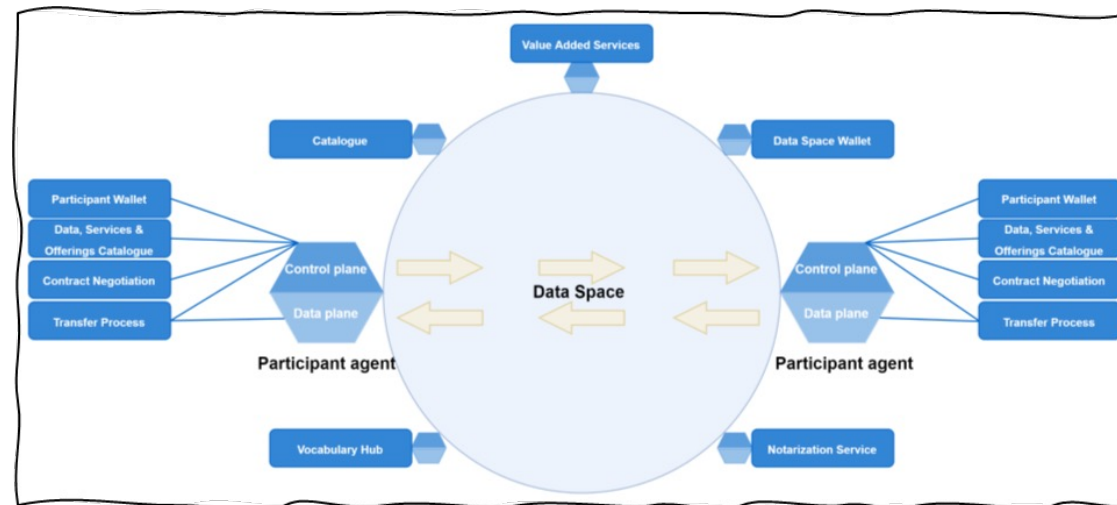
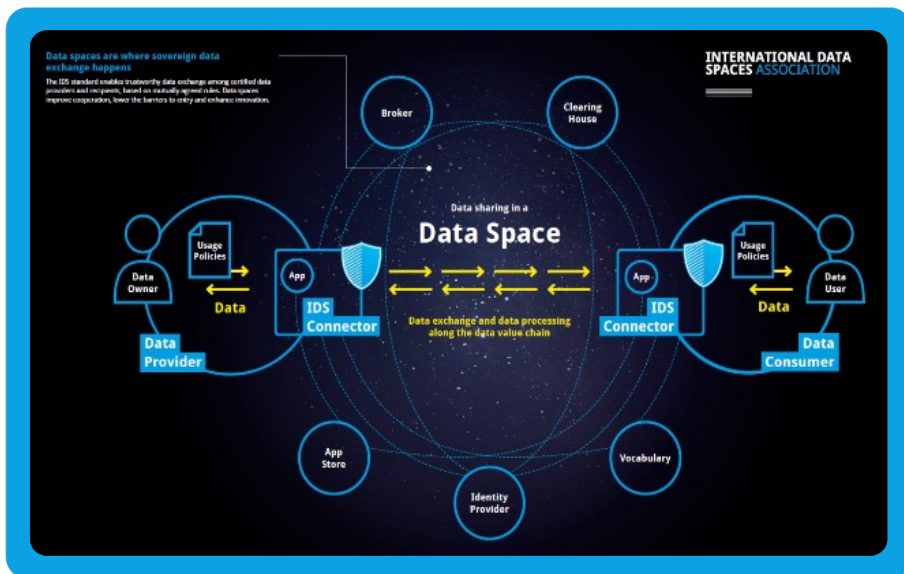
- » **Connects participants in a data space** – to share, utilize, benefit from data.
- » Ensures **trust through IDS Certification** and **cyber security** assessment.
- » Connects to **trust frameworks** and **identity management**
- » Includes **identity & policy management**, ensures **data usage control**.
- » Guarantees **interoperability**.
- » Understands and enforces **data usage policies**.
- » **Master** for other connectors of diverse feature sets.



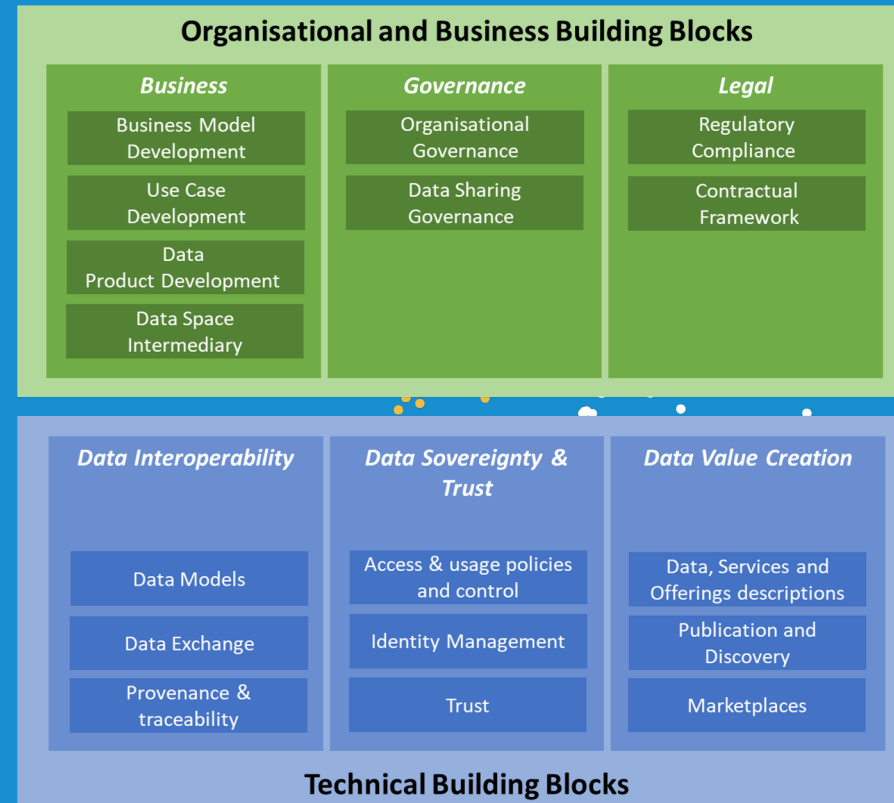
IDSA Rulebook - Organizational Interoperability needs to be organized

We play an ecosystem game





DSSC Building Blocks...



...need to be viewed in different dimensions

Governance Plane

- Regulatory, Domain, Ecosystem

Technology Specification Plane

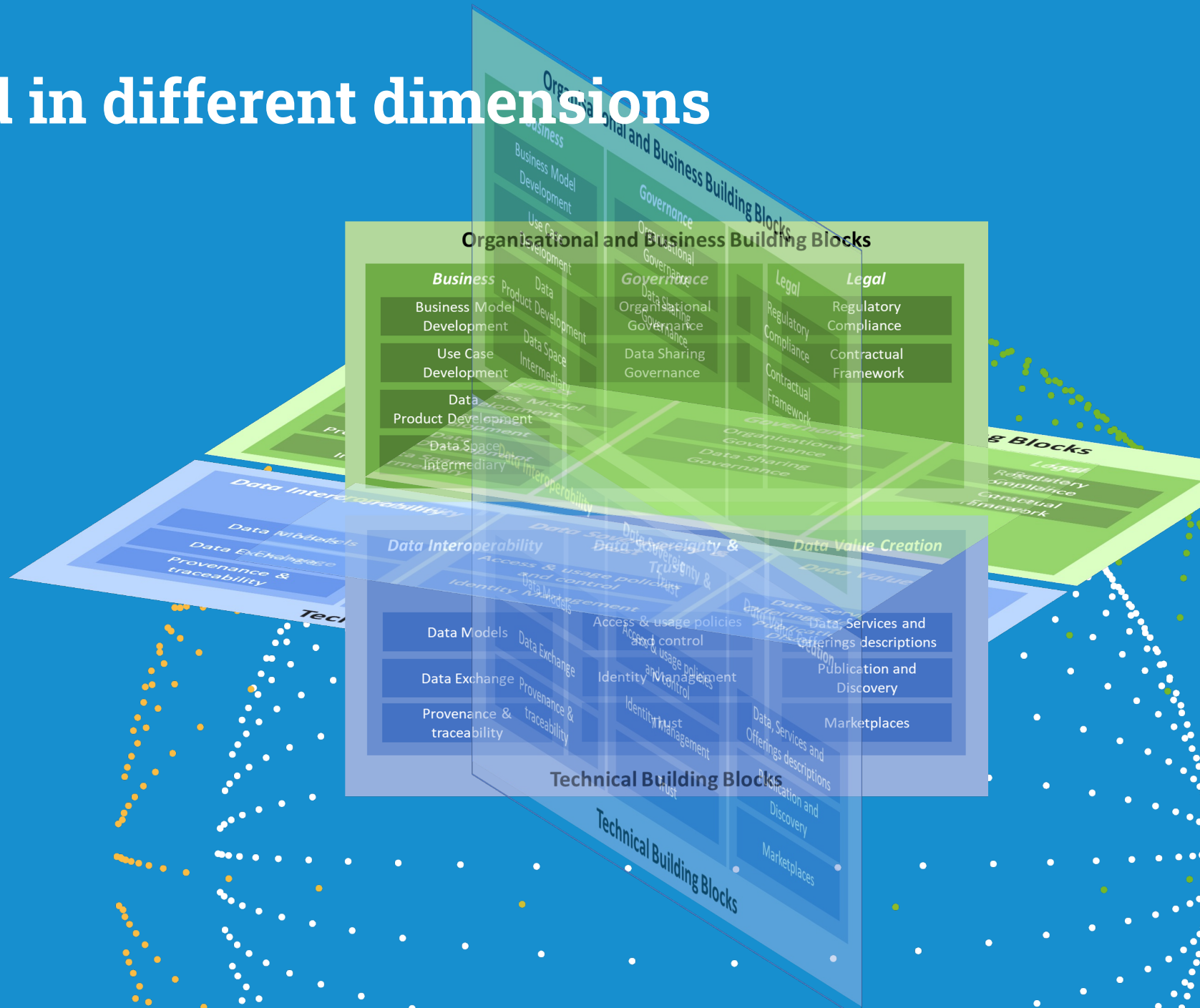
- Distributed Model
- Description Models
- Trust & Identities
- Publication & Discovery
- Policies

Software & Services Plane

- OSS Community projects
- Commercial software
- Software Services
- Platforms

Commercialization Plane

- Operationalization
- Data & Service Platforms
- Marketplaces
- Billing

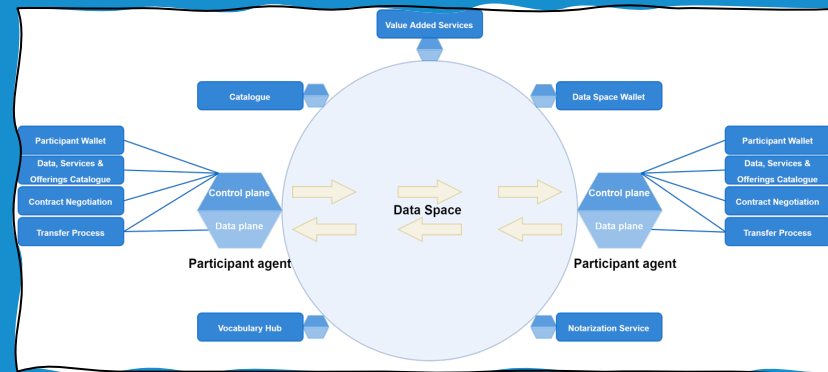


What's new? 1.0

Functional overview of software components



Participant Agent



Shared Services

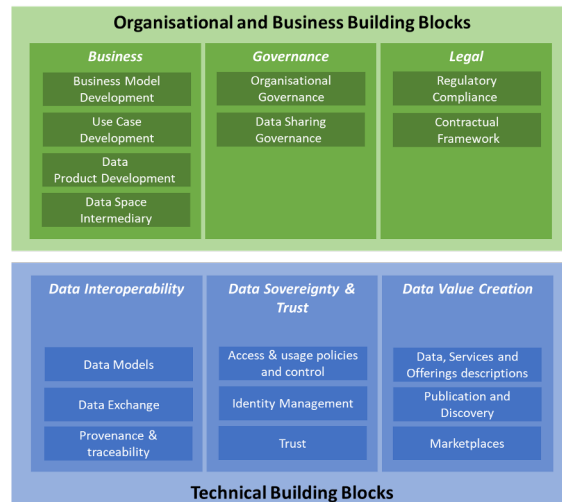
- ✓ Control plane vs. Data plane
- ✓ Participant Wallet
- ✓ Data, Services & Offerings Catalogue
- ✓ Contract Negotiation
- ✓ Transfer Process

- ✓ Data Space Wallet (participants registry)
- ✓ Catalogue
- ✓ Vocabulary Hub
- ✓ Notarization Service
- ✓ Value Added Services

Simpl, isn't it? ;-)

Technical Convergence for data spaces

Release of the common work – ongoing convergence



Some examples:

- **Dataspace protocol** as baseline for any Data Exchange Services
- Authentication Services → **connect to the Gaia-X Trust Framework** and **register policies in iShare satellites**
- Catalogue → Usage of **DCAT and ODRL**, working towards a common Self Description
- Contracting → Adoption of **IDS Contract Negotiation Sequence** in Gaia-X
- Roll-out **Gaia-X compliant IDSA certified dataspace connectors** and integrate this in **Gaia-X labelling scheme and PRD**
- Build **dataspace connectors based on FIWARE** components
- Include **FIWARE data models in IDSA information model**
- Use **Gaia-X VCs for identification in IDS dataspace connectors**
- Connect and fuel **data marketplaces and AI services** via the same mechanisms
- Build **software and services** (preferably OSS) to make all of this happen
- ...and much more harmonization going on

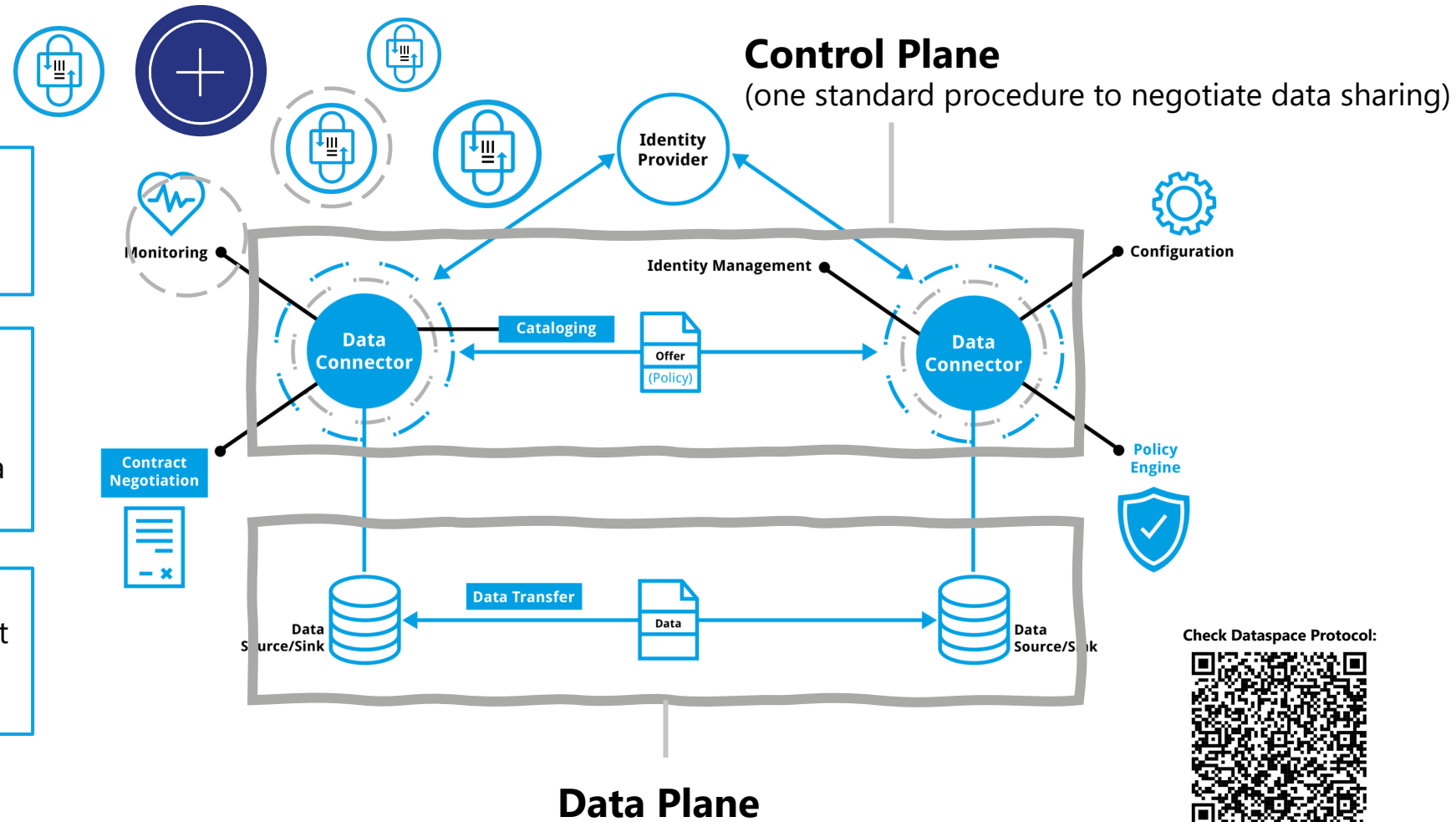
Dataspace Protocol V1.0 → ISO Standard

Enables standardized data exchange across different data space instances.

Ensures standardized data exchange mechanism between different frameworks, products, or services.

Provides the needed schemas and protocols for cataloging data, negotiating contracts and usage agreements, and accessing data within a data space.

Organizations using this protocol can align with industry standards, foster best practices, and unlock new data-driven business models and opportunities.



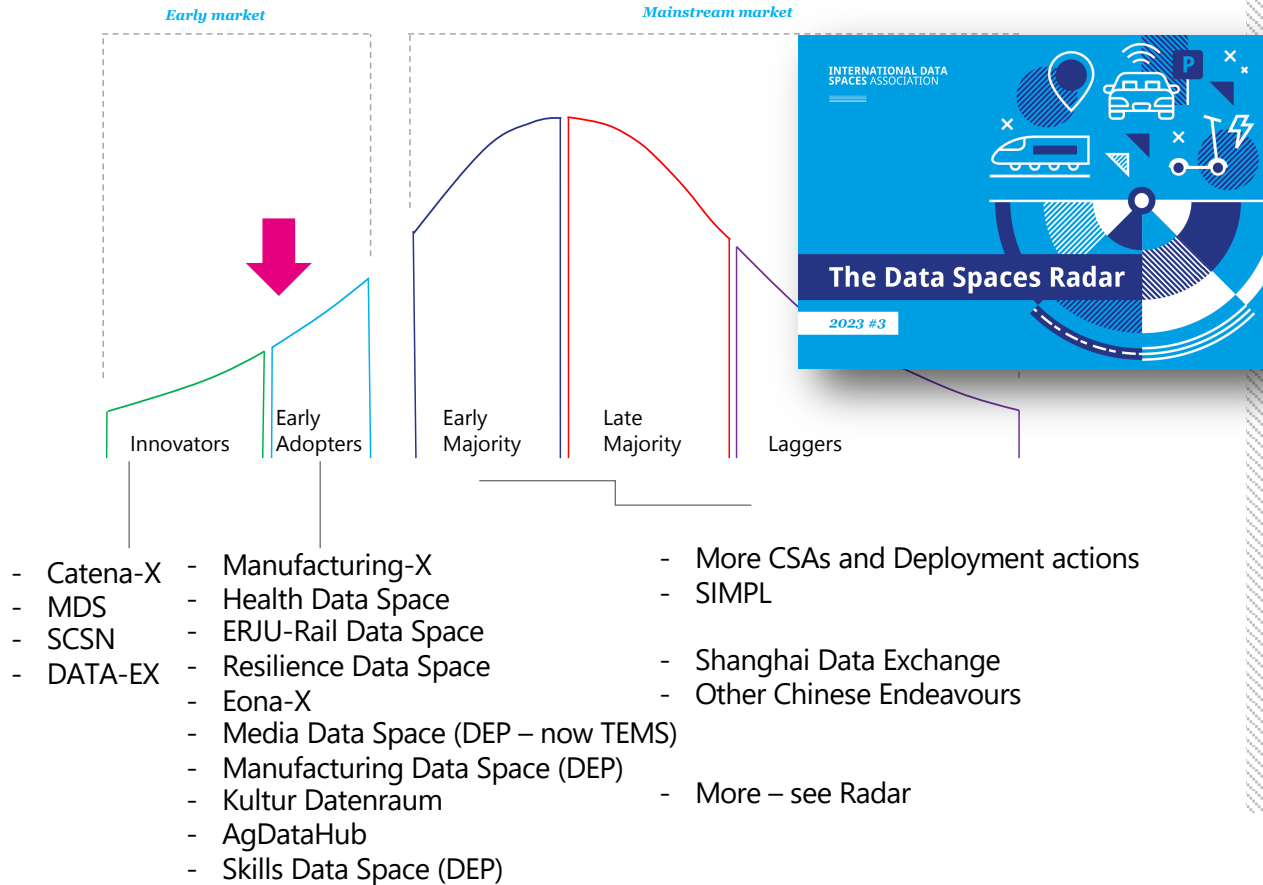
Check Dataspace Protocol:



(several possible for different data sharing scenarios: confidential data sharing, streaming data, event based data, edge devices, ...)

Data Spaces are popping up and maturing

Data spaces in multiple sector use IDS principles as blueprint



Latest entries from the radar:

- UdL Research Data Space - open research platform
- INESData Incubator
- datahub.tirol
- energy data-X - German energy industry
- Potato-X - agriculture data space
- Automotive Data Marketplace - Atos et al.
- Milk Industry Data Space - knowlEdge Project
- Rail Data Space

[Click here to take a look inside!](#)

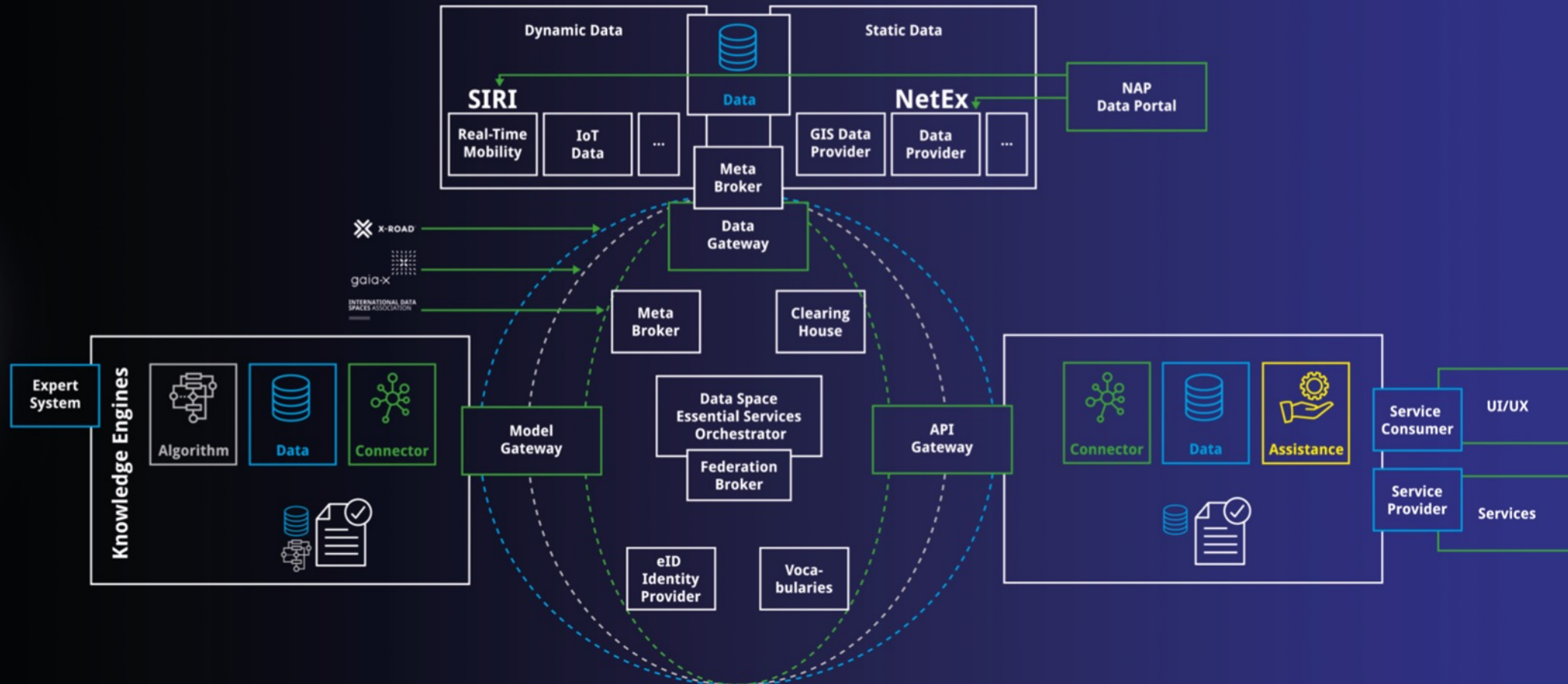
#DataSpacesTuesday

Topology overview of Mobility Data Spaces



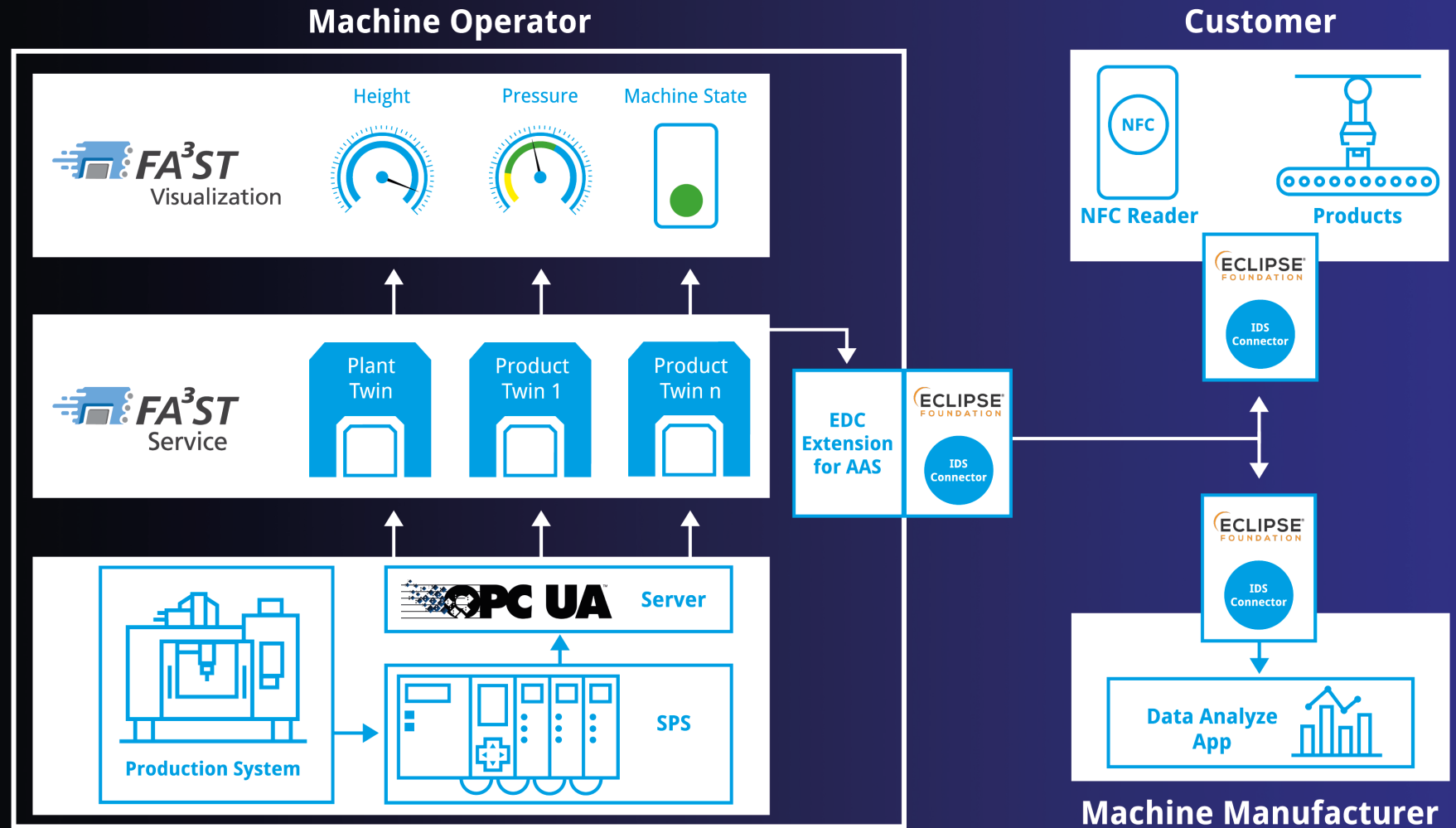
Mobility
Data Space

INTERNATIONAL DATA
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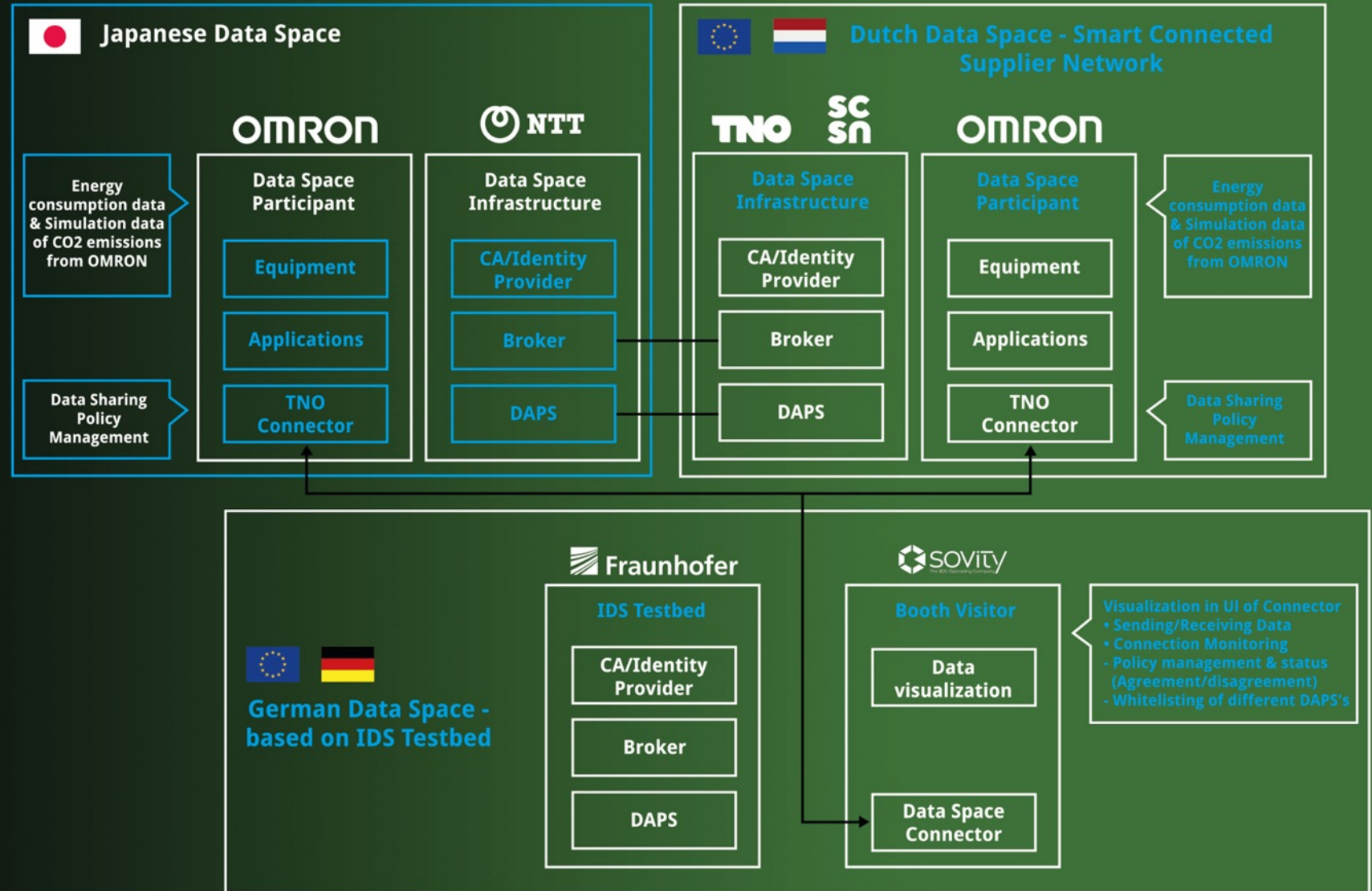
#DataSpacesTuesday

FA³ST ecosystem for I4.0-compliant and data-sovereign digital twins by Fraunhofer IOSB



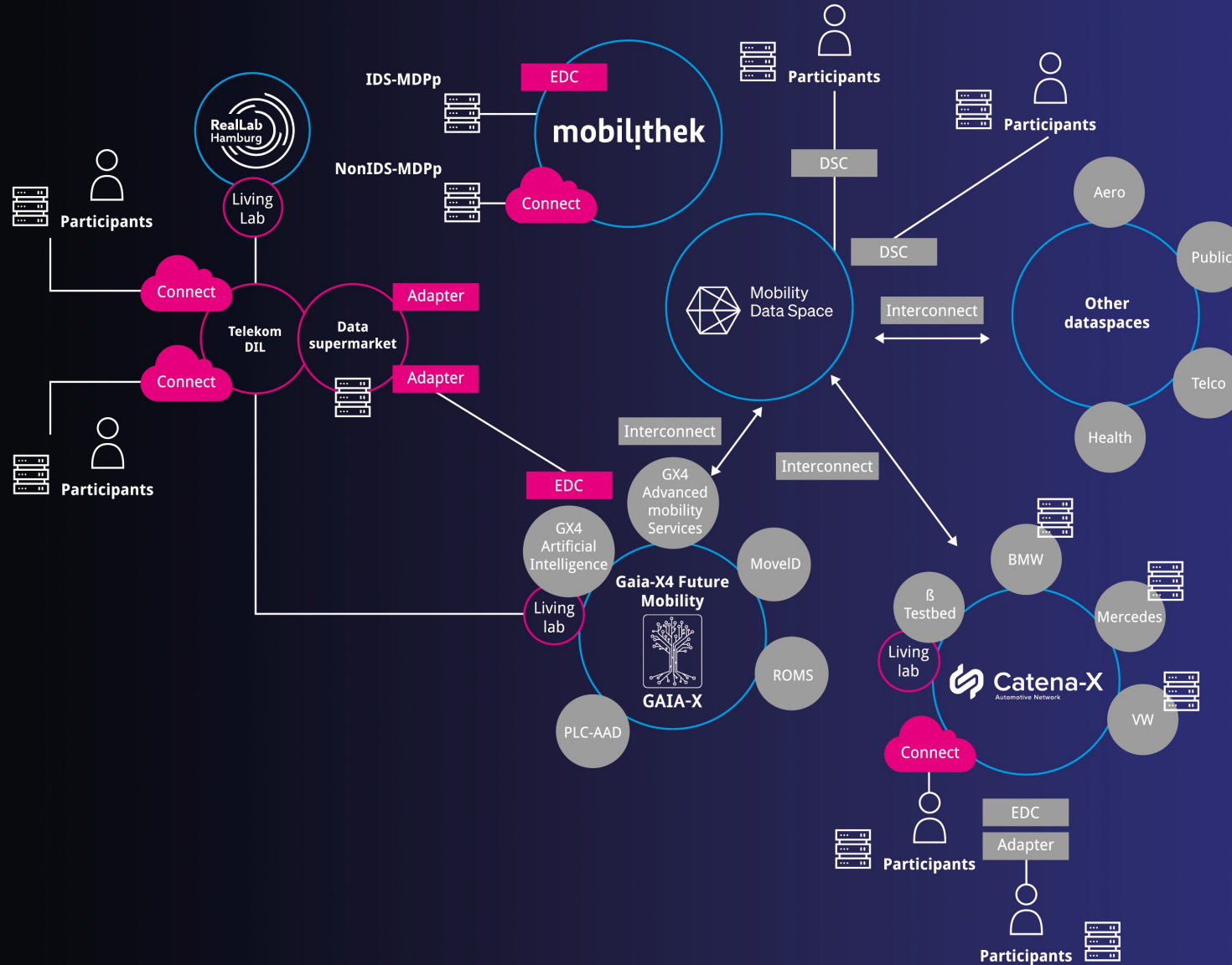
#DataSpacesTuesday

Interconnected Data Spaces



#DataSpacesTuesday

Mesh data spaces for automotive triple



Join the data spaces pioneers

Become a member of IDSA



Download the [membership application](#) form.

Send the filled form to our [email](#).

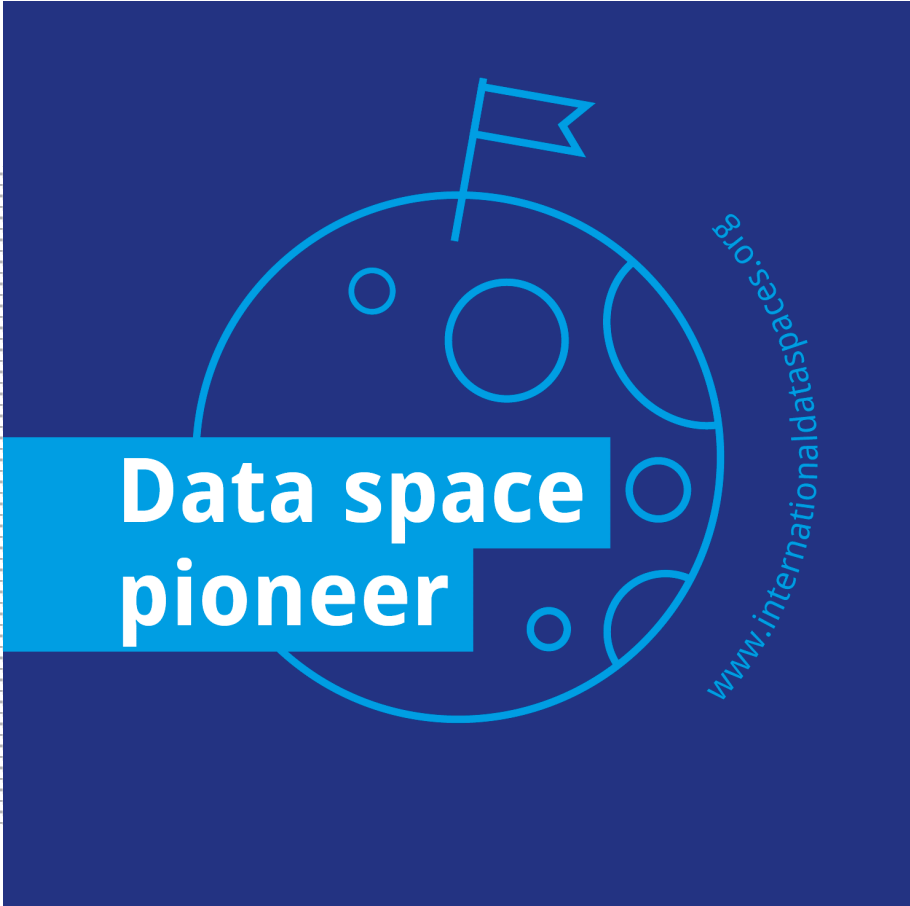
Welcome aboard!
We will personally guide you through your onboarding.

01

02

03

Name, Date



» We all believe in data spaces as enabler for our future wealth.



Lars Nagel

CEO



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[Lars Nagel](#)

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John Blankendaal

Managing Director

Brainport Industries, The Netherlands

Smart Connected Supplier Network (ScSn)



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Brainport Industries

John Blankendaal
Managing Director

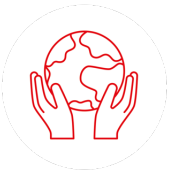


Brainport
Industries

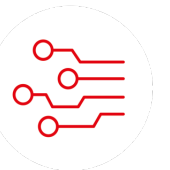
5 Priority themes



1. COOPERATE IN INTERNATIONAL PRODUCTION NETWORKS



2. SOCIAL TRANSITIONS AND SUSTAINABILITY



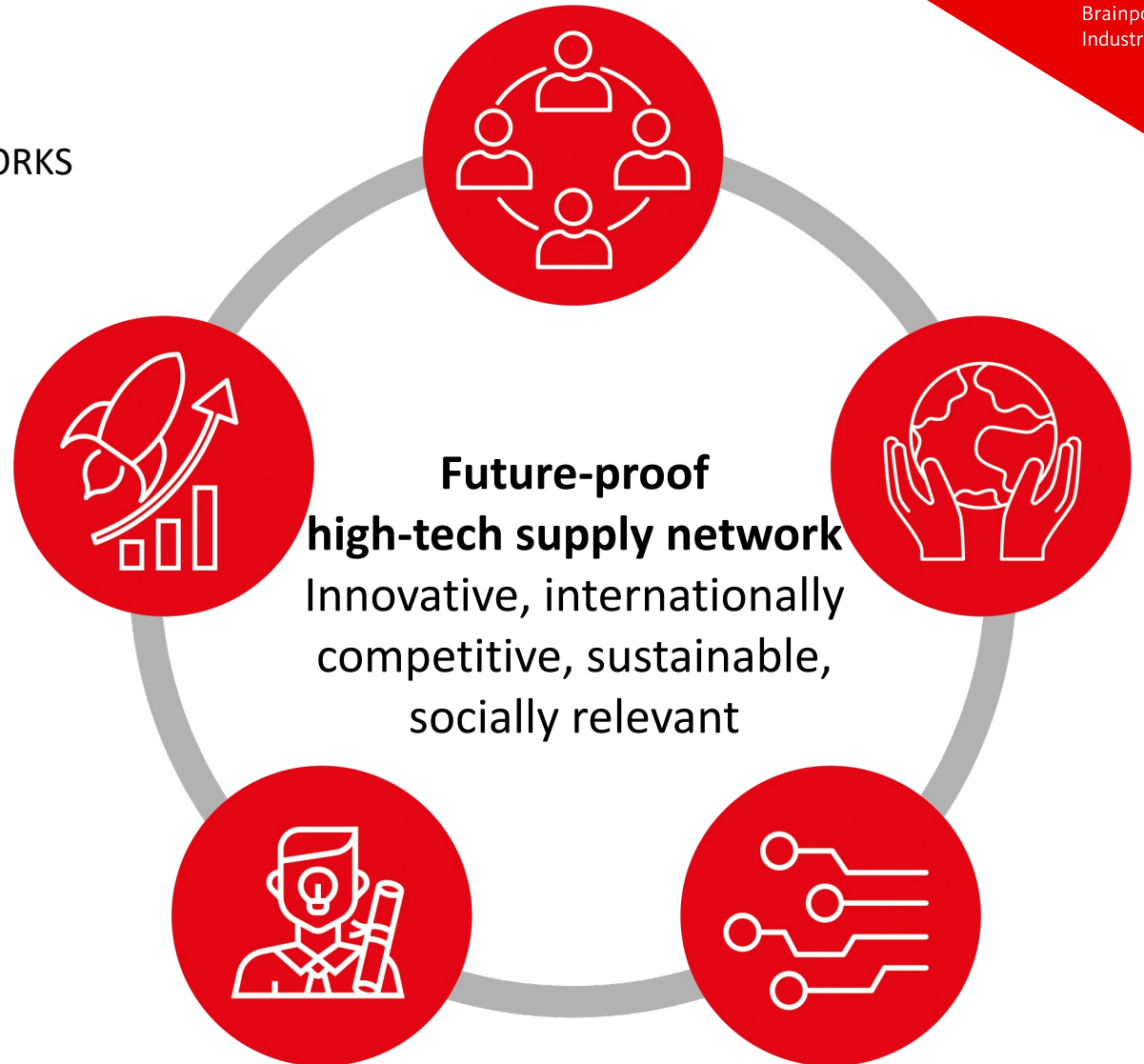
3. DIGITISATION AND PRODUCTION TECHNOLOGY



4. HUMAN CAPITAL



5. ACCESS TO GROWTH AND WORKING CAPITAL



125 Members – February 2024



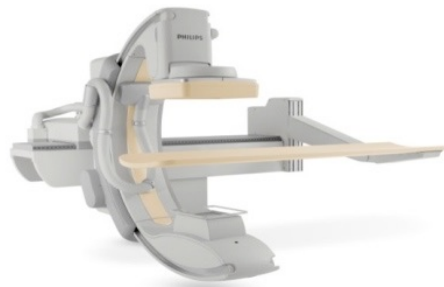
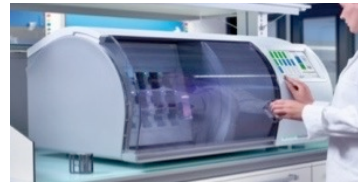
Market focus of Brainport Industries

High mix – low volume – high complexity

Semicon



Medical



Analytical



Printing

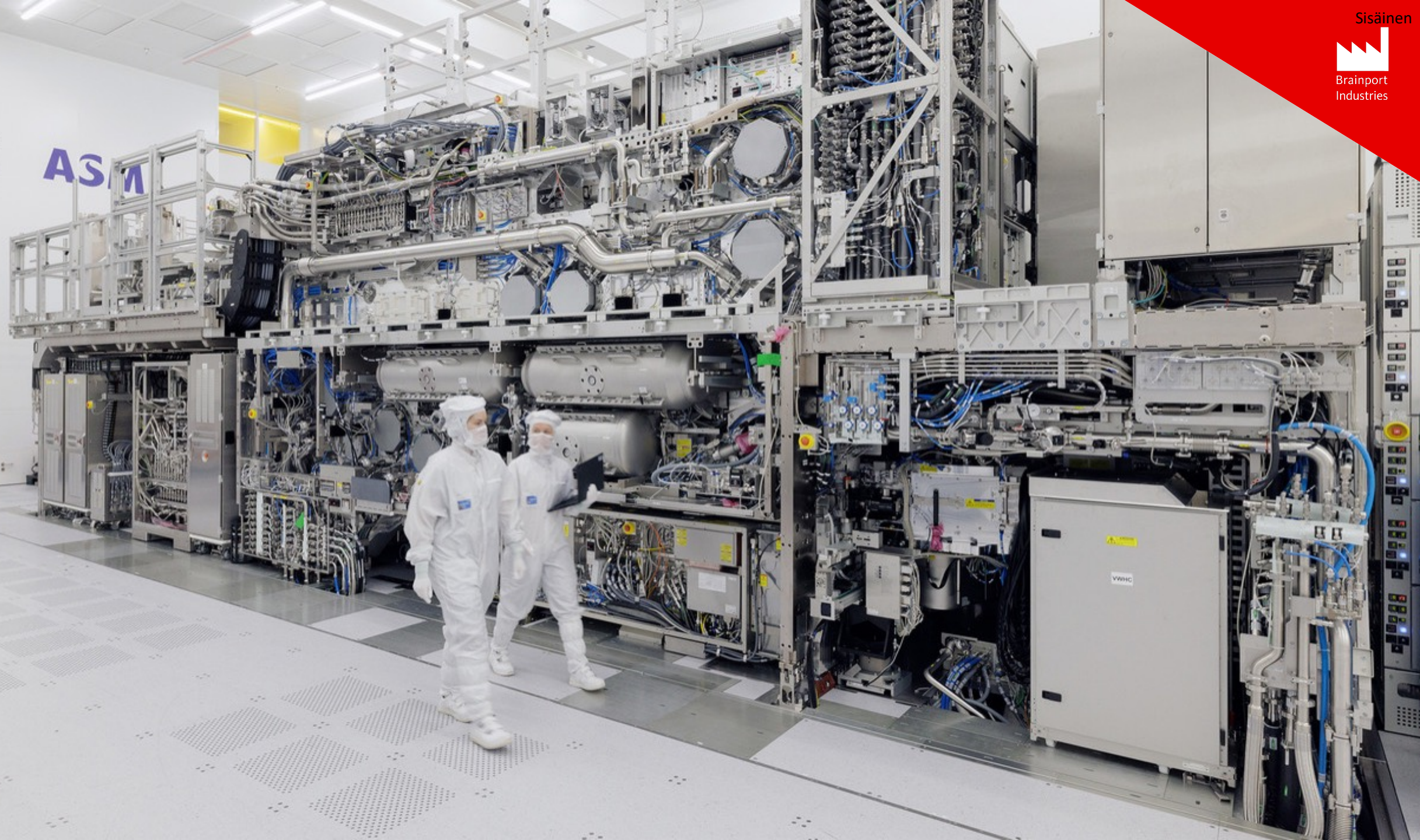


Energy

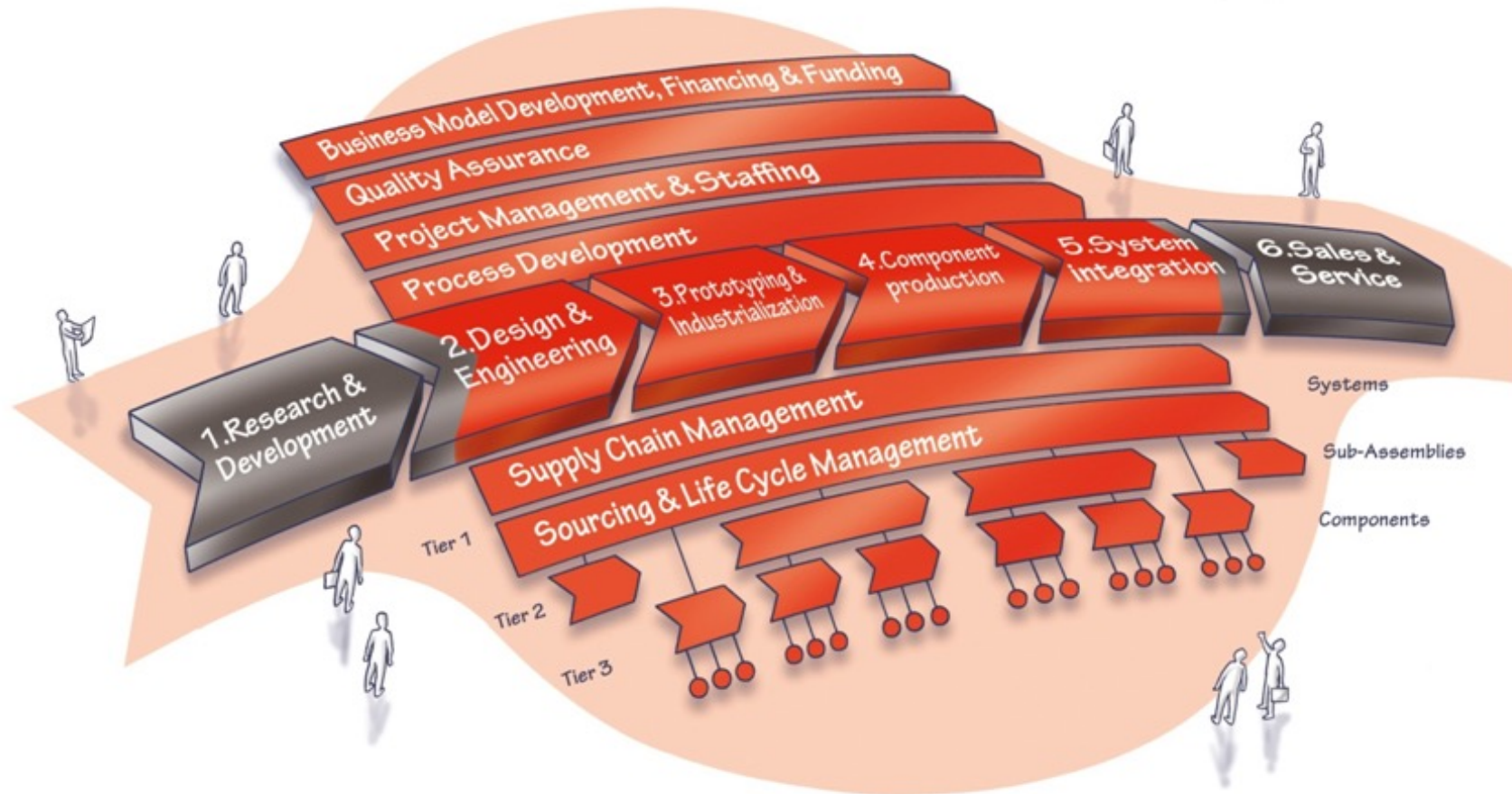


ec

ASIM



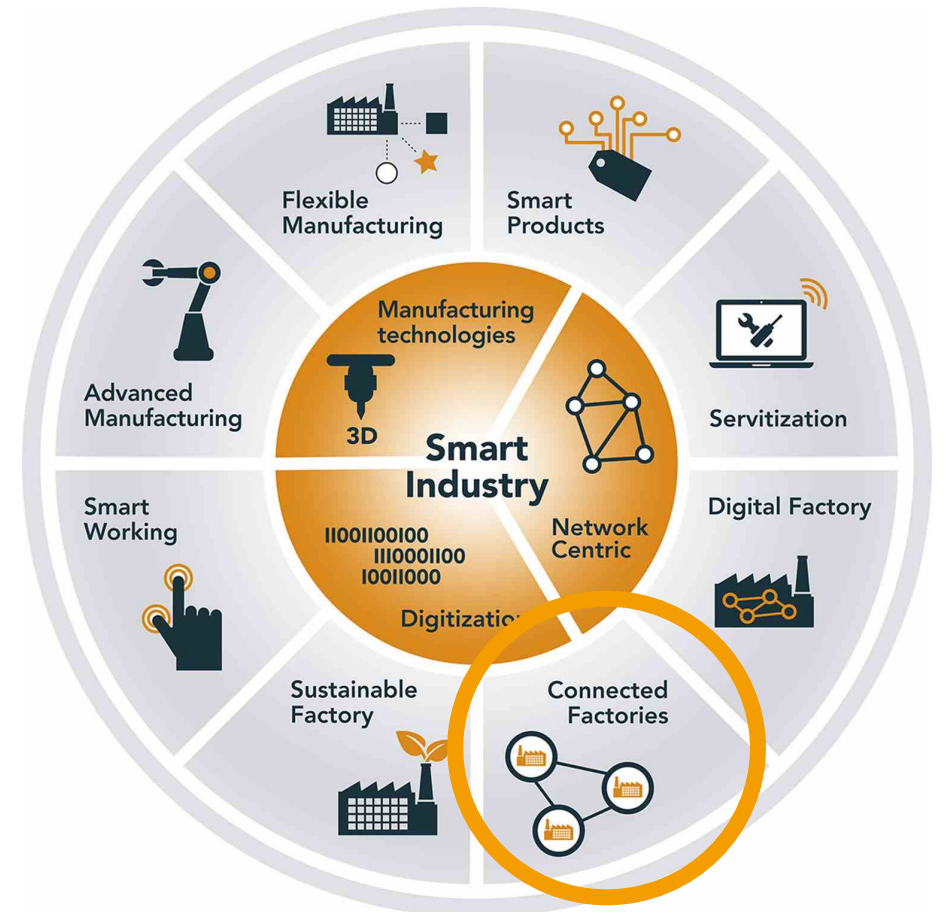
Brainport Industries' Open Supply Network



Connected Factories

Data sharing in the manufacturing industry

- Connected Factories is one of the 8 Smart Industry transformations.
- Safe and securely data sharing in the manufacturing supply chain is the main focus
- The **Smart Connected Supplier Network** aims to achieve this.



Connected Factories

- It becomes increasingly important to collaborate in the supply chain
- Especially for the low volume, high mix, high complexity industry
- Sharing data is crucial!

Problem: different systems, standards, and semantics...



Cause: manual error-prone administrative work, inefficiency, slower time-to-market ...

Our aim: build the world's smartest network of high-tech suppliers – driven by data

- **Improved efficiency**
 - Reducing the administrative burden
- **Increased resiliency**
 - Reducing errors
 - Provide the necessary visibility on potential bottlenecks
- **Improved agility**
 - Reducing the time-to-market: respond faster to changes
 - Reducing the time-to-money

SC
SN smart
connected
supplier
network

Currently consisting of +/- 300
manufacturing companies
active in high-tech supply networks

Virtually integrated network of
specialized independent companies

One-stop-shop for high-tech OEMs

How does it work?



Service Providers:

- Digital platforms, interconnected using IDS
- Independent 'address book' for routing communication
- Several providers. Choose the most suitable for your business



Manufacturing companies:

- One-time integration with own ERP system
- Registration in the SCSN address book



ERP systems:

- A manufacturing company can choose their preferred ERP system.



Manufacturing data space

The infrastructure is based on the **International Data Spaces Reference Architecture Model 3.0 (IDS-RAM3)** and adopts the **four-corner model**.

The **Foundation SCSN** facilitates generic functionality:

- **Address Book** based on the IDS Broker and Parls in order to publish and find the connected manufacturing companies.
- **Identity Manager** and **DAPS** in order to ensure trusted identities of all participants.

The **Service Providers** facilitate end-user connectivity:

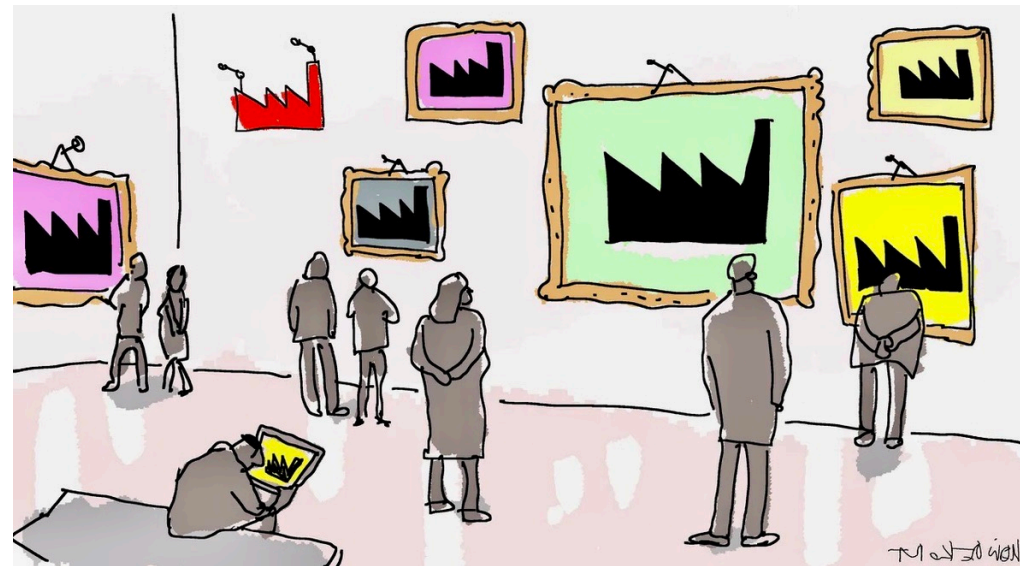
- Each service provider has a **Hybrid IDS Connector** to interconnect the end-users.
- The service providers **integrate the connector** with the end-users' IT systems such as ERP systems.



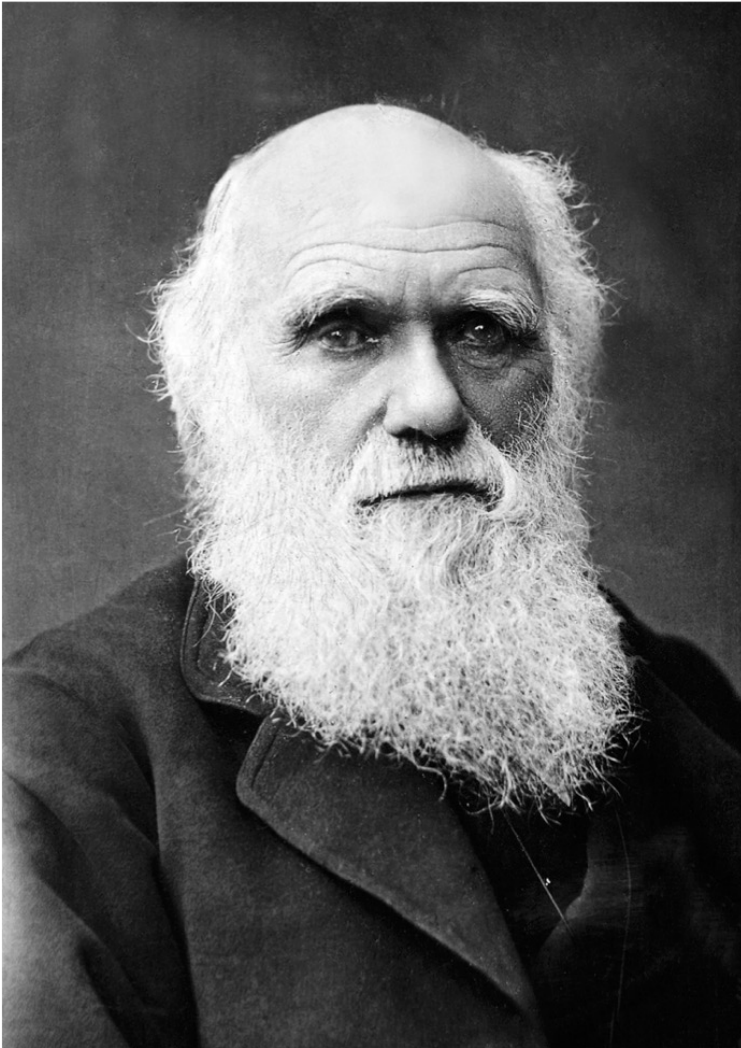
Open supply network – Take Aways

The overall competitiveness of individual companies, OEMs and suppliers, is highly driven by the performance of the entire value chain and network.

To remain competitive in a strong international playing field, collaboration for the high-tech manufacturing industry is essential.



Charles Darwin



It is not the strongest nor the most intelligent of the species that survives but the one that is the most adaptable to change.

Thank you for your attention



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Sébastien Picardat

CEO

Agdatahub France


Agdatahub



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 snowflake®

Les solutions au service de vos usages des data agricoles



DATA INTERMEDIATION IN AGRIFOOD INDUSTRY

Nordic Data Festival – Apri 2024



10 MILLIONS FARMS TO INTERCONNECT WITH 500 000 PARTNERS IN EU

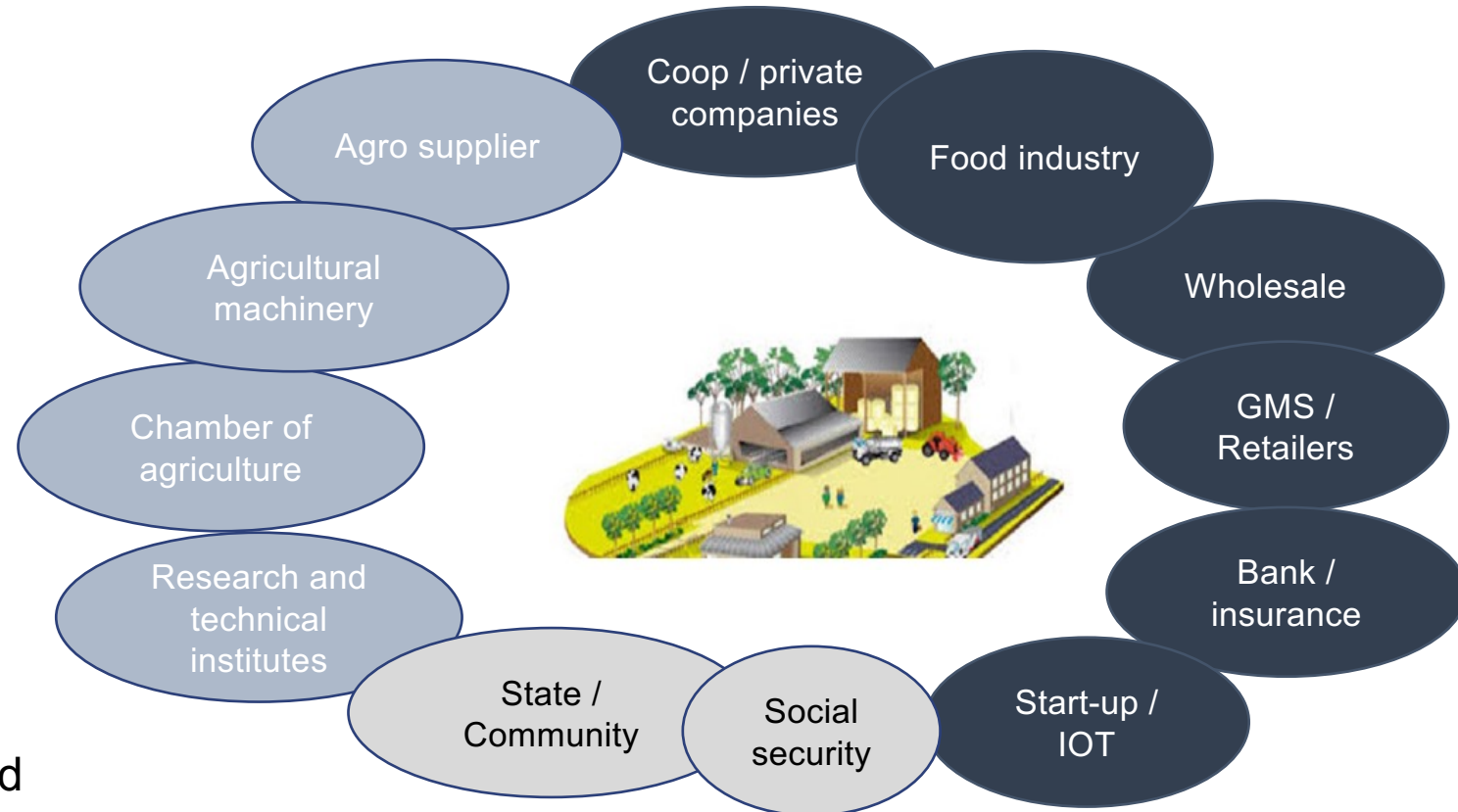
Data maturity of this sector

A very large amount of heterogeneous, competing, non-interconnected and sometimes inaccessible data, scattered among the partners of the farms



Commun Agricultural Policy

- Provide food to EU consumers and third countries in quantity and quality
- Minimize the impacts of agricultural practices



SOME USE CASES OPERATING ON OUR PLATFORM

ENVIRONNEMENTAL LABELLING



SUSTAINABILITY / CARBONPRINT



FRANCE CARBON AGRI ASSOCIATION



ELECTRONIC PESTICIDES REGISTRAR



agreste



La statistique, l'évaluation et la prospective du ministère de l'Agriculture et de la Souveraineté alimentaire



FARMING MACHINERY



Pesticides reduction with precision spreading

AI FOR LOGISTIC



ANMAL SEEDS GENETIC



AGDATAHUB ACTIVITY IS EU COMPLIANT BY DESIGN



Candidate to be an EU-recognized data intermediation services provider



EU Recognised Data Intermediary

SOVEREIGN

French solution guaranteeing **data security and confidentiality**, subject to **European and national regulations**



NEUTRAL

Supported by **some thirty** representative **agricultural players**, Agdatahub is **not** directly **involved** in data processing, and will operate under the regulation of ARCEP.



COMPLIANT

Technological platform in **line with the rules of the single data market** defined by the **new European regulations** (DGA, DA)



RECOGNIZED

Agdatahub is the coordinator of the **AgriDataSpace Consortium** and a **Gaia-X** day-One member



ADAPTED

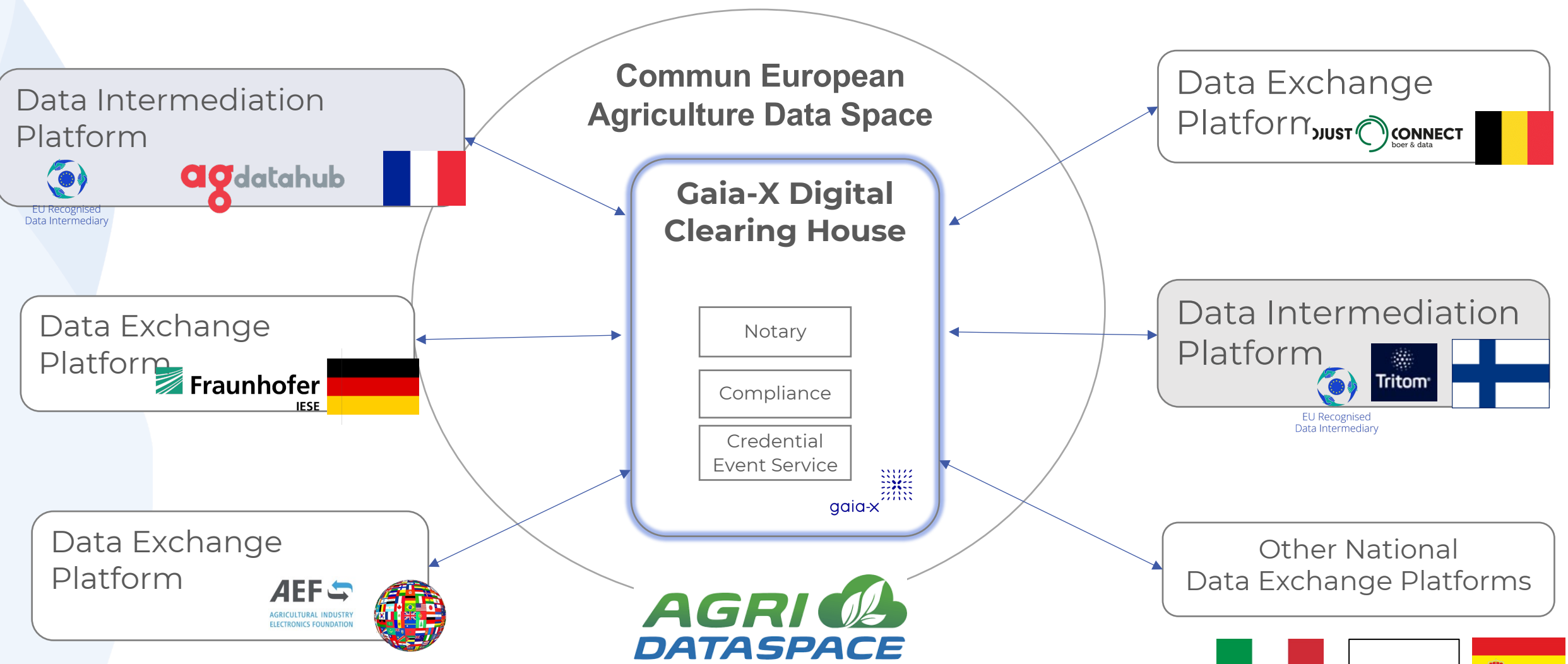
Solution based on proven partner technologies, **adapted for agricultural and agri-food markets**.



AGDATAHUB SUCCEEDS IN FEDERATING THE AGRITECH ECOSYSTEM



TOWARDS THE COMMUN EUROPEAN AGRICULTURE DATASPACE



○ Sébastien PICARDAT
CEO
sebastien.picardat@agdatahub.eu



Agdatahub 9 Avenue George V, 75008 Paris - agdatahub.eu - +33 (0)1 87 16 41 66

Les solutions au service de vos usages des data agricoles



**THANK YOU FOR
YOUR
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Tuomo Tuikka

Lead of Data Space Solutions
VTT

Announcing Data Spaces Innovation Lab launch by VTT

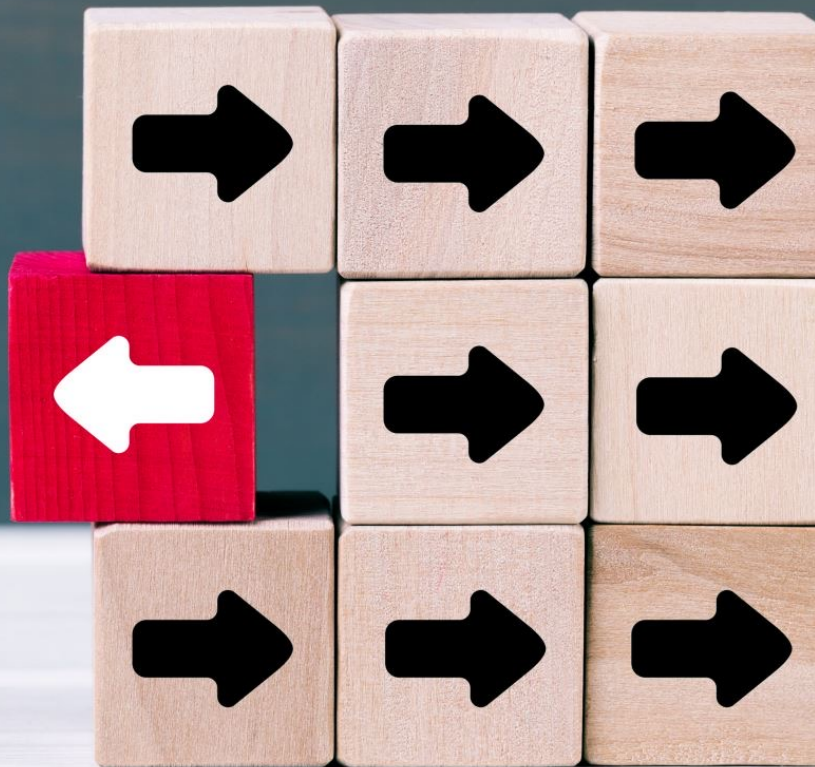


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Data Spaces Innovation Lab



Data economy enabled by Data Spaces

VTT's Data Spaces Innovation Lab (DSIL)

BENEFITS OF DATA SPACES

D ata
S paces
I nnovation
L ab



Cross sectoral flow of data

Data spaces enable the integration of data across sectoral, organizational and geographical boundaries. They are key for innovative data enabled processes, products, and services.

High security and trust

Data spaces are federated data ecosystems where trusted partners apply the same high standards and rules to the storage and sharing of data.

Self-determined control of your data use

Organizations and individuals have self-determined control of the use of their data (data sovereignty) as they grant the access and usage rights to the data they generate.

Compliance for European data markets

By utilizing data space, one can assure that the data sharing is compliant with current and future European standards, policies and rules, which support data business scale up.

Data Space Support Centre

DSSC.EU

Data Spaces Support Centre

How can we help you?

- The virtual organization and EU-funded project which supports the deployment of common European data spaces and promotes the reuse of data across sectors
- Started October 2022, lasts 3.5 years

About Support Knowledge Base

Circular economy in manufacturing

DaCapo

Partners - 10 countries • 5.99M • 42 months

Digital assets and tools for circular value chains and manufacturing products

Value Chain



Data Market

DataMust

Data markets for sustainable cities
Nokia Engine project 2023-2025

Collaboration partners
City of Espoo
City of Las Rozas
Sacyr Group S.A.

Financed by the European Union - Horizon Europe

Trust technology

TANGO

Digital Technology for Secure and Trustworthy Data Flows

Mobility data space

Towards a common European mobility data space (EMDS)

deployEMDS

DISCOVER MORE

Agriculture

FLEXIGROBOTS

Flexible robots for intelligent automation of precision agriculture operations

FlexiGrobots is an Innovation Action aiming to build a platform for flexible heterogeneous multi-robot systems for intelligent automation of precision agriculture operations, providing multiple benefits to farmers around the world.

Join us on this 36-months journey where also the FlexiGrobots Platform will be validated on three pilots: winegrapes, rapeseeds, and blueberries

Manufacturing



Manufacturing

Reservist

Aim, concept, objectives, results.

Energy

Use case library

based on 40+ projects



Data Spaces Innovation Lab

Our services cover the critical aspects of data spaces development

Expert support

VTT's leading technology, application and business experts are at your service through innovation lab. In addition, the innovation lab offers concrete connection to European networks, pilot cases and experts.

Data space innovation infra

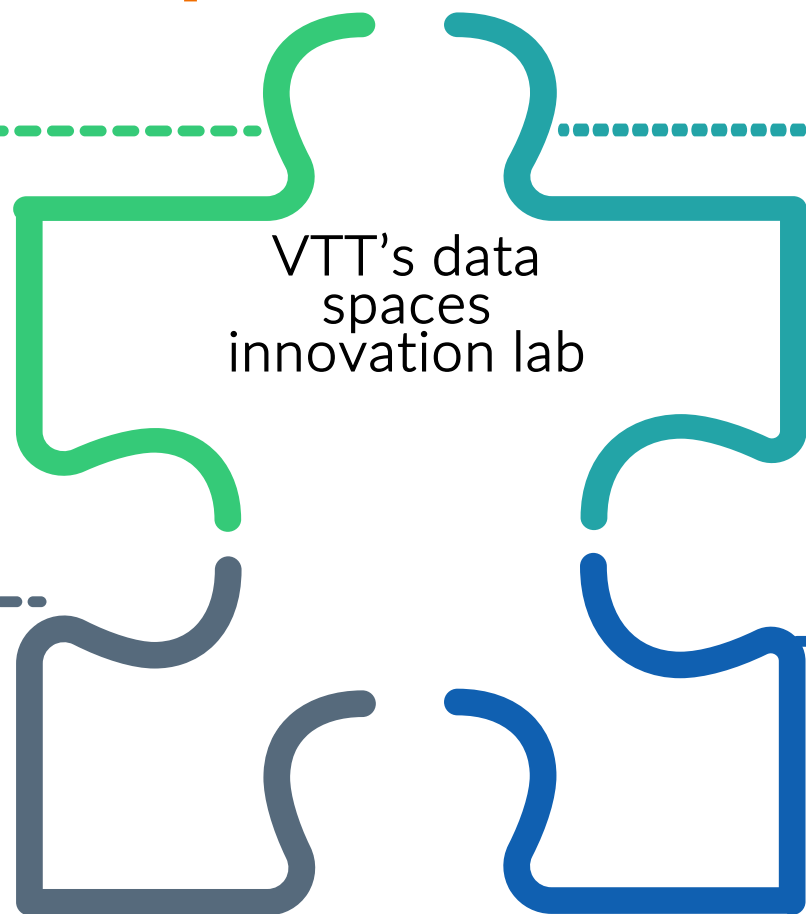
VTT's data space connectors received its certificate 2nd in the world. The connector and other pilot infrastructures are continuously developed in various Horizon Europe and other projects to offer you the latest solutions in data spaces.

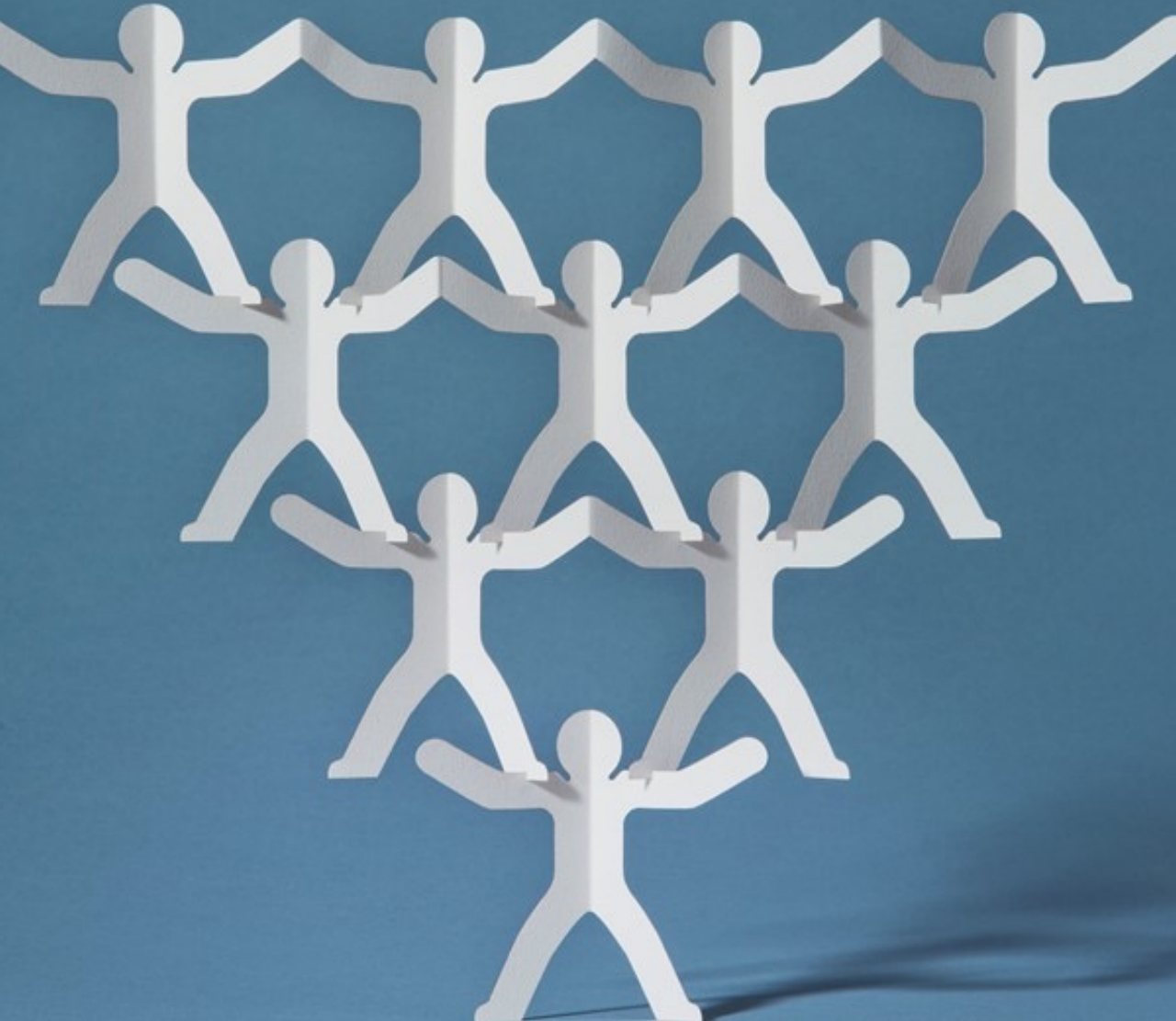
Use case library

Innovation lab offers access to the most recent use cases. Use case library enables concrete understanding of how data spaces are applied in real environments.

Project services

The Innovation lab offers access to VTT has a wide R&D project services, through which we can help you to accelerate your development. We can help you to develop own connector, data space or to join existing ones.



**VTT**

At the networking table you will find VTT people and demonstrations of data spaces

Hannu Tanner
Antti Kojola
Heidi Korhonen
Ilkka Niskanen

Tuomo Tuikka

Antti Kojola

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Teemu Toivonen

Senior Sales Specialist

Data and AI at Microsoft

SITRA

VTT

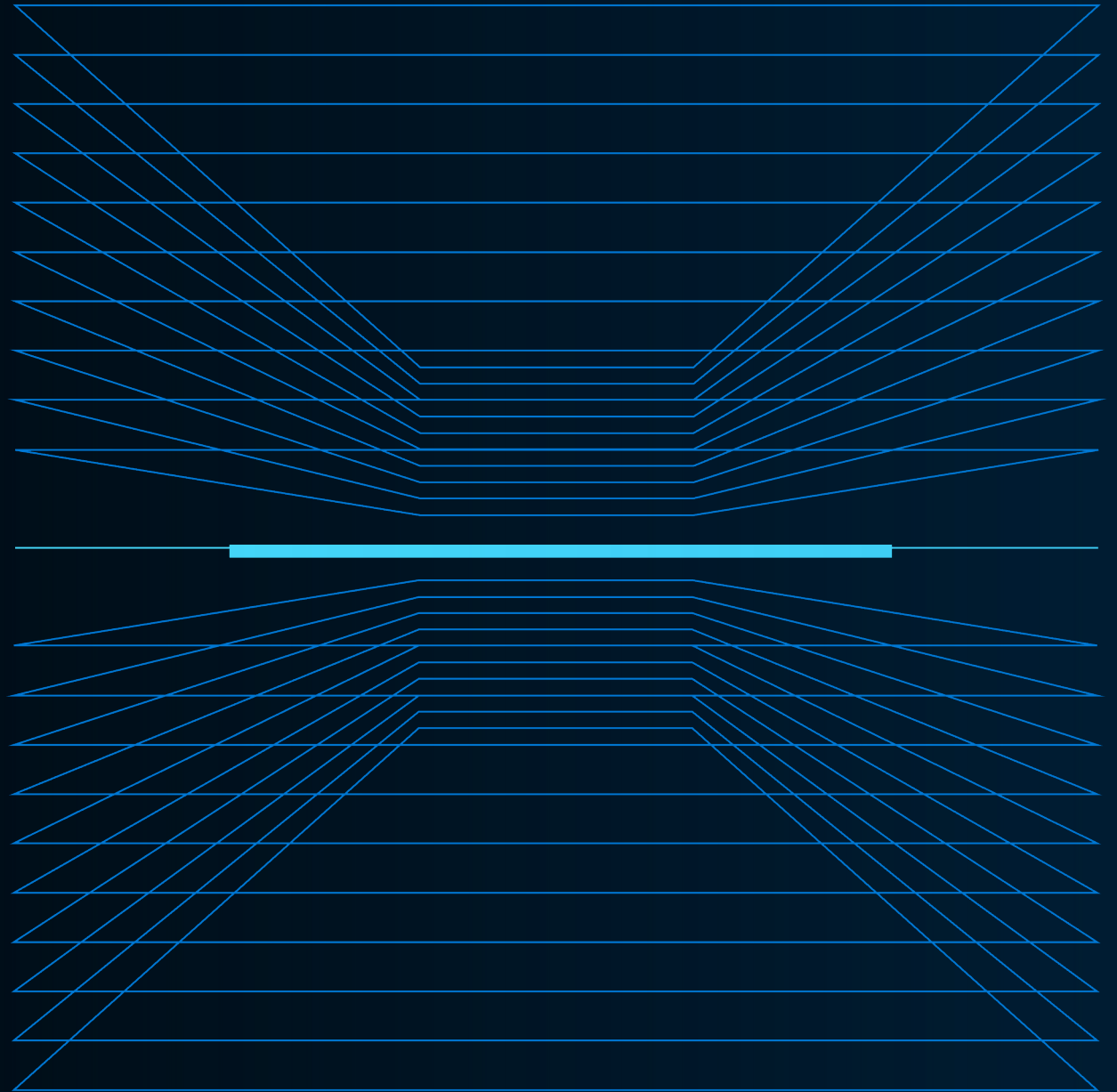
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 snowflake®



Data ecosystems supporting AI development

Teemu Toivonen
Data & AI



| Agenda

AI is here

Benefits of data ecosystems for AI

Challenges and learnings

Technology enabling Data Ecosystems

0

AI is here

The AI technology is here

Forbes

What ChatGPT And
Generative AI Mean
For Your Business?

COMPUTERWORLD

Microsoft's new Teams Premium tier
integrates with OpenAI's GPT-3.5

MARKETS
INSIDER

Nuance and Microsoft Announce the First Fully
AI-Automated Clinical Documentation
Application for Healthcare

VentureBeat

Microsoft gives
Businesses a GPT boost
In Teams and Viva Sales

TheVerge

ChatGPT is now available in
Microsoft's Azure OpenAI service

USA TODAY

New Bing with ChatGPT brings the
power of AI to Microsoft's
signature search engine

VentureBeat

Microsoft announces generative AI-powered
Copilot 365 to 'change work as we know it'

CNN BUSINESS.

Real estate agents say they
can't imagine working without
ChatGPT now

TC TechCrunch

Microsoft brings an AI-powered
Copilot to its business app suite

The economic potential of generative AI

The next productivity frontier

June 2023



Authors

Michael Chui
Eric Hazan
Roger Roberts
Alex Singla
Kate Smaje
Alex Sukharevsky
Lareina Yee
Rodney Zimmel

- Generative AI's impact on productivity could add up to **\$4.4 trillion annually** in value to the global economy.
- About 75% of the value that generative AI use cases could deliver falls across **customer operations, marketing, sales, software engineering, and R&D**.
- Generative AI can revolutionize work by automating a significant portion of employees' activities, **up to 60-70% of their current workload**. This augmentation of individual capabilities has the potential to transform the way we work.
- Generative AI is expected to have **\$ 60-110 billions economic impact on Pharmaceuticals and medical products**, accounting for 3-5% of total industry revenue.

For every \$1 a company invests in AI,
it is realizing an average return of

\$3.5

14 months

Average time it takes for organizations to
realize a return on their AI investment

Data is the
fuel for AI



1

Benefits Of Data Ecosystems

I Types of data ecosystems

Data utilities

These **aggregate data sets** and provide value-adding tools to businesses. Examples include credit bureaus and **consumer-insights firms**.

End-to-end cross-sectorial platforms

These **integrate partner activities and data**, offering end-to-end services through a single platform. Examples include car reselling and **partnership networks**.

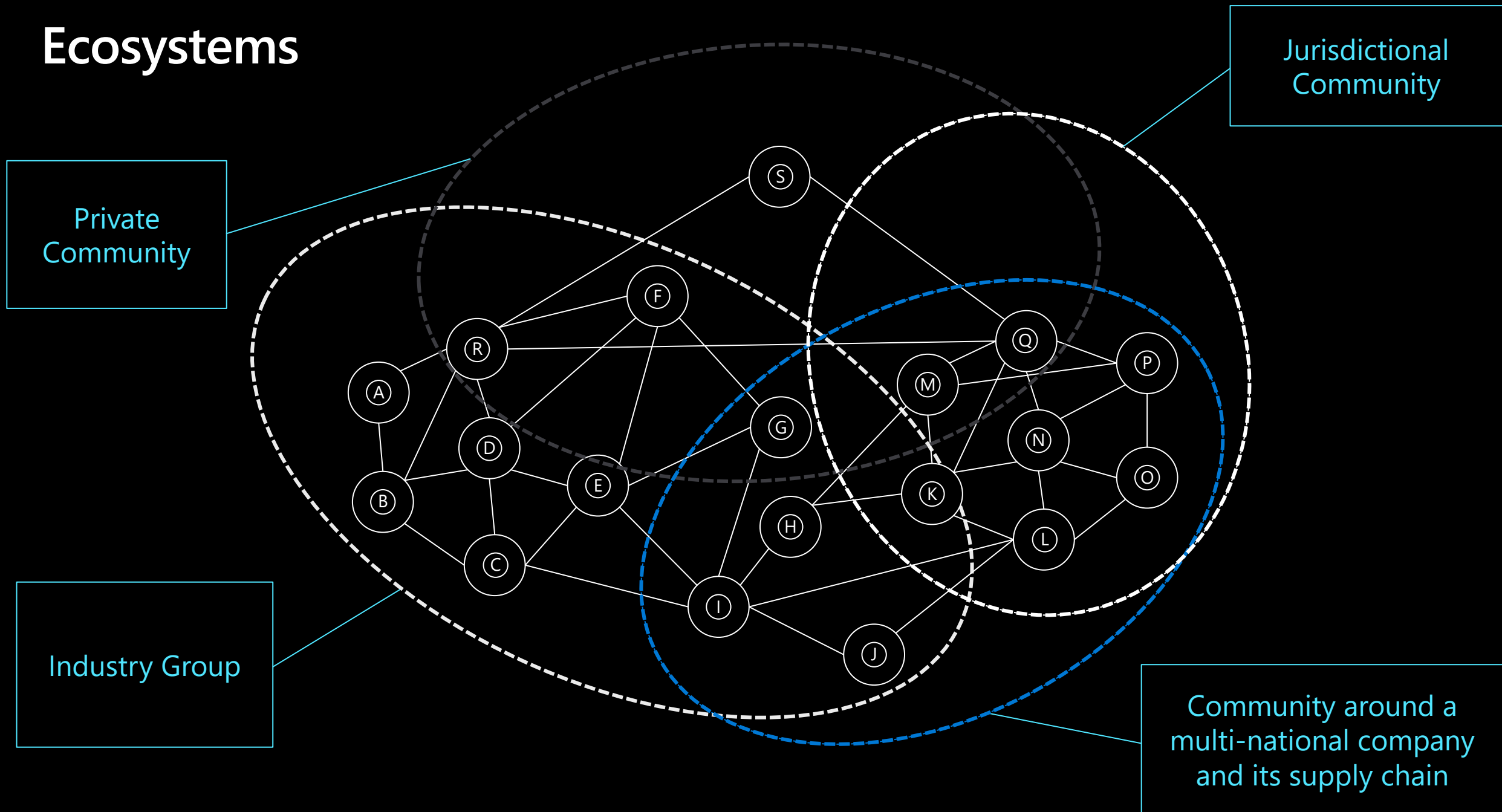
Marketplace platforms

These platforms **offer products and services as a conduit between suppliers and consumers or businesses**. Amazon and **Alibaba** are leading examples.

B2B infrastructure (platform as a business)

This builds **core tech platforms** for other companies' ecosystem businesses. Examples include data-management platforms and **payment infrastructure providers**.

Ecosystems



Private
Community

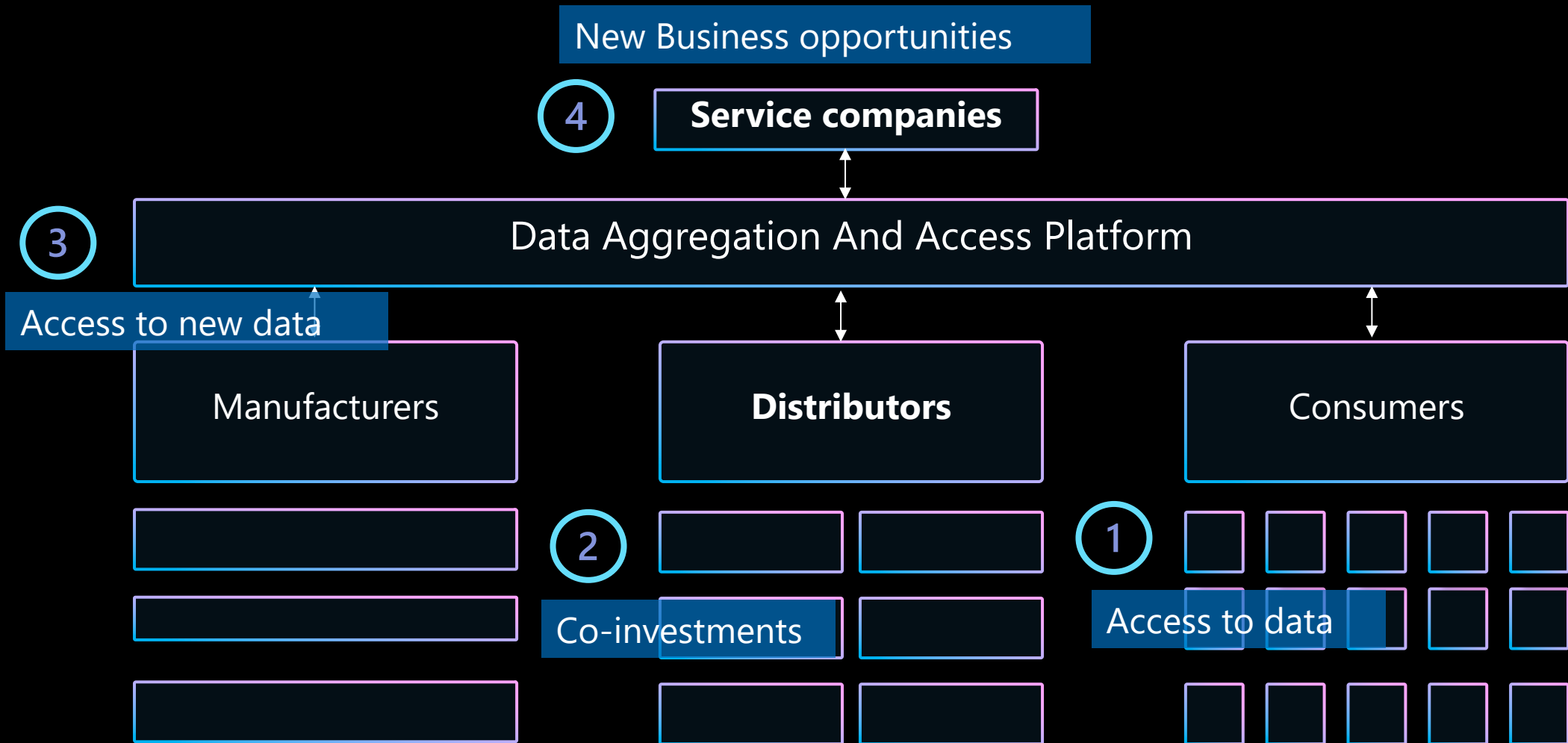
Jurisdictional
Community

Industry Group

Community around a
multi-national company
and its supply chain

The Promise – with cross-sectorial ecosystems

Data ecosystem greater than a sum of its parts

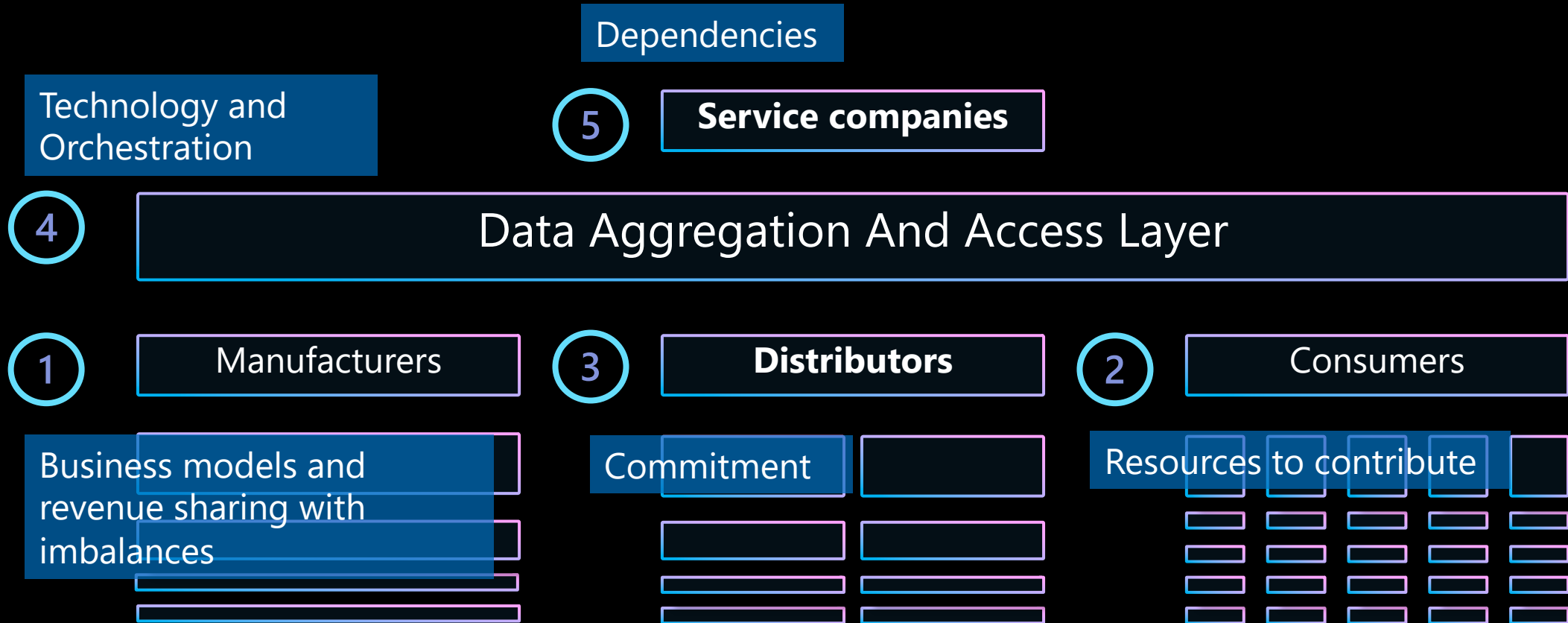


2

Challenges and learnings

Considerations

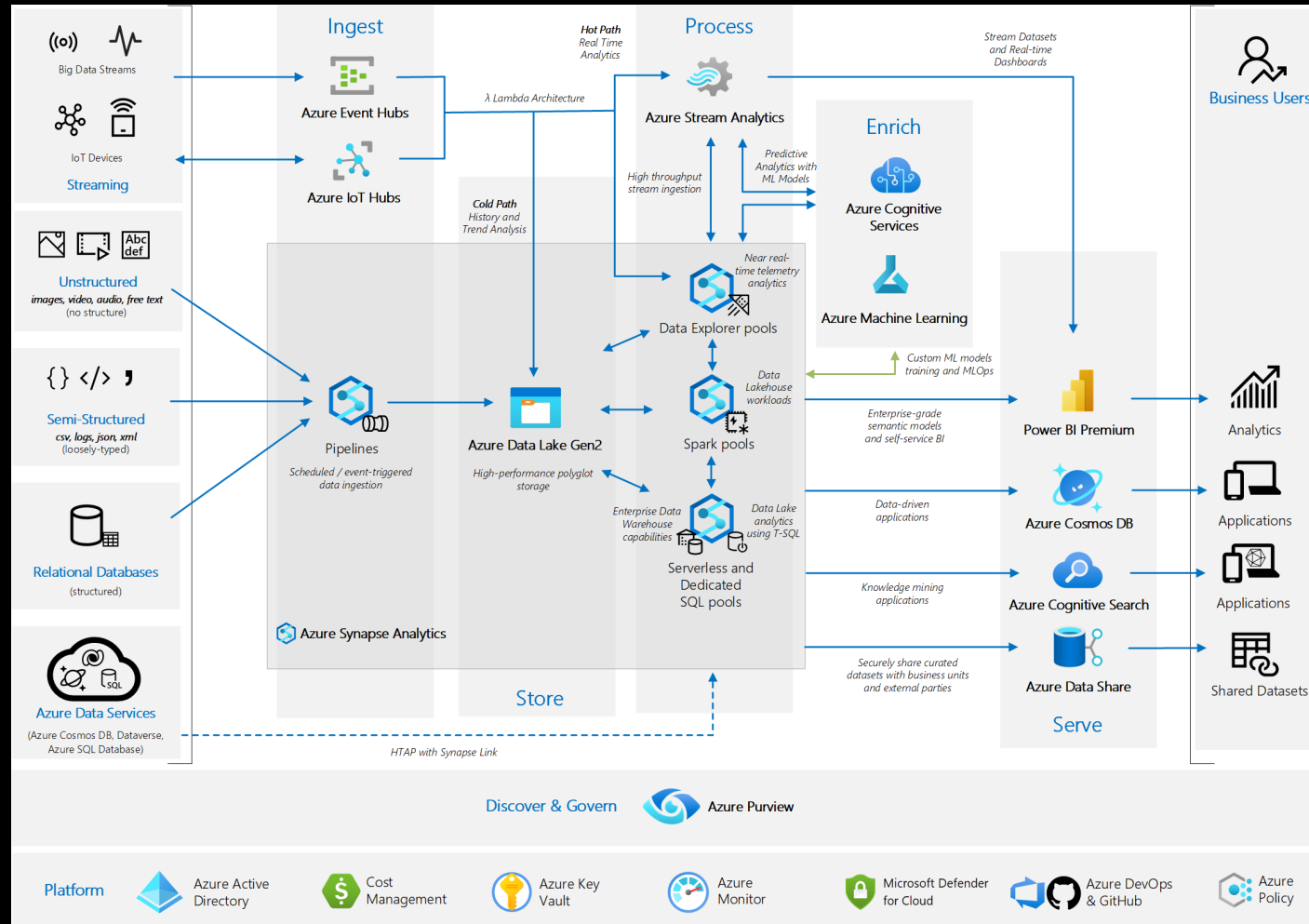
Complexity of the real world



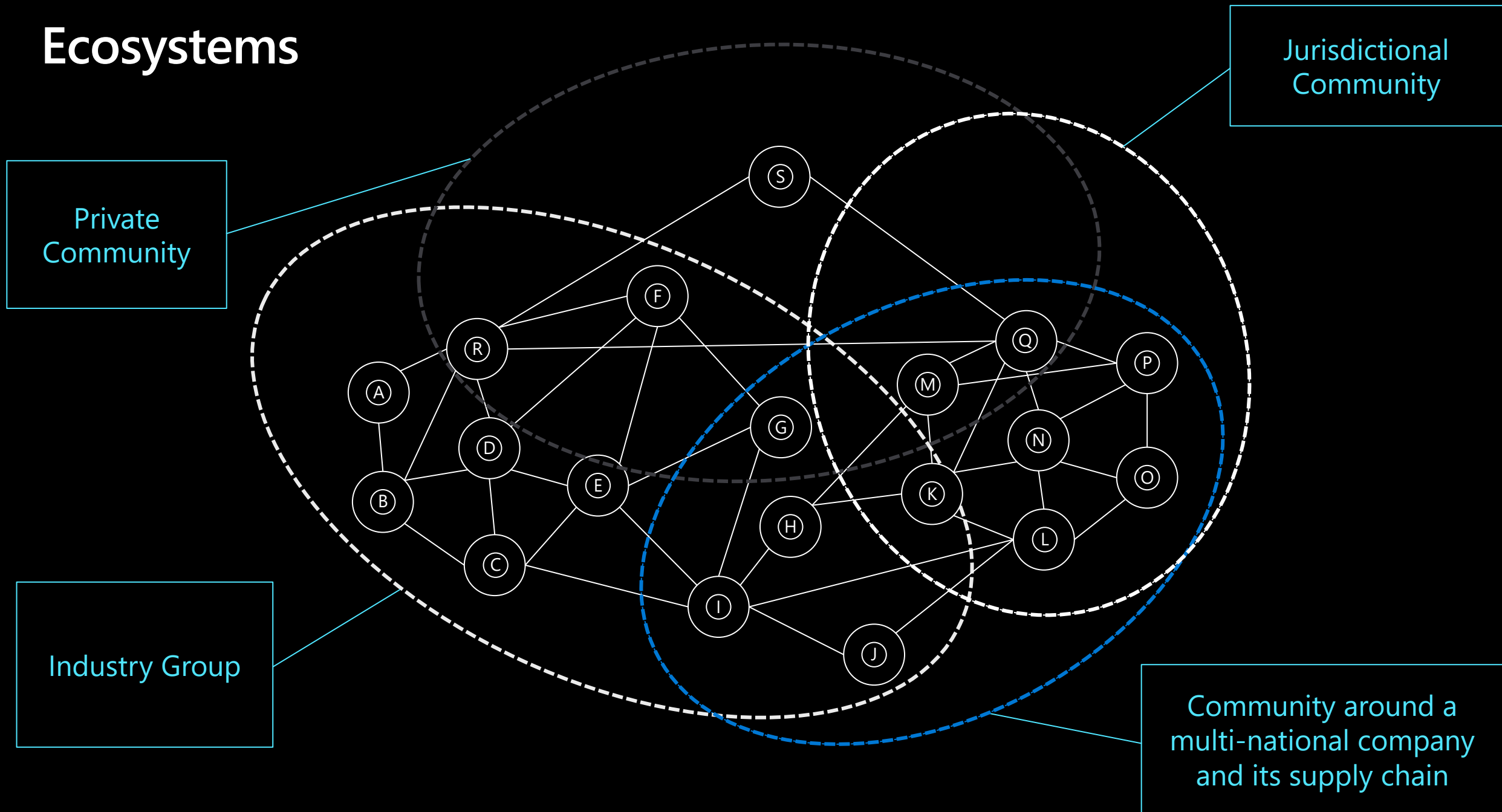
3

Technology enabling data ecosystems

So, we need to build a Data Platform, great . . .



Ecosystems



Private Community

Jurisdictional Community

Industry Group

Community around a multi-national company and its supply chain

Data & AI capabilities for the future

Supporting core differentiator with quality data and AI capabilities

End to end data analytics



Fabric

Shared platform for all data & analytics needs

Visibility to all data assets



Purview

Create new level of visibility and governance across all data assets

Production AI capabilities



Fabric



Azure AI Studio & OpenAI

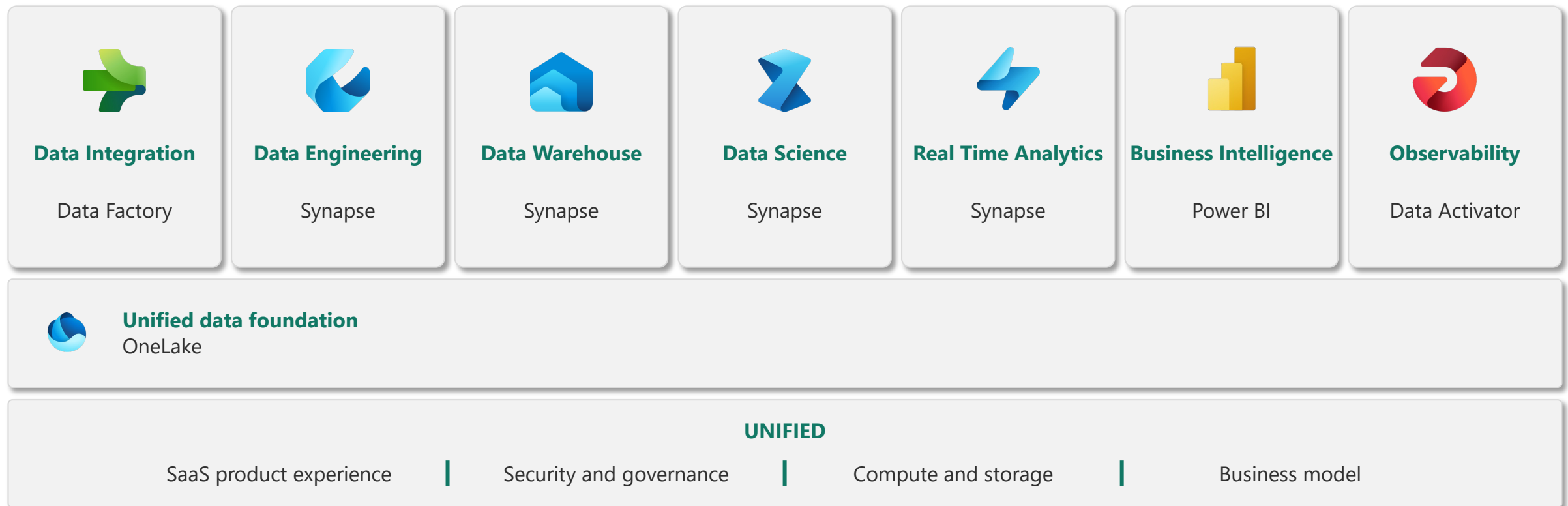


Azure Machine Learning

Full-stack capabilities for Machine Learning and Generative AI development

Microsoft Fabric does it all—in a unified solution

An end-to-end analytics platform that brings together all the data and analytics tools that organizations need to go from the data lake to the business user



3

Key takeaways

Key Takeaways

Significant upside but there is a lot of moving parts

Do more with the ecosystem

Create new value streams and business opportunities enable competition in AI space against big companies.

Business models, commitment and orchestration

With ecosystem you get both sides of the coin. Make sure that there is clear enough incentive and orchestration.

Technology will support but does not solve issues

Technology enables and has become long way but still it can be significant investment



Microsoft AI

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Peter Ylén

Principal Scientist and Foresight and Data Economy Lead


VTT

SITRA



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Orchestrating and Managing Complex Business Ecosystems Based on System Dynamics Approach for Better Strategy Development and Decision Making

Peter Ylén

Decision making under uncertainties

Impact assessment of decisions

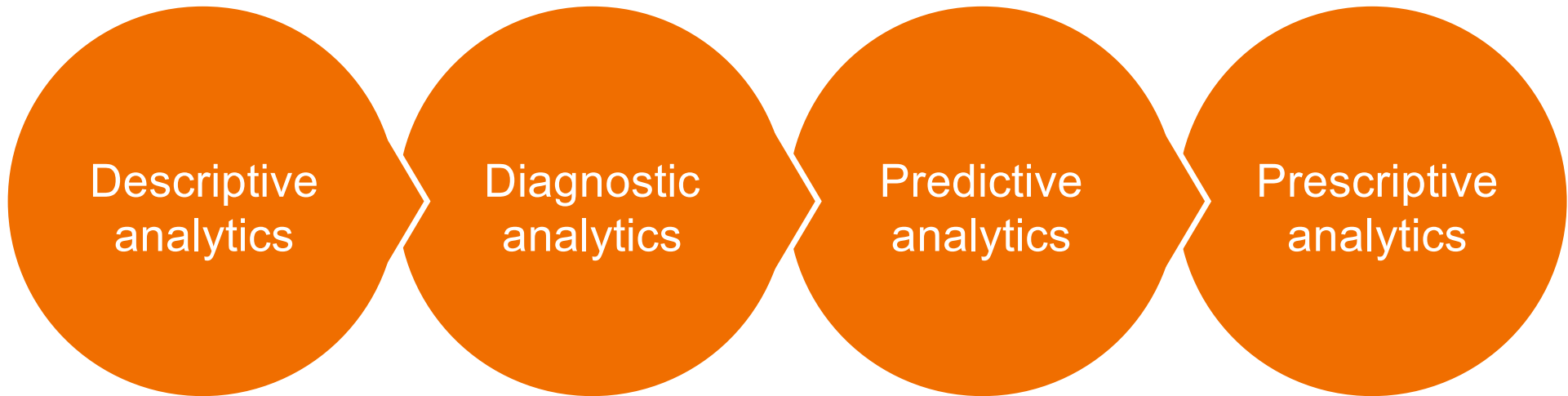
Strategic decisions with long term impacts have to be made in a rapidly changing environment with significant disruptive uncertainties taking place. Decision makers are increasingly held accountable for the impacts of their decisions.

Future oriented systemic decision support tools

Management flight simulators

Systemic impact assessment tool consist of foresight, system dynamic modelling, societal embedding in a impact assessment framework. Different future scenarios, what-if simulations and sensitivity analysis are visualised for evaluating decisions.

Integration of qualitative and quantitative methods to support decision-making



What is the current situation?

Which factors have contributed to the current situation?

What is going to happen to the system?

What can be done in order to reach the desired impact?

Quantitative methods

Qualitative methods

System Dynamics to support decision-making

- A decision-making methodology that combines data and expert knowledge
- The management flight simulator for decision support is built through modelling
- Fast simulations to support decisions
- Impact assessments
- What if simulations



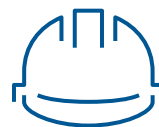
Identification of complex cause-and-effect relationships



Building and communicating mental models



Understanding the long and short term effects



Anticipating unexpected consequences



Identification of leverage variables to create a positive spiral



Simulation of decisions

Outcome Economy

VTT



Outcome economy

- In outcome economy goods and services are marketed, priced and sold based on the measurable outcomes (results) they produce to the customer
- Requires:
 - Entirely new business processes and models
 - Different level of partnerships and communication in the ecosystem
 - Metrics for the outcome
 - Digitalization will enable metrics (sensors, IoT, analytics, open data)

From buying the equipment

To buying functionality of the equipment

To buying 20% productivity increase



From products to use and further towards outcome

	Product-focus	Use-focus	Outcome-focus
Value proposition	Owning the product/ equipment	Using the product/ equipment/ service	Reaching outcome targets
Offering	Product/ Equipment	Functionality of the product/ equipment/ service	Pre-defined outcomes jointly agreed with customer
Role of the customer	A target: isolated and segmented entity	A resource: co-producer of service	Value co-creator: strategic partner
Value of offering	Value-in-exchange	Value-in-use	Value-in-context
Sales model	Stimulus-response model on exposure and transactions (push)	Mass customization model on co-creation (push & pull)	Customization model on service solutions (pull)
Role of data and data analytics	<i>Exploit old business</i> : product & equipment specs, market analysis, pricing models	<i>Exploit old business and explore new business</i> : track and analyse (real-time) use data to improve the user experience	<i>Explore new business</i> : use of data analytics to provide complex services and verify KPIs
Service innovation	R&D internally and in the value chain	Value co-creation	Experiential learning during service delivery with ecosystem actors
Nature of customer relationship	One-off relationships (short)	Relationship based on selling access to use for a pre-defined time period (medium-long)	Deep win-win relationships with the customer and other stakeholders (long)
Key focus areas	Efficiency	Effectiveness in creating good experiences	Entrepreneurial spirit and innovativeness, understanding of customers' business models, risk management, partnerships, transparency and openness

Succeeding in Outcome Economy needs understanding of complex systems, diverse factors and their interlinkages

Business related factors

VALUE NETWORKS
Customers, stakeholders,
suppliers, partners

**MARKET/EXCHANGE
CONDITIONS:**
Customer problem; need
Price level

MARKET STRUCTURE:
Competition, turbulence,
Emergent vs. established

Socio-cultural- regulation related factors

**POLITICAL AND REGULATIVE
FEATURES:**
National vs. municipal-level

MINDSET
Awareness on outcomes, attitudes

**SYSTEM OF INFORMAL
CONNECTIONS**
Interpersonal and organizational
relations, trust, quality of relationships

RESPONSIBILITY
Social and environmental
sustainability, equal treatment

REPUTATION
Brand image

Technology related factors

**TECHNOLOGY DEVELOPMENT
MODE/PACE**
Maturity; speed; alternatives

CURRENT INFRASTRUCTURE
Manufacturing, logistics, energy etc.

TECHNOLOGY COMPETENCES
Education, R&D mindset,
know-how

DATA AND SENSORS
Data, analytics, KPI metrics

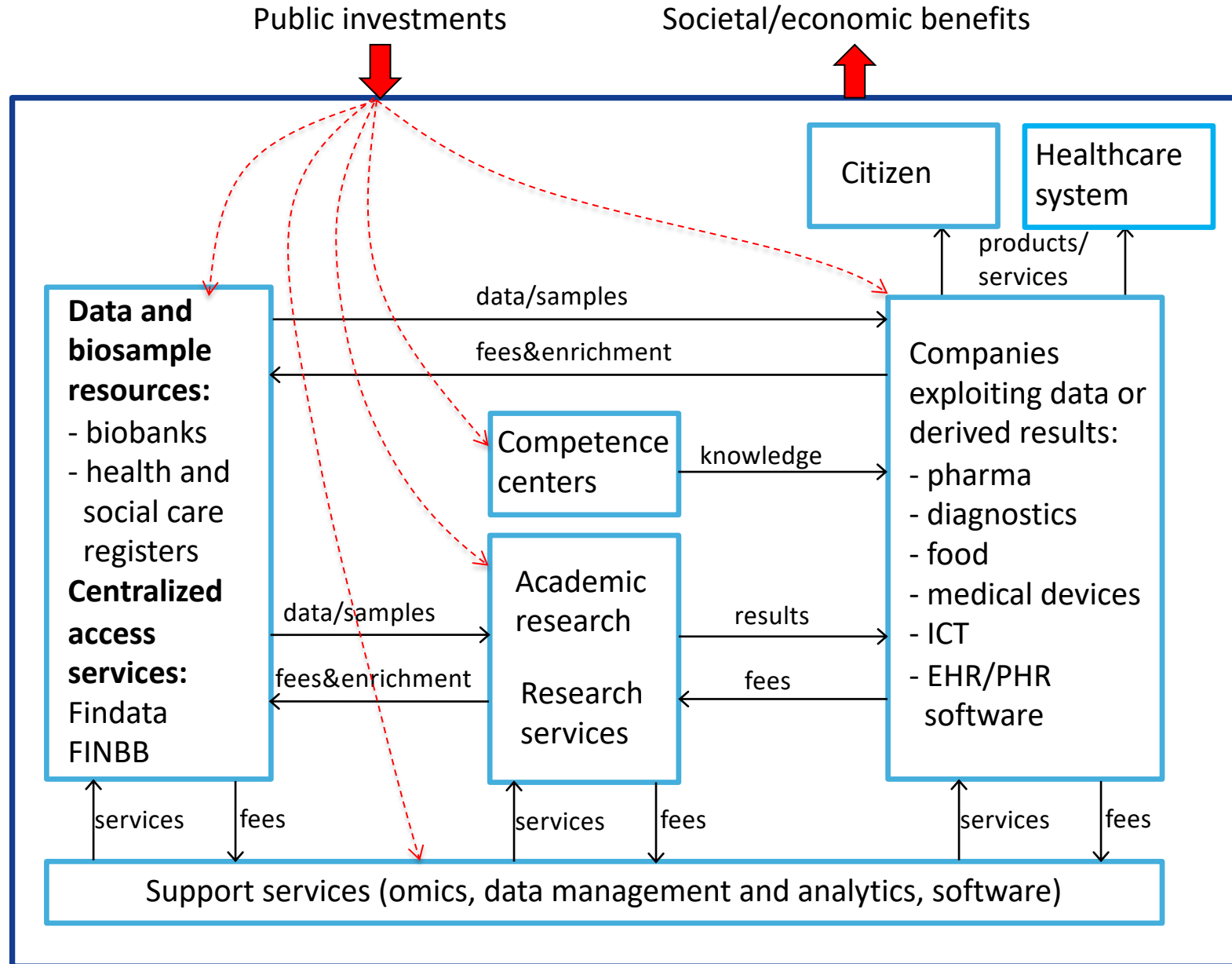
Case: Creating a data-based business ecosystem

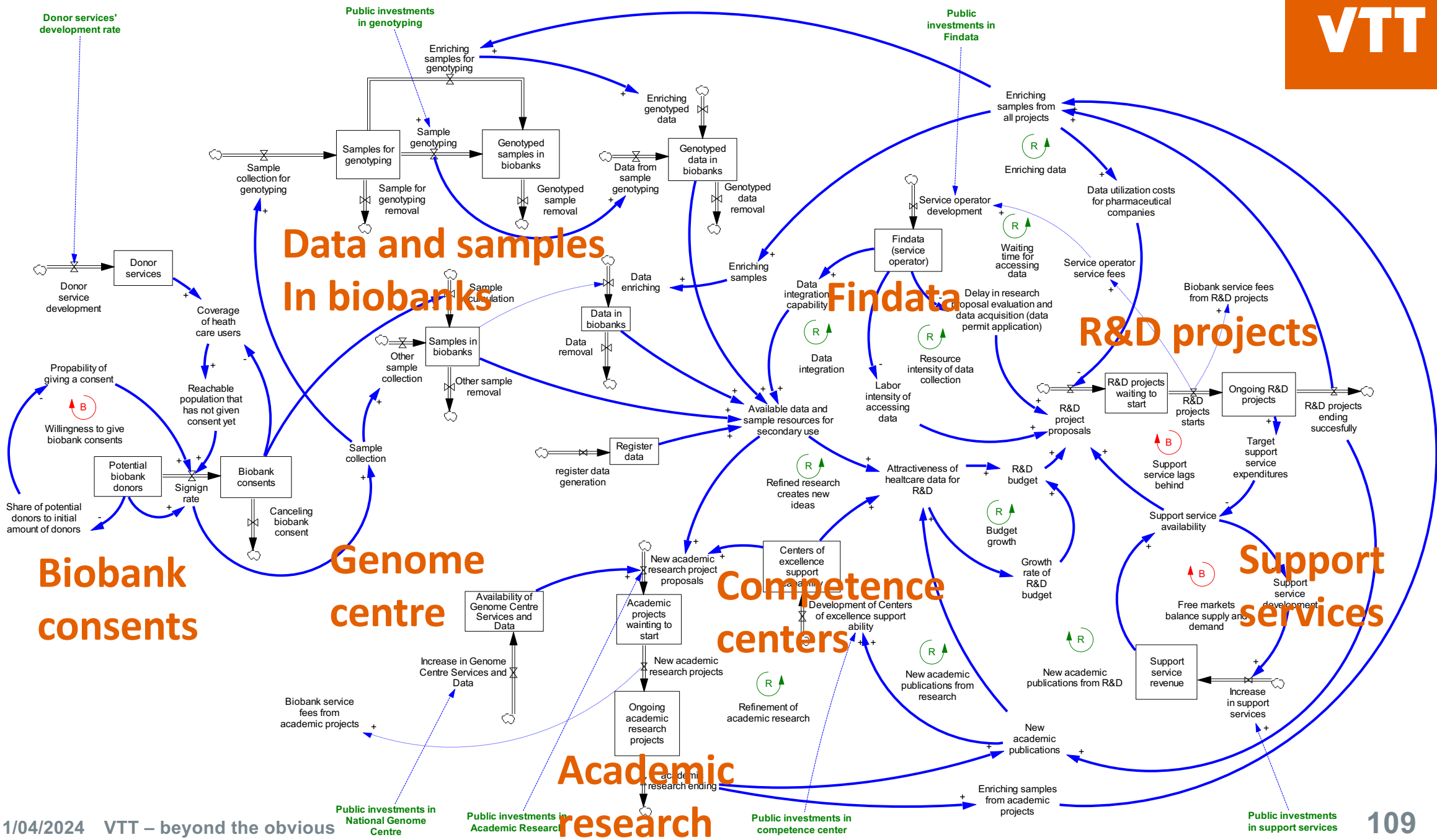
Finding the leverage factors for all critical stakeholders to succeed in a new complex business ecosystem



Ecosystem for secondary use of health data

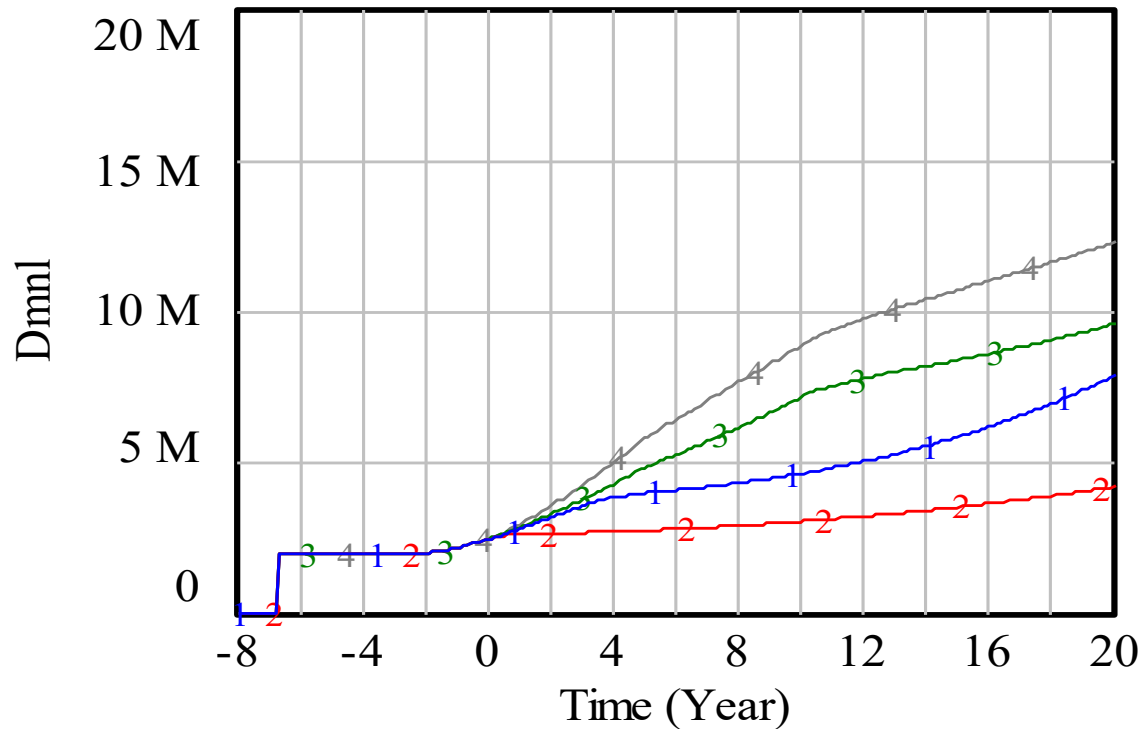
Data-driven
precision
medicine
ecosystem



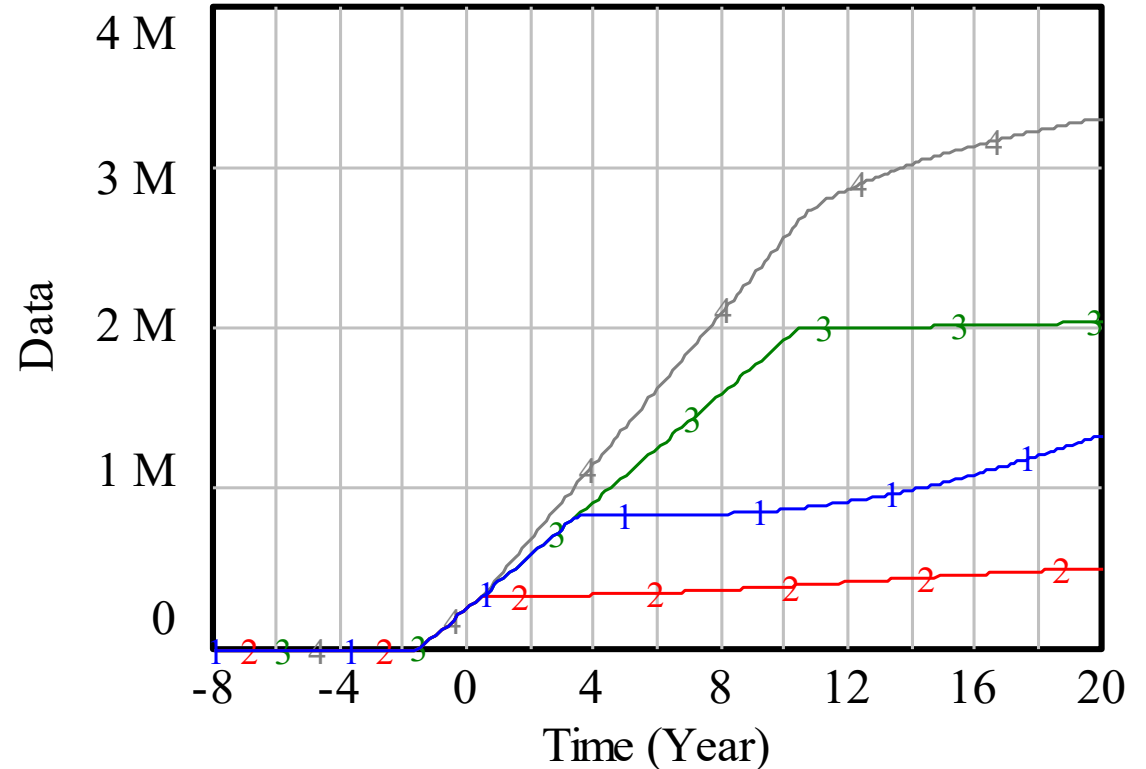


Impact of investments in value of data and data accumulation

Value of samples and data



Genotyped data



- (1) Basic scenario, investments in genotyping: 5 M€/yr for 3 years, Findata: 3M€/yr for 5 years
- (2) No investments to genotyping and Findata after 2019
- (3) genotyping: 5 M€/yr for 10 years, Findata: 6 M€/yr for 6 years
- (4) genotyping: 7 M€/yr for 20 years. Findata: 8 M€/yr for 6 years

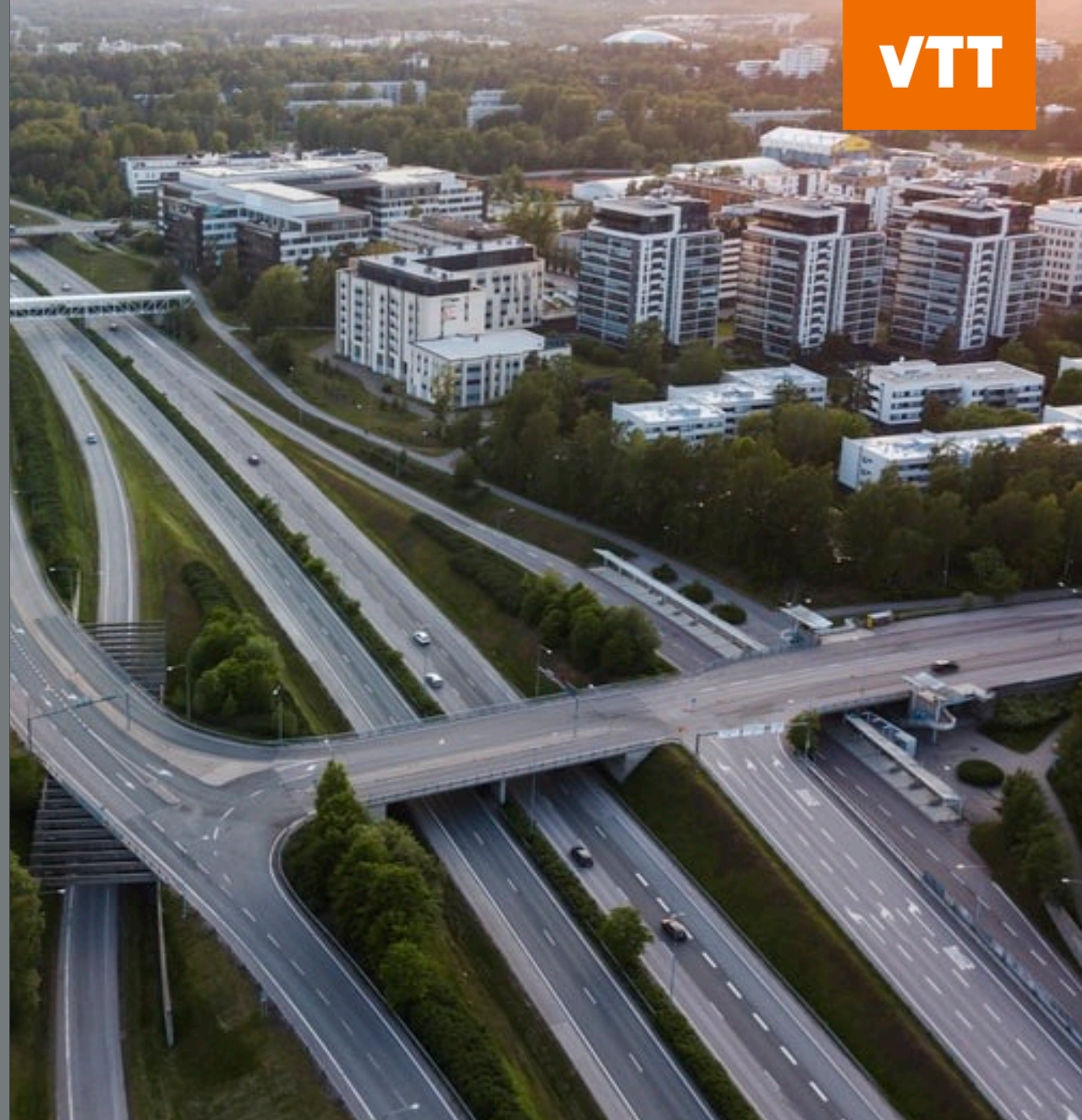
Case: Management Flight Simulator for City Managers

“Traditionally city decision-making is focused on short-term, sectorial factors and regulations. System dynamics brings holistic view, defines leverage points for reaching targets and goes beyond traditional silos.

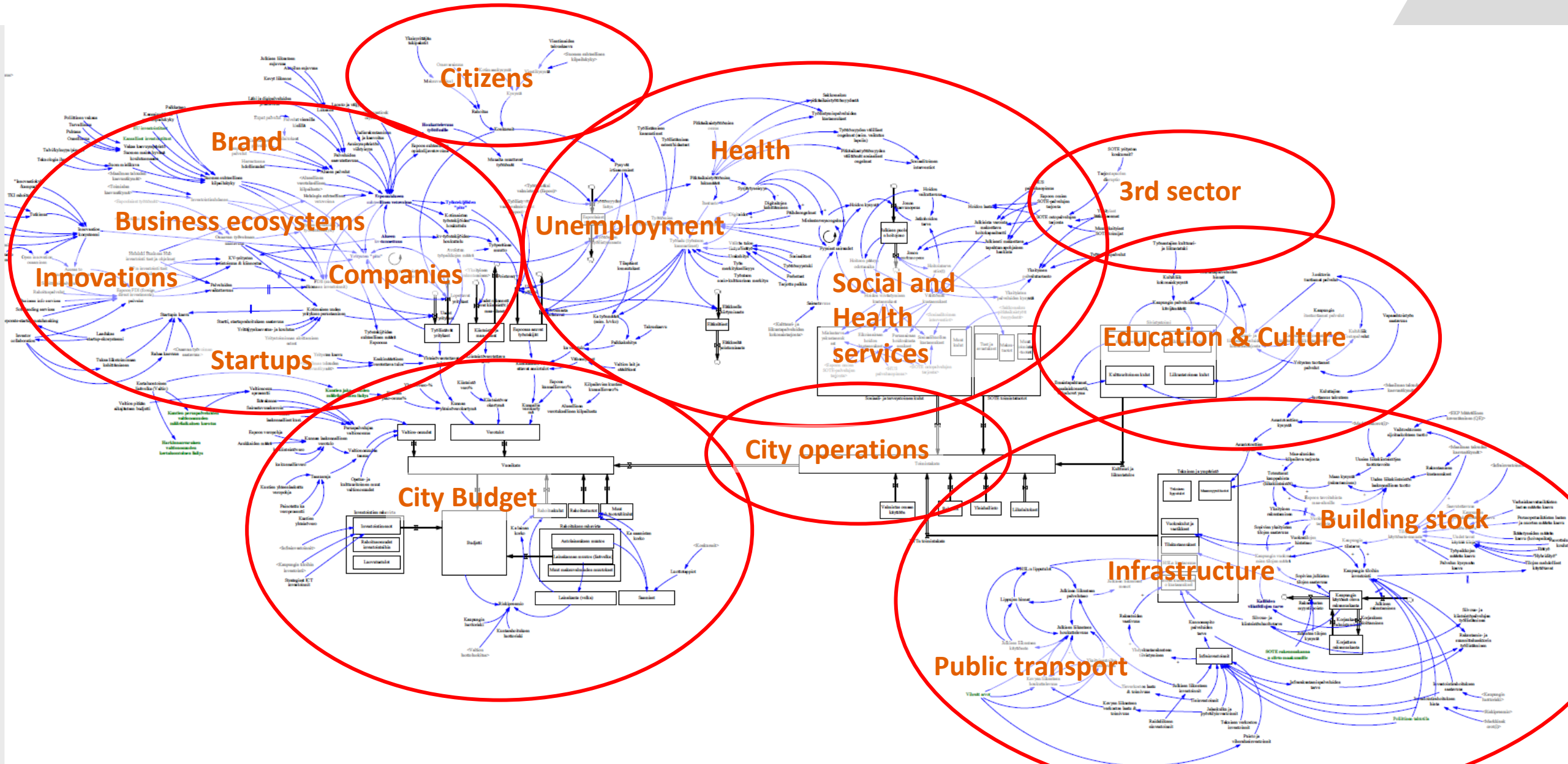
Combining data and tacit knowledge is very powerful approach for decision-making.”

Päivi Sutinen

PhD, EMBA, Service Development Director, City of Espoo, Mayor's Office



Preliminary model structure for the City of Espoo



Scenarios



**GREEN
POWER**

"Climate change is the next Battle. What is required is green industry policies led by the European Commission"

International



**QUANTUM
LEAP**

"Growth, Growth, Growth. Technology and capitalism will pull the world economy from COVID recession"

Regulation



REGULATION FINLAND

"Globalization is dead – long live the strong state, which will protect the citizens from pandemics and immigration"

Market power



**DISTRIBUTED
WORLD**

"Circular economy and working remotely are the new normal"

National

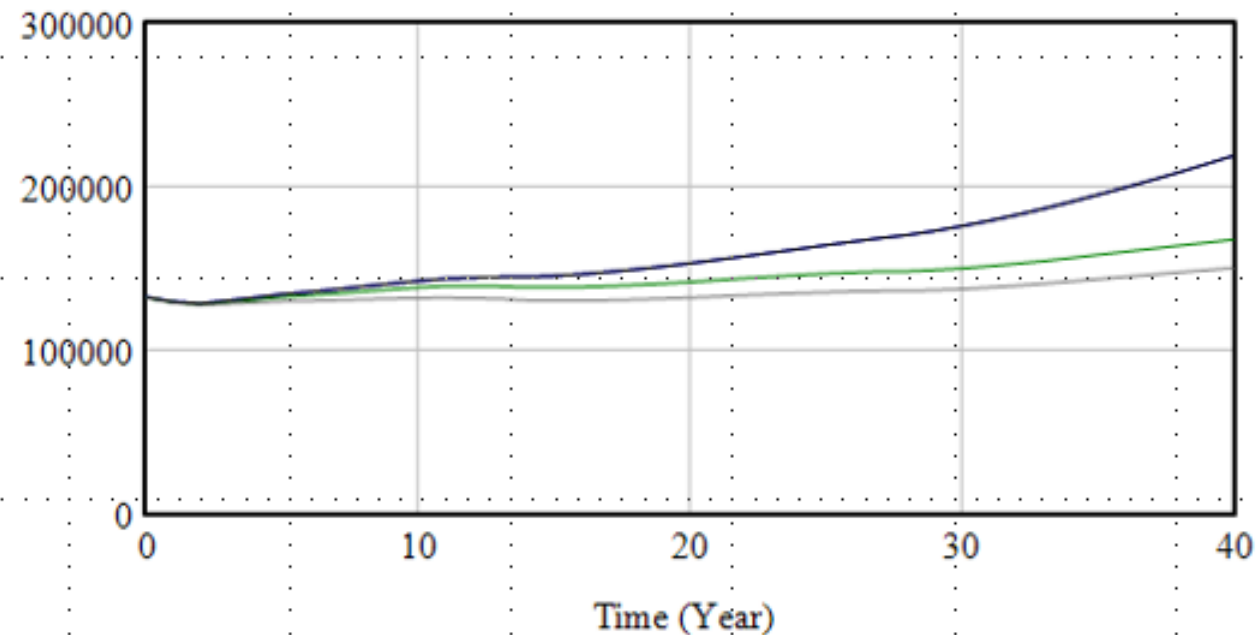
Scenarios developed by Nordic West Office, Risto E.J. Penttilä,

Actual city data, interviews ... & simulation interface

	KIELI		Muutos	IKÄ								TOTAL	%
	2011	2017		- 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 - 74	75 -		
Espoo				7906	15711	16124	13546	8244	1283	37	0	135164	48,5 %

	2010	2011	2012
A Ma lkm			
Muuttaneet yhteensä	16900	18371	19297
B Ka lkm			
Työlliset muuttaneet	9812	10665	11036
C Te lkm			
- Valtionveronalaista tuloa saaneet	9794	10638	11012
D Sä lkm			
- Palkkatuloa saaneet	9600	10435	10780
E V lkm			
- Yrittäjätuloa saaneet	674	686	668
F F lkm			
			10437
G T lkm			
			8109
H I lkm			
			6 366
I M lkm			
			19 857
J I lkm			
			3 640
K I lkm			
			3 825
L K lkm			
			12 913
M Ammatillinen, tieteellinen ja tekninen toiminta			
	12 009	11 658	
N Hallinto- ja tukipalvelutoiminta			
	8 182	10 253	
O Julkinen hallinto ja maanpuolustus			
	2 819	2 991	
P Koulutus			
	10 127	10 105	
Q Terveys- ja sosiaalipalvelut			
	13 251	15 235	
R Taiteet, viihde ja virkistys			
	2 714	2 784	
S Muu palvelutoiminta			
	2 220	2 179	
T Kotitalouksien toiminta työnantajina			
	1	504	
U Kansainvälisten organisaatioiden ja toimielinten toiminta			
	25	33	
X Toimiala tuntematon			
	1 549	1 528	

Open jobs in the city of Espoo



	2017	2018
lkm	4792485	4927476
lkm	4083763	4282359
lkm	4082950	4281869
lkm	4025532	4217833
lkm	273891	311103
lkm	4054326	4250894
lkm	708723	645117

— Green Power
— Base Case
— Distributed World
— Regulation Finland
— Quantum Leap

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	
11 410	11 745	11 854	12 031	12 275	12 501	12 767	12 954	13 111	13 331	13 535	13 735														
-0,3 %	3 759	3 855	3 901	3 979	4 054	4 155	4 280	4 344	4 388	4 458	4 487	4 543													
8383,3 %	1 512	1 547	1 577	1 590	1 628	1 655	1 713	1 753	1 789	1 807	1 827	1 849													
5,3 %	988	1 015	1 046	1 080	873	972	940	1 013	858	817	766	846													
-0,2 %																									

TT - beyond the obvious

Case: Marine management and maintenance

"We got a better view of our business, the mobility of service engineers, where service centers can ask for help, and a lot of information on what was previously unknown."

Jukka-Pekka Hellgren, ABB
Global Competence Manager



Case ABB Marine

Flexible, global, and cost efficient – A new approach to developing a dynamic service competence base

How to serve customers efficiently and sustainably in a complex business environment?

The approach turns a snapshot view into a management flight simulator to test what if without the risk of wrong decisions

Combined with other managerial and IT related factors, the approach supports better planning of competence development and manning policies.

- More flexible service competence base
- More cost efficient service operations
- Right skills in the right place for the customer

First, the approach involves competence mapping.

- 5 different competence systems
- 2900 marine-specific skills
- 200 service engineers mapped and total of 50 000 skills recorded

Second, the approach involves business analysis.

- competence charts
- resource utilizations
- customer needs and drivers

Thirdly, the approach involves dynamic modelling of the global competence base

"We got a better view of our business, the mobility of service engineers, where service centers can ask for help, and a lot of information on what was previously unknown"

Jukka-Pekka Hellgren, ABB
Global Competence Manager

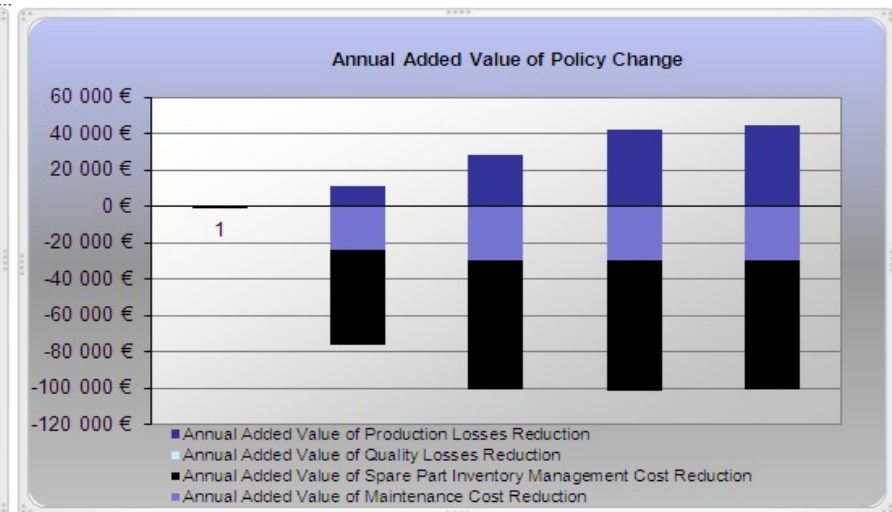
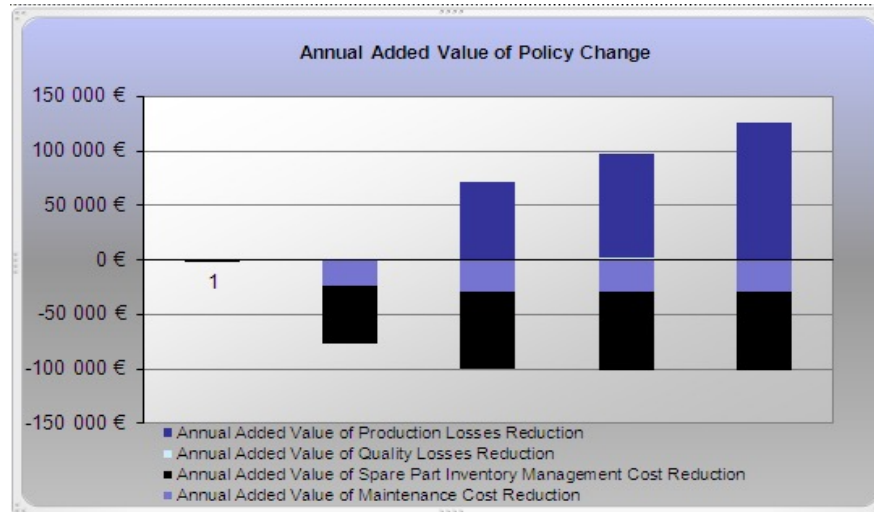
Scheduled maintenance interval & end product market price

Added value of policy change at year 2 (length of maintenance interval). 5 year simulation.

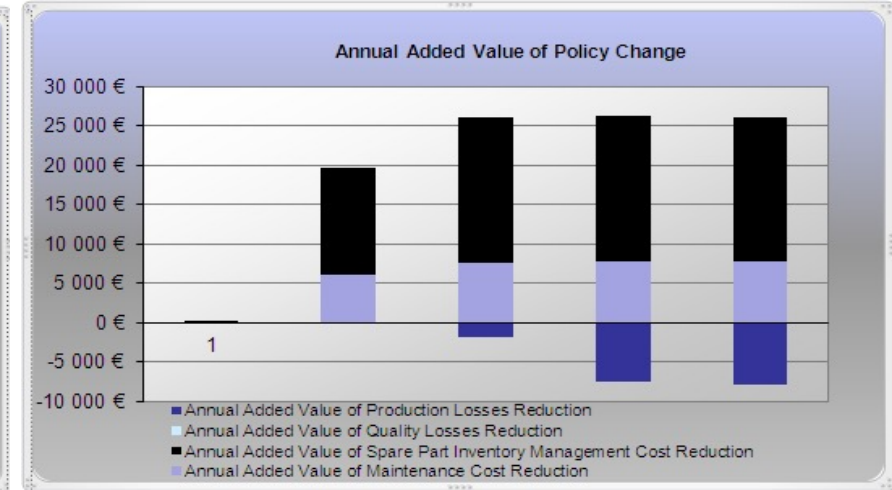
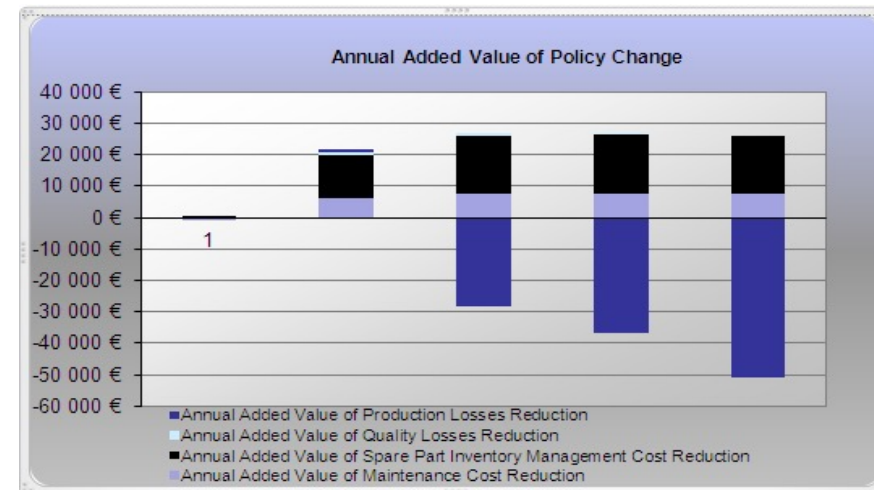
Market price of end product unit 900\$

Market price of end product unit 500\$

Policy change:
Shorter
scheduled
maintenance
interval (after
1st year)



Policy change:
Longer
scheduled
maintenance
interval (after
1st year)



Case: Circular economy

Agricultural residues of Saga City, Japan

- Conversion of residual biomass to recyclable packaging and furnishings materials
- Systemic impact assessment for evaluating technological potential
- The economic and social value of the circular Saga ecosystem
- Simulator methodologies to support the municipal decision making



VTT System Dynamics – Holistic tools for complex service ecosystems

CHALLENGE

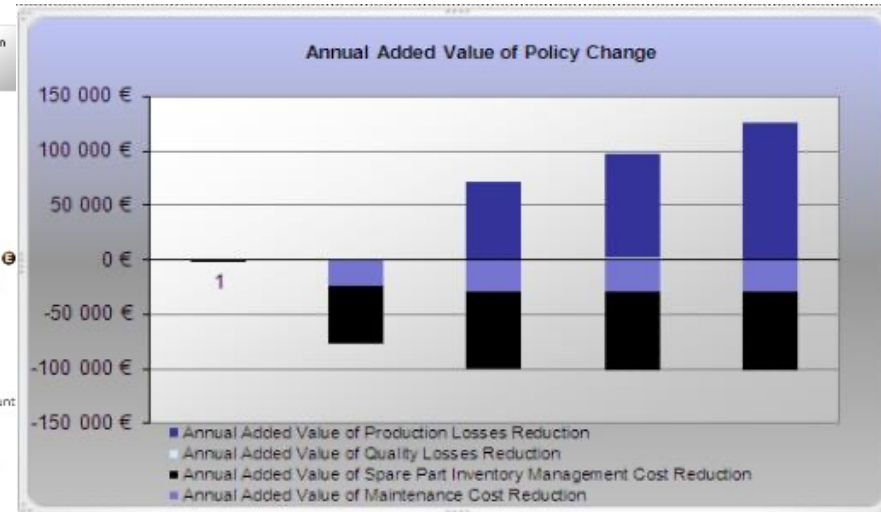
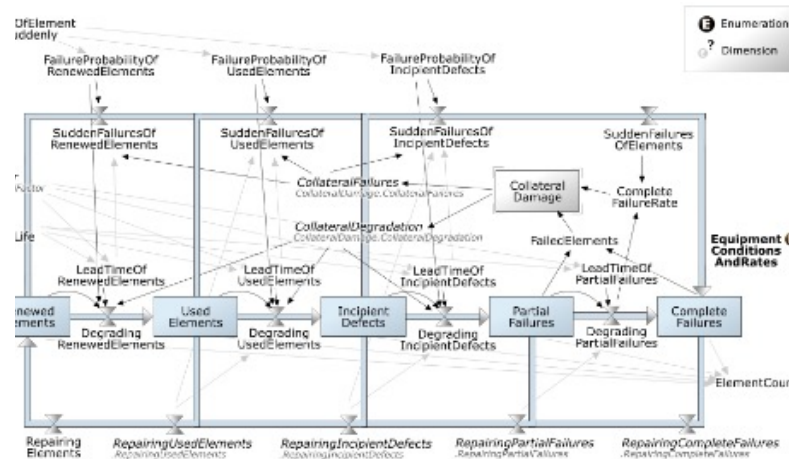
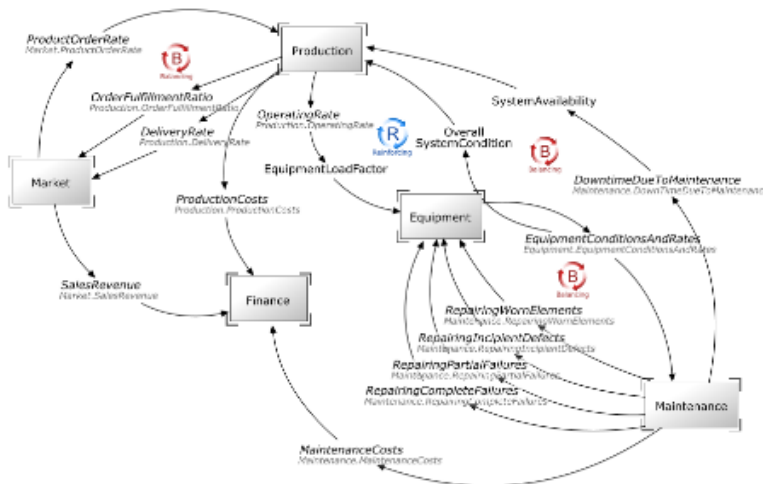
- Everything affects everything – in order to succeed in maintenance various factors have to be taken into account, market situation, resources, competences, technologies, digitalization, strategy, ... to name but a few

SOLUTION

- System dynamic model for optimizing best choices and minimizing impacts of uncertainties
- What-if scenarios and simulations
- Finding the leverage points for achieving your goals
- Understanding short and long term impacts of decisions.

BENEFIT

- Tool for strategic decision making, understanding complex dependencies, evaluating impacts of uncertainties and disturbances and making informed decisions in different situations.





VTT

Thank you for interest

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Emilia Gädda

Chief Advisor of Sustainability and Circular Economy

Finnish Textile & Fashion Association

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Digital Product Passport in Fashion

Nordic Data Festival 2024

Emilia Gädda
Chief Advisor, Sustainability and Circular Economy
10 April, 2024

Finnish Textile & Fashion in Brief

1,6

BN. €

1905 EST.

16+

EU Textile
Strategy



251

Members



Sustainable
Growth
&
Competitive
Advantage

5 500

People

86%

of industry
turnover



2

Collective
Agreements



5

Advocacy Groups



**Luhta Sportswear
Company**



Lapuan Kankurit



**Vitruan
Composites**



Spinnova



Mölnlycke



**Emmy Clothing
Company**



Marimekko



Finlayson



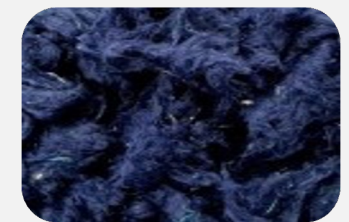
Ahlstrom



Novita



C.P.E. Production



Rester



VAIN



Joutsen



Inka



Printscorpio



Delipap

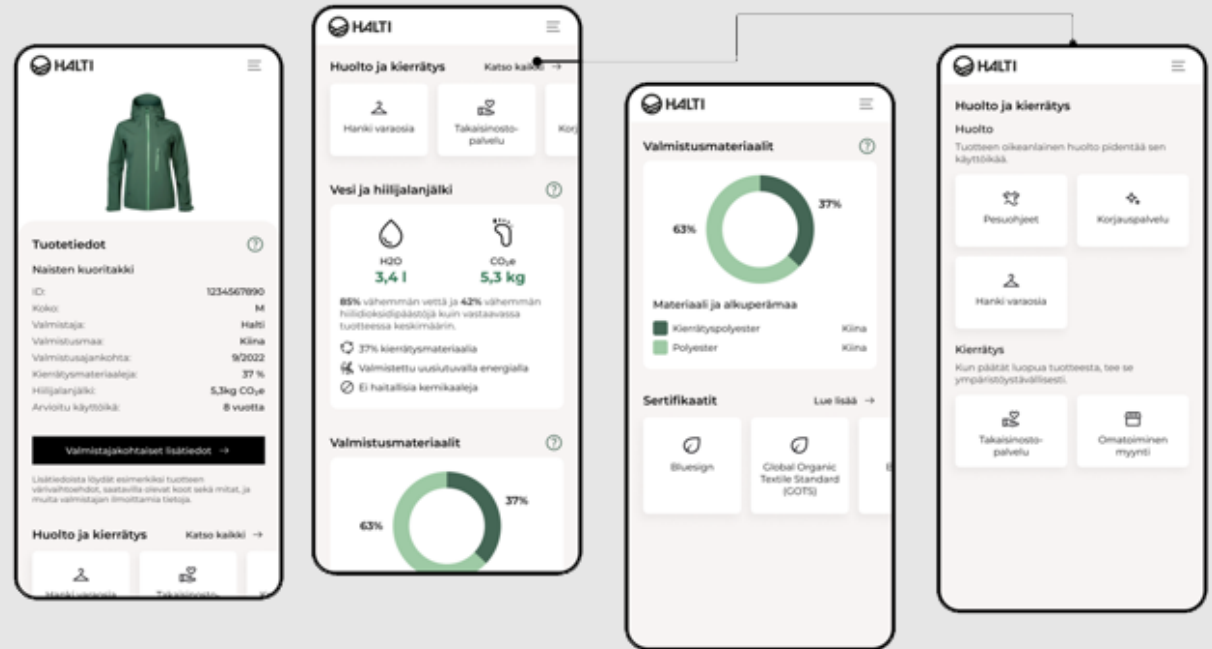
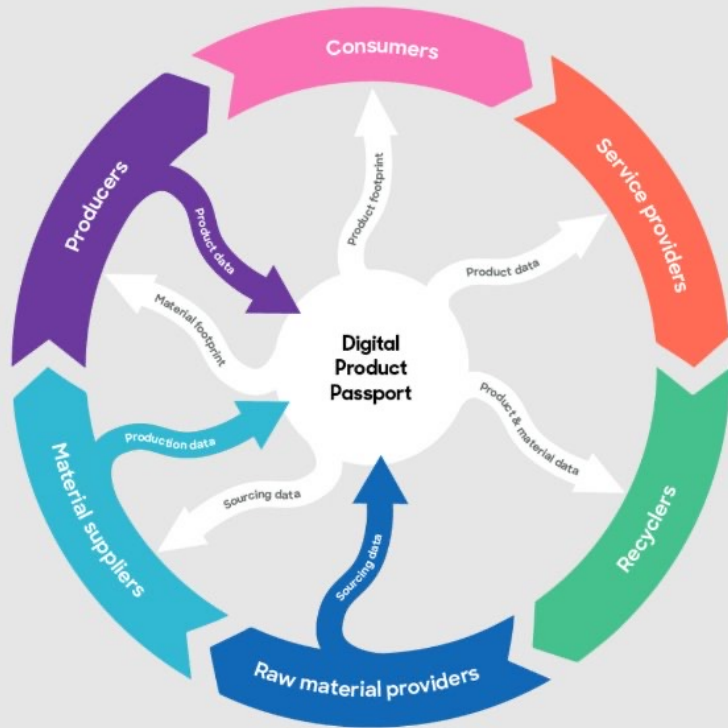


**FabPatch
Vaatelaastari**



VALUE CREATION: FROM
PHYSICAL TEXTILE PRODUCTS
TOWARDS **MANAGING OF**
DATA.

Digital Product Passport in Textile & Fashion



Perspectives on the Digital Product Passport

LEGISLATION

Company Perspective

- Capabilities and readiness
- Information systems and data availability
- Digital maturity


Solution Perspective

- Availability of DPP solutions
- Interoperability

(Eco)systemic Perspective

- Data ecosystems
- Data spaces
- Data in circular economy

STANDARDS

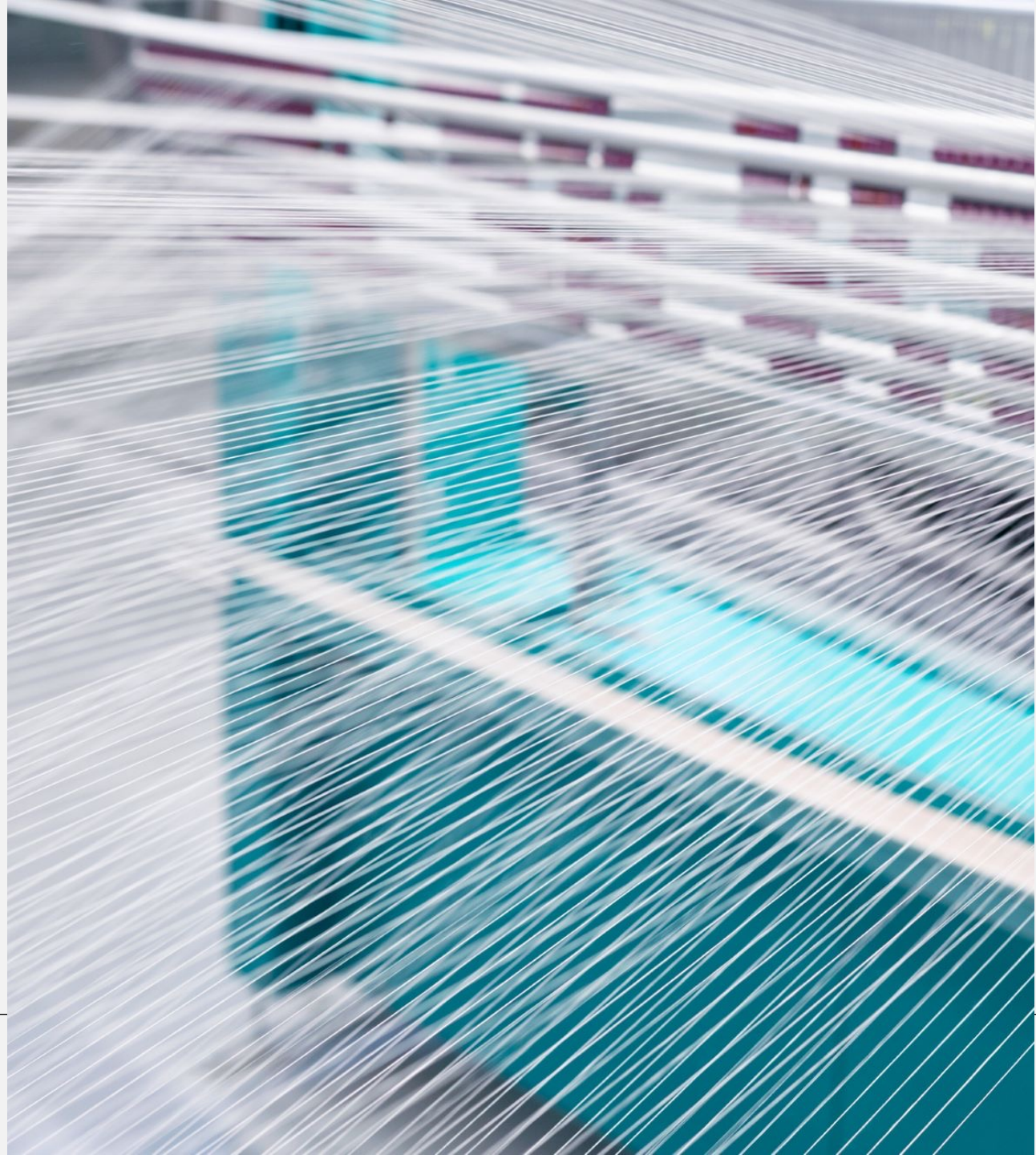


Capacity building via DPP projects

- ☞ DPP Concept
- ☞ Textiles DPP – Case Halti
- ☞ Nordic Blockchain Alliance
- ☞ Digitalisation of the fashion industry
- ☞ Industry-specific digital compasses for the green transition
- ☞ CIRPASS-2: Workwear circular business design and lifetime extension solutions enabled by DPP data
- ☞ FINPASS – the Digital Product Passport

Next steps to enhance digital transformation of the industry

- ⌘ Development of a textile data ecosystem in relation to DPP regulation
- ⌘ Transforming data into business
- ⌘ The role of digitalisation and technology in value creation



Thank you!



@Suomen Tekstiili &
Muoti



@Suomen Tekstiili &
Muoti



@TekstiiliMuoti



@suomentekstiilijamuoti

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Tuomas Syrjänen

Co-founder, AI Renewal/Artificial Officer

Futurice

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10.04.2024

Challenging the Conventions with data & AI?

Tuomas Syrjänen
Co-founder, Chief AI Officer

BERLIN / HELSINKI / LONDON / MUNICH / STOCKHOLM / STUTTGART / TAMPERE

futurice

Adam Savage's Spot Robot Rickshaw Carriage!



Play video on Youtube

BERLIN / HELSINKI / LONDON / MUNICH / STOCKHOLM / STUTTGART / TAMPERE

Challenging the convention with technology

→ business impacts achieved



Construction: Industrial Assembly

CYCLE TIME REDUCTION

16m → 9m

300K €

SAVINGS PER SITE / MONTH



Automotive: E2E process

CERTIFIED CARS

5 → 100

PER YEAR



Grocery retail

DATA & AI OPERATING MODEL RENEWAL

2 X EBITDA

PROFITABILITY

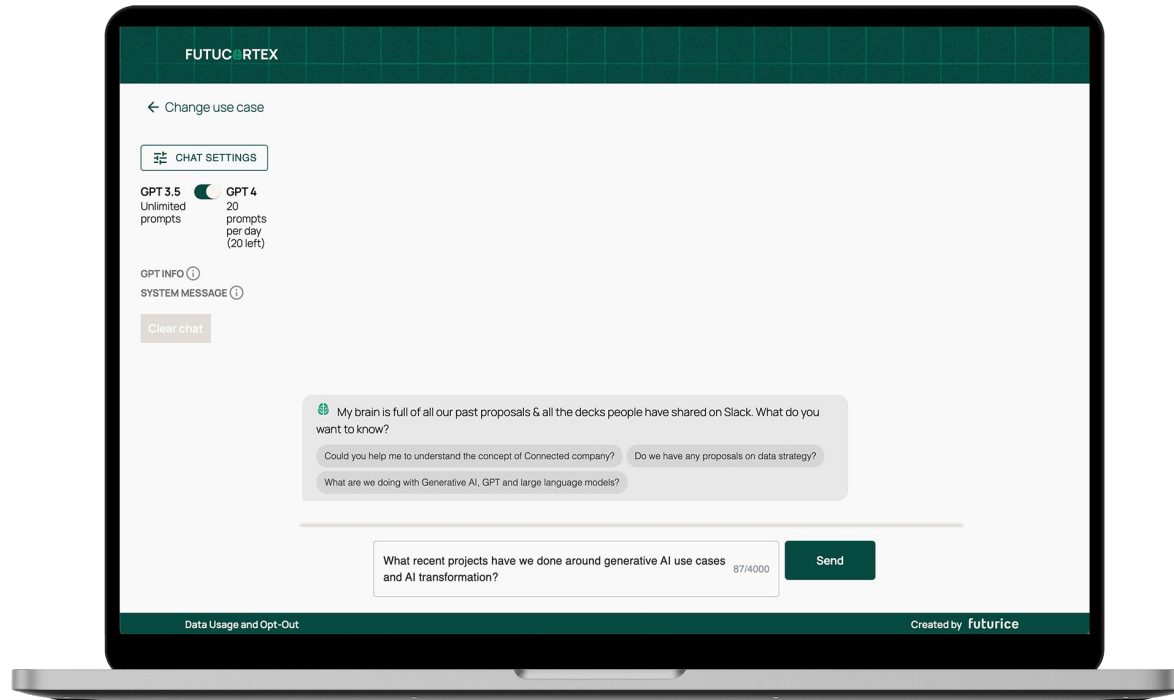
Live Demos

BERLIN / HELSINKI / LONDON / MUNICH / STOCKHOLM / STUTTGART / TAMPERE

futurice

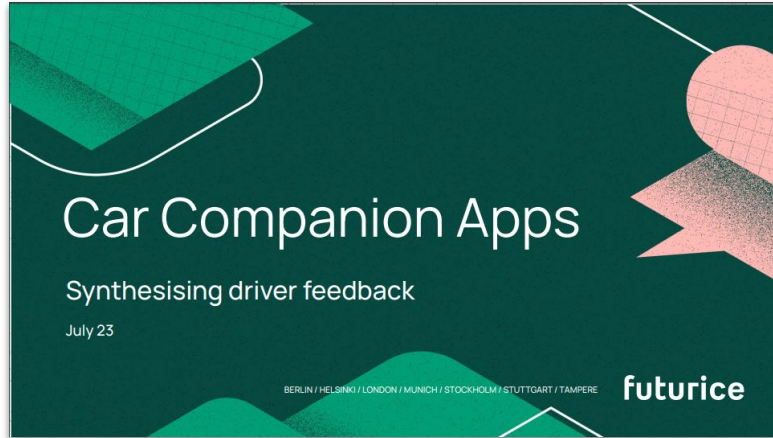
Example: Our automated knowledge platform

FutuCortex helps our sales people write better client proposals, faster.



Example: Customised client messaging

First step = Static insights reports



01		MINI iOS 4.8 out of 5, 11.9K Ratings Android 4.4 out of 5, 7.28K Ratings Customer feedback
02		My BMW iOS 4.8 out of 5, 61.3K Ratings Android 4.6 out of 5, 83.6K Ratings Customer feedback
03		Volvo Cars iOS 4.4 out of 5, 8K Ratings Android 3.8 out of 5, 33.3K Ratings Customer feedback <ul style="list-style-type: none">Some reviewers had difficulty accessing app notifications via iPhone settings, and others found the app to have limited functionality.One reviewer was disappointed with the lack of Apple Watch integration, while another found that the app lost track of their car's location.Some reviewers missed features that were available in previous versions of the app, such as sending destinations to the car's sat nav or setting the car's temperature ahead of time.These reviews show that the app has some issues connecting to the car, lacks certain features such as location tracking and driving journal, and has inaccurate or missing information.Some reviewers also mention problems with the sign-up process and limited functionality. Overall, customers suggest that more features should be added to the app to make it more comprehensive.

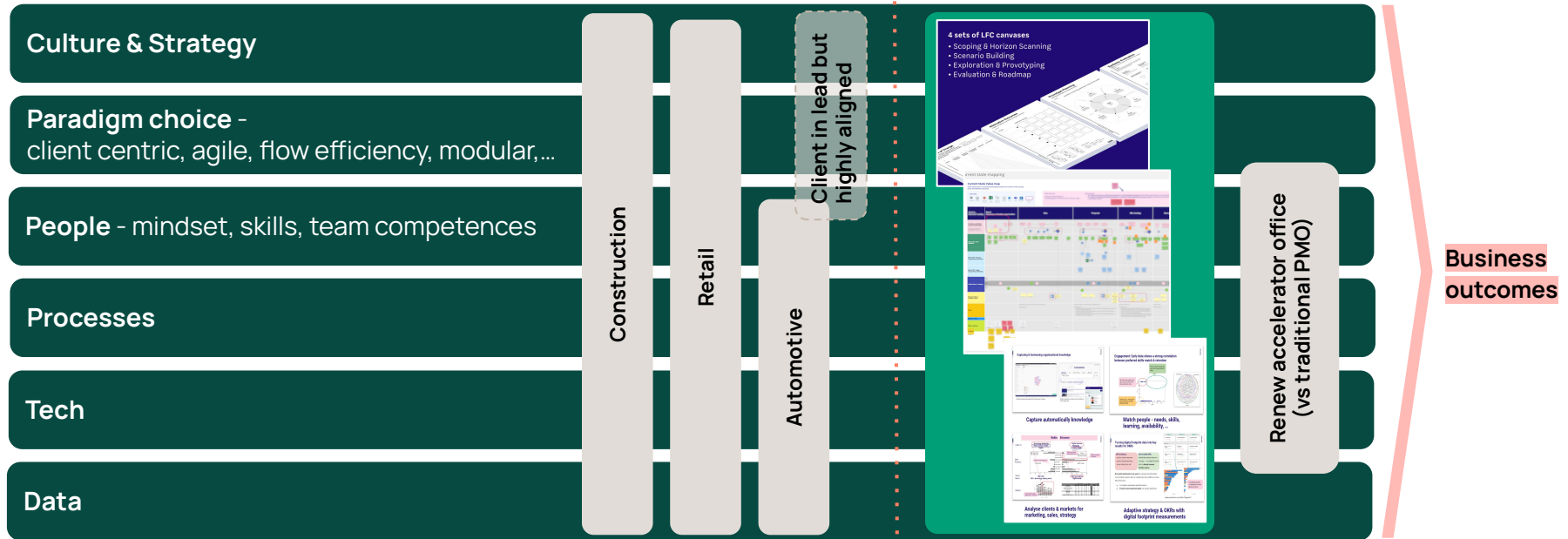
9

futurice

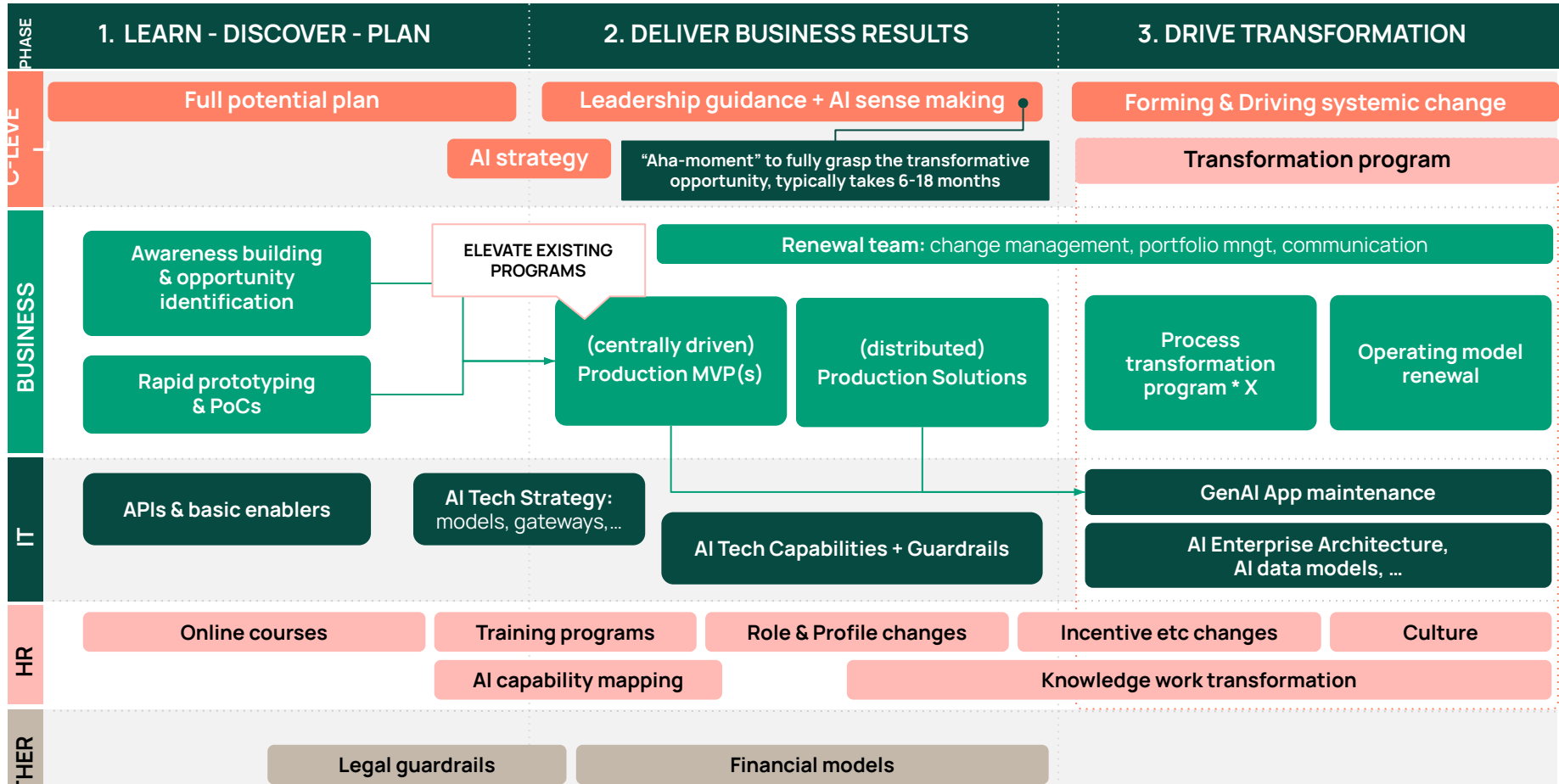
Why transform your culture?

New technology does not bring business impact alone:

“Full stack” approach of culture, operating model, organisational design, ... for impact



GenAI Transformation phases



7 critical success factors to get business value from AI

Ask these questions internally (or ask us to help!)

1. Make the opportunity tangible with a concrete success story

2. Select a strategic domain to focus on

3. Define a key change & KPI to aim for

4. Get organisational bandwidth

5. Business owner who wants to change

6. Change agent to drive day-to-day

7. Basic IT capabilities & commitment to support

7 critical success factors to get business value from AI

Ask these questions internally (or ask us to help!)

1. Make the opportunity tangible with a concrete success story

Select a strategic domain to focus on

Define a key change & KPI to aim for

Get organisational bandwidth

Basic IT capabilities & commitment to support

- You can't build a strategy & enablers for something you don't understand yet - you need to learn by doing
- Seeing is believing: the ah-ha moments will come when you can show something concrete, starting with prototypes & PoCs

7 critical success factors to get business value from AI

Ask these questions internally (or ask us to help!)

Make the opportunity tangible
with a concrete success story

2. Select a strategic domain to
focus on

3. Define a key change & KPI to
aim for

- 1 domain with multiple solutions > > > multiple domains with 1 solution
- It's easily chaos without 1 or 2 key changes to drive towards

7 critical success factors to get business value from AI

Ask these questions internally (or ask us to help!)

Make the opportunity tangible with a concrete success story

4. Get organisational bandwidth

Basic IT capabilities & commitment to support

- Prepare for multiple 100s of k investment
- Focus on the business case from the start of each use case
- Look for an existing program to elevate with AI

7 critical

Value from AI

Ask these questions

- Changes will be large and cause conflict - a strong business leader is needed to drive them through
- Every successful transformation we've seen has had an amazing change agent driving both business & tech

Make the opportunity
with a concrete

change & KPI to

Get organisational bandwidth

5. Business owner who wants to change

6. Change agent to drive day-to-day

Basic IT capabilities & commitment to support

7 critical success factors to get business value from AI

Ask these questions internally (or ask us to help!)

Make the opportunity tangible
with a concrete success story

- Don't reinvent the wheel for every use case - in terms of tech choices & architecture
- To scale value, expect changes in data management/infrastructure & supporting tools

Get organisational bandwidth

7. Basic IT capabilities & commitment to support



What constraint - that has been defining our business - is not valid anymore?

Don't be Adam!



BERLIN / HELSINKI / LONDON / MUNICH / STOCKHOLM / STUTTGART / TAMPERE

Contact information



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+358 50 5470386

Tuomas.Syrjanen@futorice.com

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PARTNERSHIP
TRACK**

**NORDIC
DATA
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IVAL
2024**

Merita Erkkilä

Senior Specialist

Ministry of Transport and Communications

SITRA

VTT

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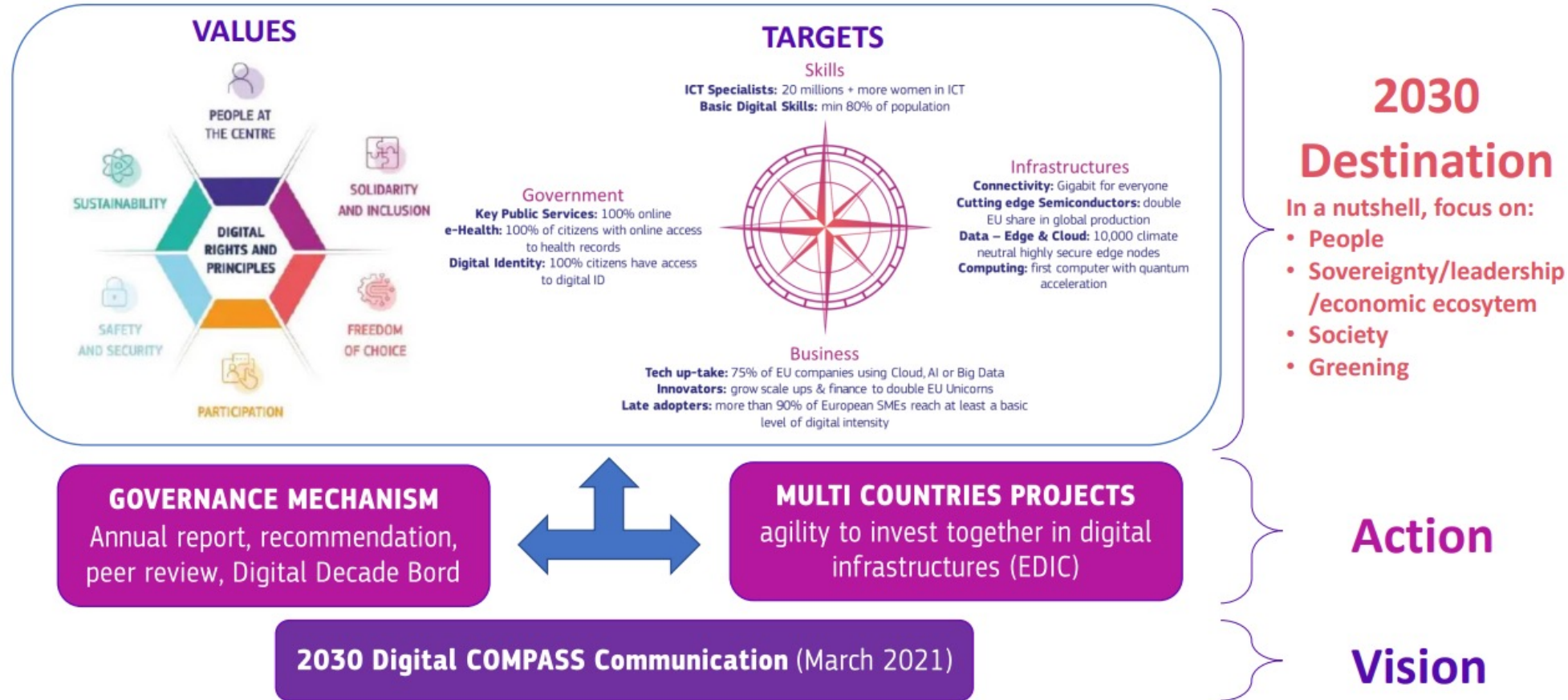
MINISTRY OF TRANSPORT
AND COMMUNICATIONS

Finland's Digital Compass and Data Spaces

Nordic Data Festival 2024

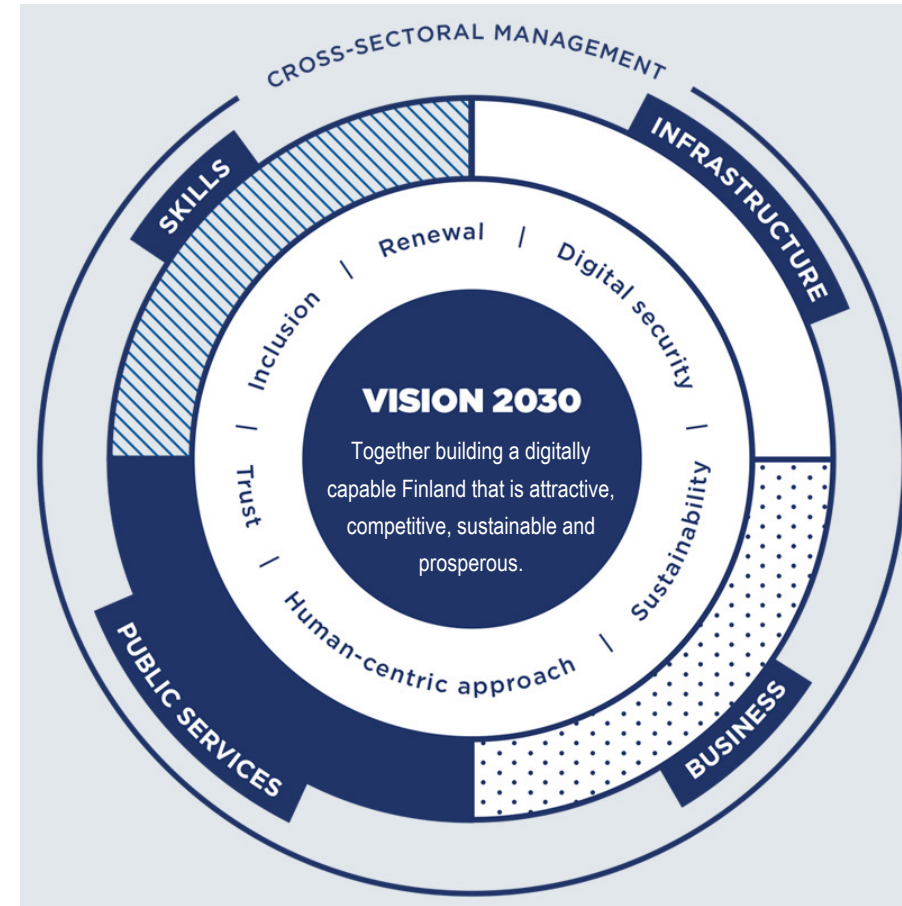
Merita Erkkilä, Senior Specialist
Ministry of Transport and Communications

A Digital Decade to shape EU's transformation



The Digital Compass points the way for Finland in global development

- Finland's Digital Compass is a strategic development plan for 2030.
- The cross-sectoral approach to digitalisation: comprises the national vision for 2030, the values on which the development of Finland's digitalisation is based, and the prioritised objectives in four areas and in cross-sectoral management.
- The implementation plan contains measures for achieving the Digital Compass' objectives.



Digital infrastructure



4. Data interoperability structures (data spaces)

Effective implementation of EU data and digital regulation

A situational awareness and roadmap for developing data interoperability structures

Prioritised data spaces:
 - Health and social services data
 - Mobility
 - Digital product passport
 - Competence
 - Copyright

5. Cybersecurity

Ability of public authorities to respond to cyber threats
 - Cybersecurity strategy
 - Exchange of information between authorities

Security of critical information systems and networks
 - Information security requirements of different sectors
 - New technologies
 - Critical data resources, services and systems

Cyber Security Development Programme
 - Ecosystem development
 - Quantum calculation
 - Exercises

6. Well-functioning and sustainable digital infrastructure

Quality and availability of communications
 - Spectrum policy
 - Possible new broadband construction aid scheme
 - Submarine cable connections

The Kvanttinova piloting environment for microelectronics and quantum technology

EuroHPC

Finland's National Space Situational Awareness Centre

Preconditions for a sustainable digital transition

Assessment of the repair backlog for digital and data infrastructure

OBJECTIVES IN THE REPORT:

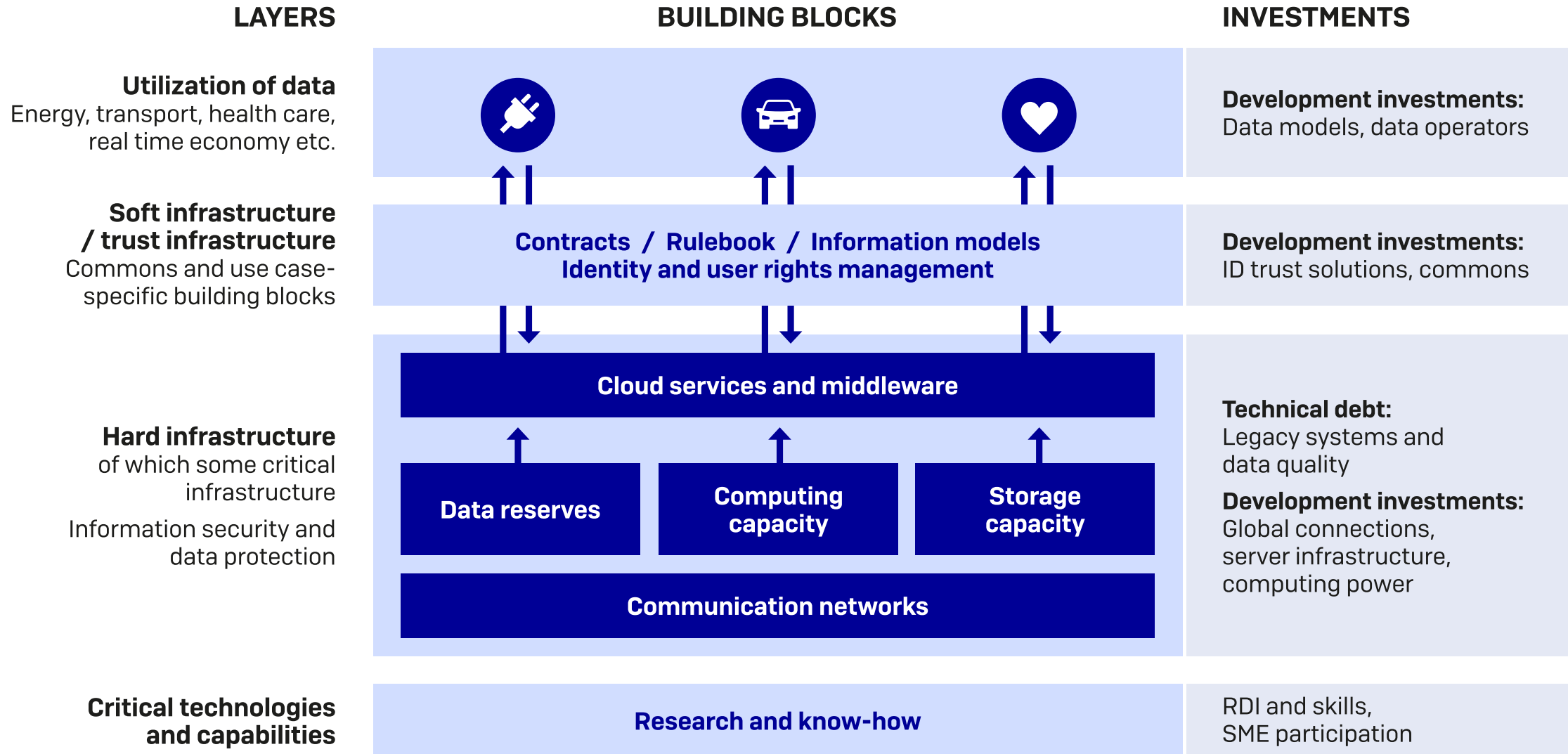
The Finnish data economy is a global pioneer in 2030.

Finland has a **critical infrastructure with a high level of cyber resilience** and a strong international **cyber industry ecosystem**.

Finland has **comprehensive, secure and resilient telecommunications infrastructure** as well as server and computing infrastructure.



The building blocks of the data economy



Towards a Digital Single EU Market

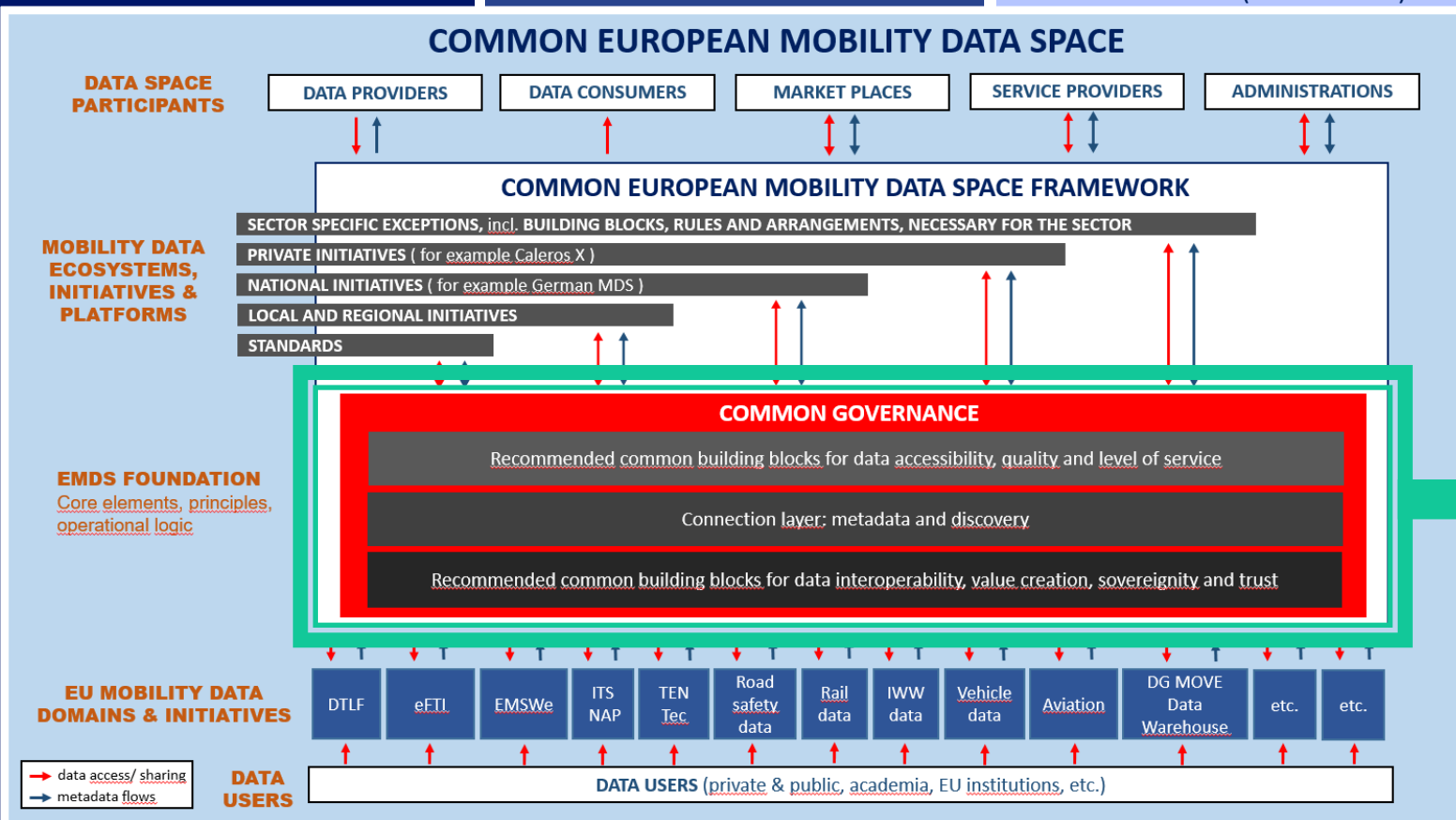


STRATEGIC FRAMEWORK

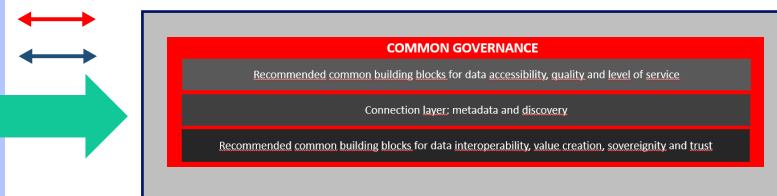
DIGITAL OPERATING ENVIRONMENT (GENERAL)

SECTOR SPECIFIC REGULATION & INITIATIVES (TRANSPORT)

OTHER SECTOR SPECIFIC DATA SPACES



- All EU data spaces should have the same core, basic structure, operating principles and logic
- All data spaces must be fully compliant and in line with the EU's strategic framework and general regulation on digital operating environment, with as few sector specific exceptions as possible

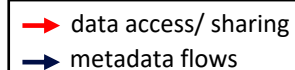


- This will ensure
 - Interoperability
 - Data use across sectors
 - Proliferated development of new technologies, solutions and services
 - Continued digital transition
 - Market predictability
 - Strong investments
 - Continued innovations

- ▶ GREEN DEAL
- ▶ DIGITAL AND DATA STRATEGIES
- ▶ SUSTAINABLE AND SMART MOBILITY STRATEGY
- ▶ FIT FOR 55
- ▶ TEN-T GUIDELINES
- ▶ FRAMEWORK FOR URBAN MOBILITY
- ▶ RAIL FREIGHT CORRIDORS

- ▶ DATA ACT
- ▶ DATA GOVERNANCE ACT
- ▶ DIGITAL MARKETS ACT
- ▶ DIGITAL SERVICES ACT
- ▶ ARTIFICIAL INTELLIGENCE ACT
- ▶ OPEN DATA DIRECTIVE

- ▶ MULTIMODAL DIGITAL MOBILITY SERVICES
- ▶ ITS DIRECTIVE (inc. MMTIS, RTTI,...)
- ▶ eFTI
- ▶ EMSW
- ▶ Mobility Data Act
- ▶ Alternative Fuels Infrastructure
- ▶ TEN-T





LIIKENNE- JA VIESTINTÄMINISTERIÖ
KOMMUNIKATIONSMINISTERIET

Thank You!

We welcome You to Helsinki again in November!

lvm.fi/en

digitoimisto@gov.fi digioffice@gov.fi

**NORDIC
DATA
FEST
IVAL
2024**

Janne Lautanala

Chief Ecosystem and Technology Officer

Fintraffic

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Traffic Data Ecosystem Overview

Nordic Data Festival

April 10, 2024

Janne Lautanala

Fintraffic



CONTACT ME

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[@JanneLautanala](https://twitter.com/JanneLautanala)



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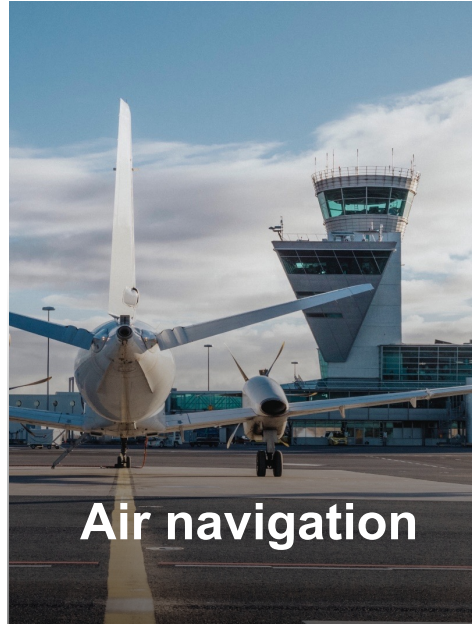


Fintraffic manages and controls traffic and traffic related data in all modes of traffic



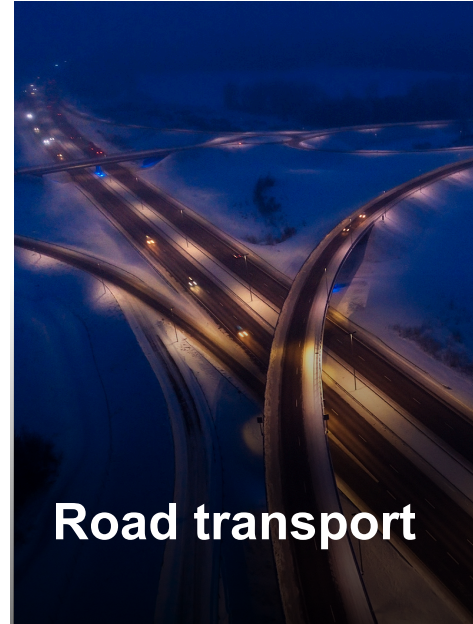
Railway traffic

- More than 500,000 trains each year
 - More than 82 million passengers
 - Rail network 6500 km
-



Air navigation

- Air navigation services at 22 airports
 - 206 000 operations in regional air traffic control every year.
 - 137,000 at Helsinki Airport
-



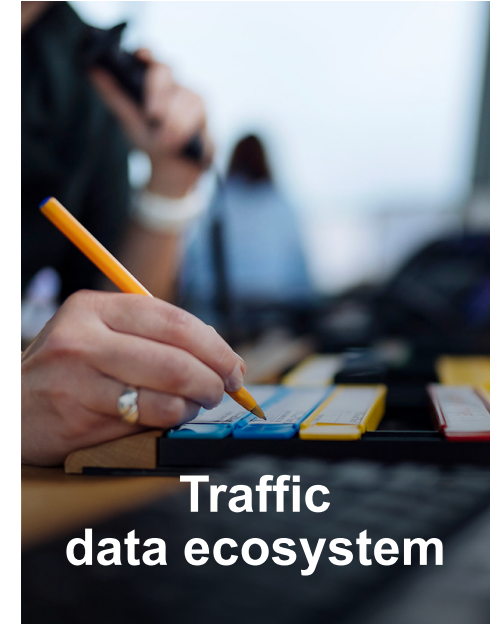
Road transport

- Roads carry 90% of passenger transport in Finland
 - More than 120 million km driven in vehicles every day
 - Road network 78,000 km
-



Maritime traffic

- 94% of exports, 91% of imports by sea
 - Nearly 30,000 international traffic vessel visits annually
-



Traffic data ecosystem

- Fintraffic App & Liikennetilanne.fi
 - Matka.fi
 - Junalohdot.fi
 - The data will be utilised in services provided by Google Maps, Waze, Apple, HERE and HSL
-

WHY?



Digitalization of Traffic is an effective tool

in building sustainability and productivity



70%



Growth forecast for Global traffic market by 2030*

13%



of companies' and households' money is spent on logistic and traffic costs

20%



of emission are caused by traffic. We need to cut the emissions to half by 2030

Digitalization offers a unique possibility to:

•For participants:

- Cost reduction due to analysis, optimization, automatization, joint development
- Open innovation and learning
- create growth to the industry, to support Finland's competitiveness

•For society:

- create better and equal traffic and logistic services for customers
- build a more effective traffic system, cut down traffic related costs and cut down emissions

45 000 000 000 €

annually

According to the EU's strategy on Industrial and commercial data, cross-border use of traffic data is expected to create an additional EUR270 billion in GDP for EU Member States by 2028
400 data sharing ecosystems exist within the EU in the mobility sector - EIT Urban mobility

Finland's share scaled

~500 000 000 €

Annually in safety, smoothness, pollution reduction, cost reduction, increased revenue, new business models...

...Of which Fintraffic's share

~40 000 000 €

Annually in safety, smoothness, pollution reduction, cost reduction, increased revenue, new business models...

WHAT?





HOW?



Fintraffic's online and mobile traffic services

MAKE USE OF FINTRAFFIC TRAFFIC SERVICES




TRAFFIC USERS

Are you setting out on a journey by car, train, ship, plane, tram, metro or bus? Fintraffic's browser and mobile solutions for traffic make your journey easier than ever.



TRAFFIC PROFESSIONALS

With Fintraffic's online and mobile services for professionals, traffic is safe and smooth – whether your work has you on the road, on tracks, on water or in the air.



TRAFFIC APPLICATION DEVELOPERS

Transport developers - you can find all the information you need about Fintraffic's open data, the developer community and the utilisation of our interfaces.

Our traffic services for all traffic users, traffic professionals and application developers are available on the fintraffic.fi website

Data can answer multiple questions

Rail traffic

- Is my train on schedule?
- Where is my train right now?
- Which train can take me from A to B at time C?
- Which trains are the next to arrive and depart on station X?
- Which types of cars is my train composed of?
- What services do these cars provide?
- Was my train on schedule two months ago?

Road traffic

- What are the road weather conditions like right now? How about 3 hours from now?
- When was the road last plowed?
- Where are the road maintenance vehicles right now and what are they doing?
- Are there any incidents or roadworks affecting my planned route?
- Is traffic flowing normally?
- How is the traffic flowing now in comparison to yesterday / last month / last year.

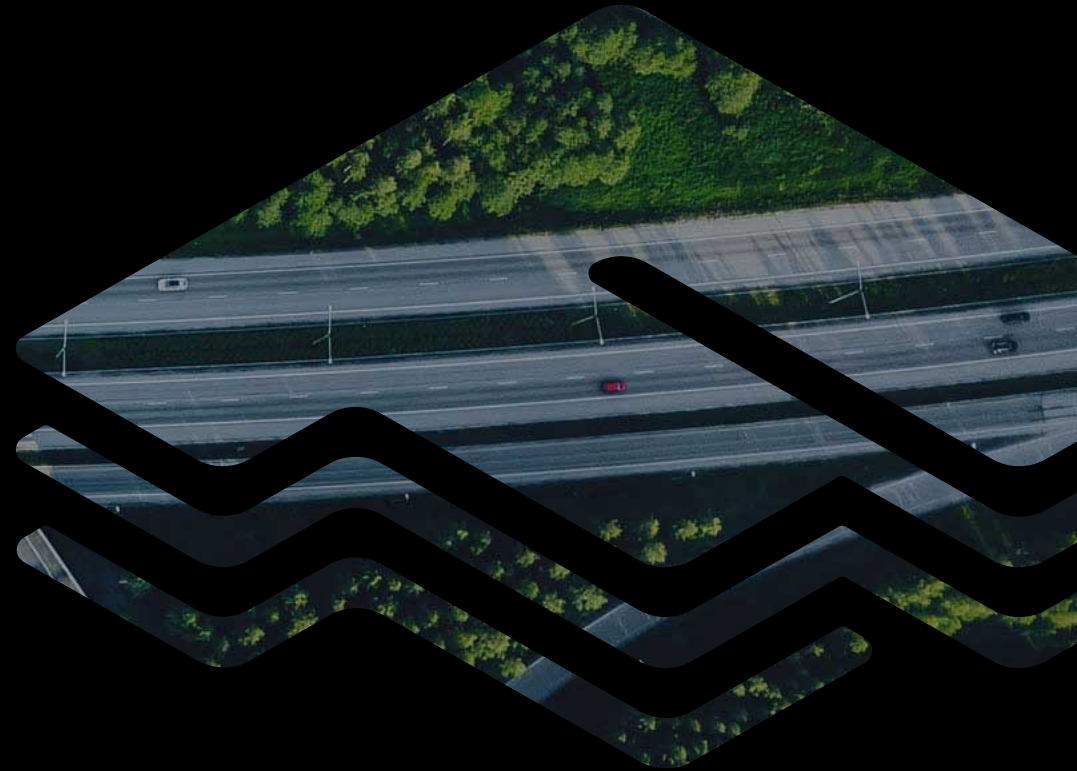
Maritime traffic

- What vessels are in harbour X at this time?
- Which vessels are arriving / departing next and when?
- Where is the vessel right now?
- What kind of vessel is that?
- Are there any active warnings for marine traffic?
- Are there any disturbances in marine traffic?
- Are the aids of navigation working properly?



~10B
API Calls / Year

users include e.g. Google, HERE, Apple, PTAs etc.



Collaboration is Key: Traffic Data Ecosystem

- **We are developing the future of traffic**, where one major goal is to create a Finnish network of traffic operators **making the most effective use of data**, a network unique in the world.
- We have invited **more than 200 leading mobility organizations (including operators, authorities, academia, service providers, cities, ports etc.)** to create
 - **Efficiencies for operations**
 - **innovative data-share and data-use solutions** and a **fair digital operating environment** within an open data ecosystem.
 - **competitive and scalable traffic and mobility services** for both Finnish and international markets
 - **Key domains:** Logistics, mobility data, traffic information (situational awareness)
 - **Cost-efficient and scalable platforms and solutions** that will enable safe, low-emission and user-oriented travel and transport chains that combine different modes of transport.
 - fintraffic.fi/liikenteenekosysteemi
fintraffic.fi/en/trafficecosystem



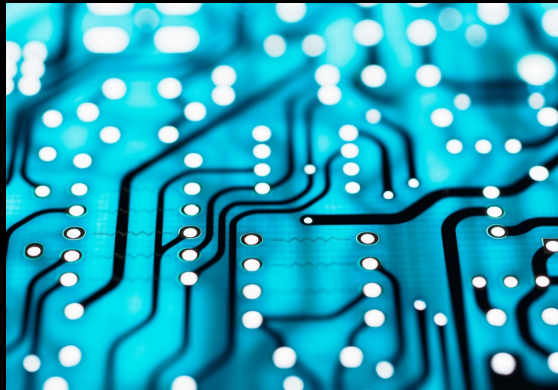
The building blocks for traffic data ecosystem

Collaboration



- Shared vision and goals
- Joint development
- Joint investments
- Governance & Coordination

Data & infrastructure



- Technical infrastructure
- Standard Data Models
- Standard APIs
- Shared services

Rulebook



- Business models
- Fair Data economy rules & agreements
- Agreement templates
- Conventions



Sample Accomplishments

- Established and working governance model for traffic data ecosystem
- Shared vision for traffic data economy
- Target state architecture definition for traffic data
- **Traffic Data Economy Rulebook**
(<https://www.fintraffic.fi/en/rulebook>)
- Definition of data standards to be used.
- Number of implementations and pilots.

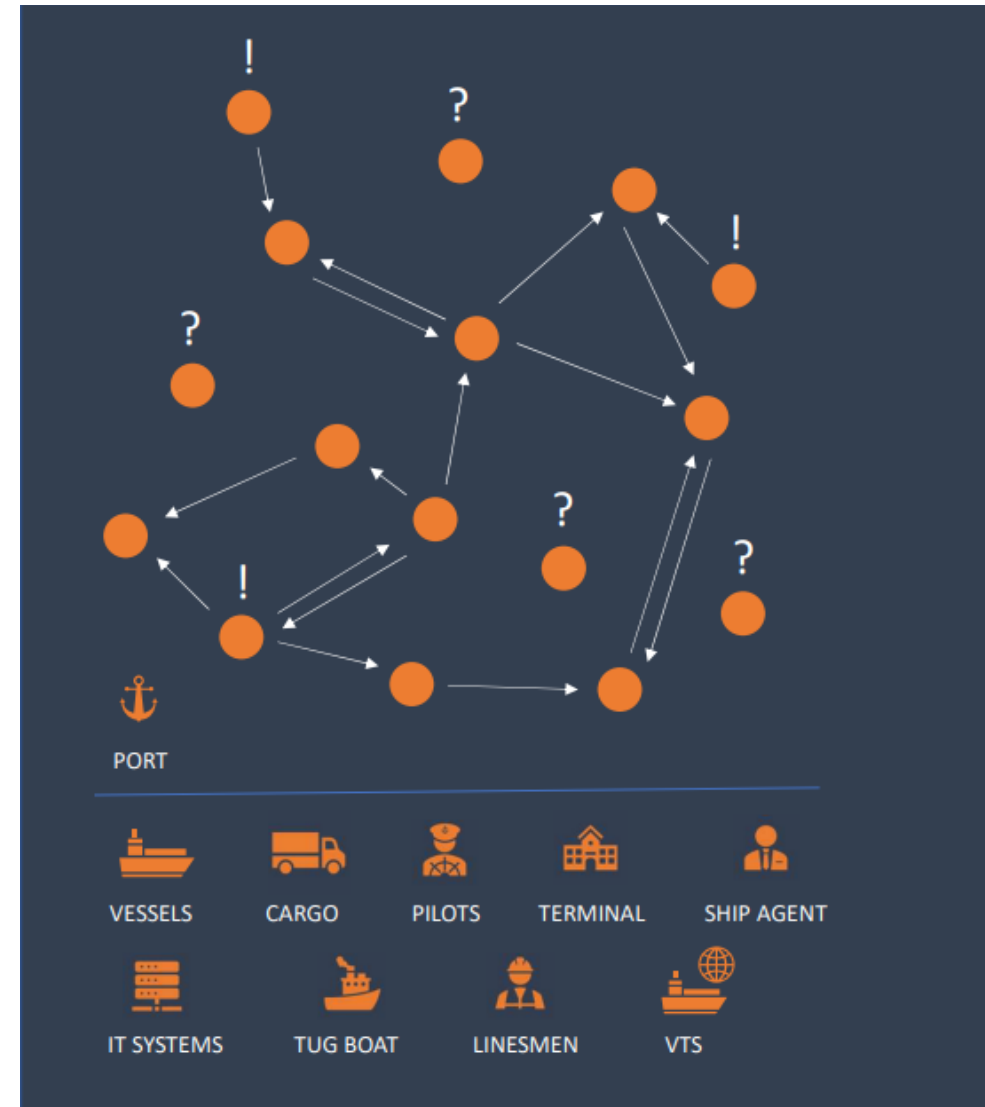


EXAMPLE USE CASE



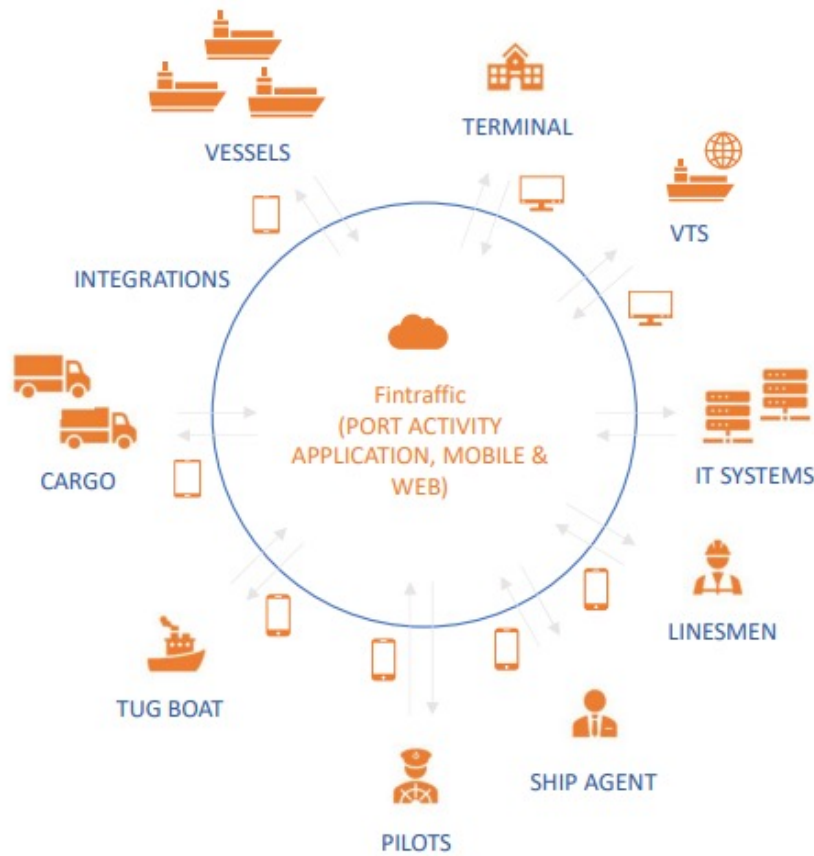
Example use case: Port collaboration - challenges

- **Plenty of IT systems** used, multiple points of unaligned information with no or limited data transfer
- **Need for vast amount of information** and communications back and forth between different actors
- **Lack of information and shared situational awareness**
- **No centralized place** or accessibility to reliable information
- **No comprehensive communication system** across all parties and ability to react to unexpected events
- **Lot of manual work and inefficiency**



Solution: Fintraffic Port Activity Application

Application for data sharing, enhanced collaboration, and common situational awareness based on opensource solution

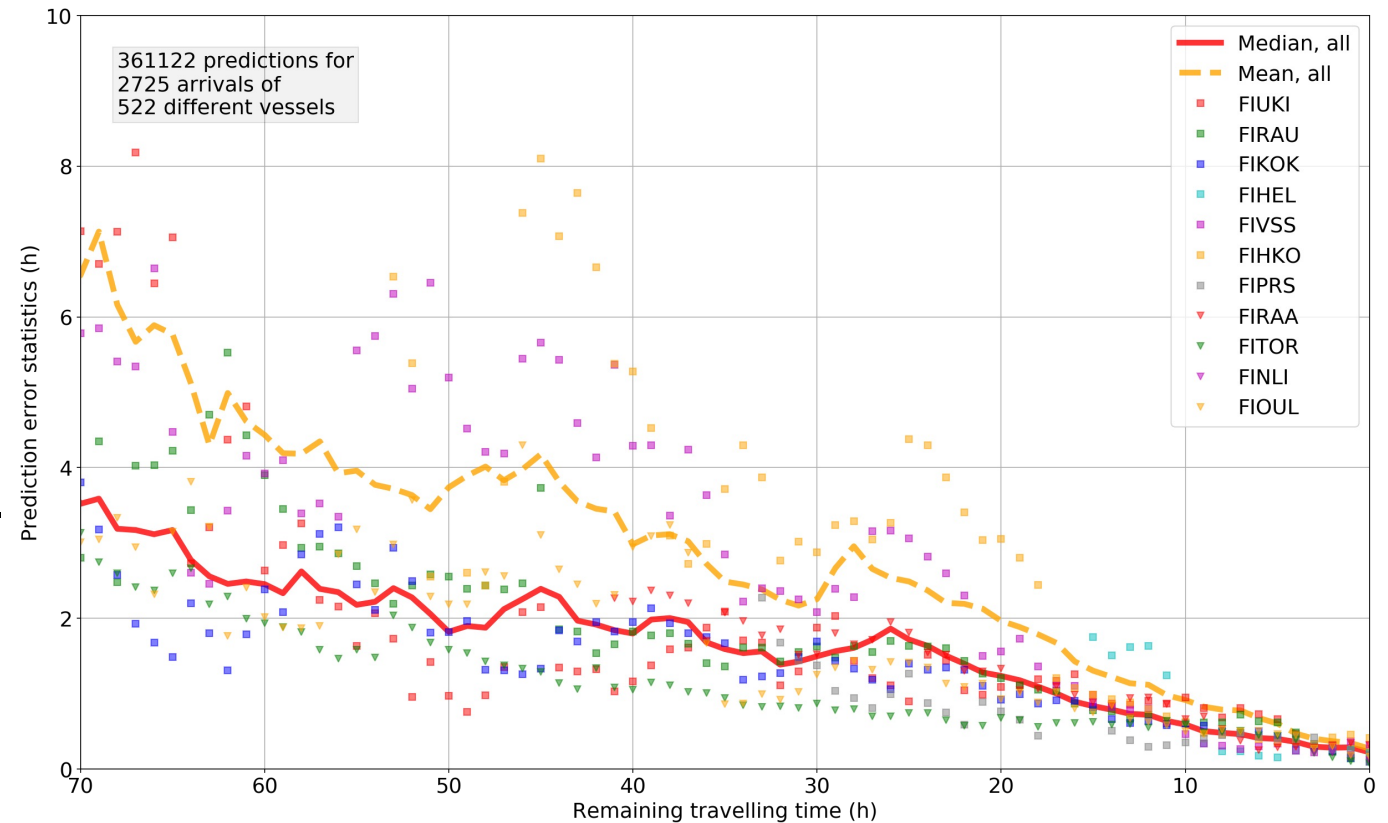


- **Virtual operation room** for port operations. Replaces complicated and manual port flow processes with automated and digitalized processes that utilizes IoT, Machine-to-Machine communications and modern integration and AI technologies.
- Creates one **centralized place for up-to-date situational awareness data**, offering full visibility over the whole port operation process and schedules
- **Integrates existing systems and data sources**, both public and private, and taking full advantage of the existing systems



Vessel arrival estimation service provides realtime estimates for all stakeholders

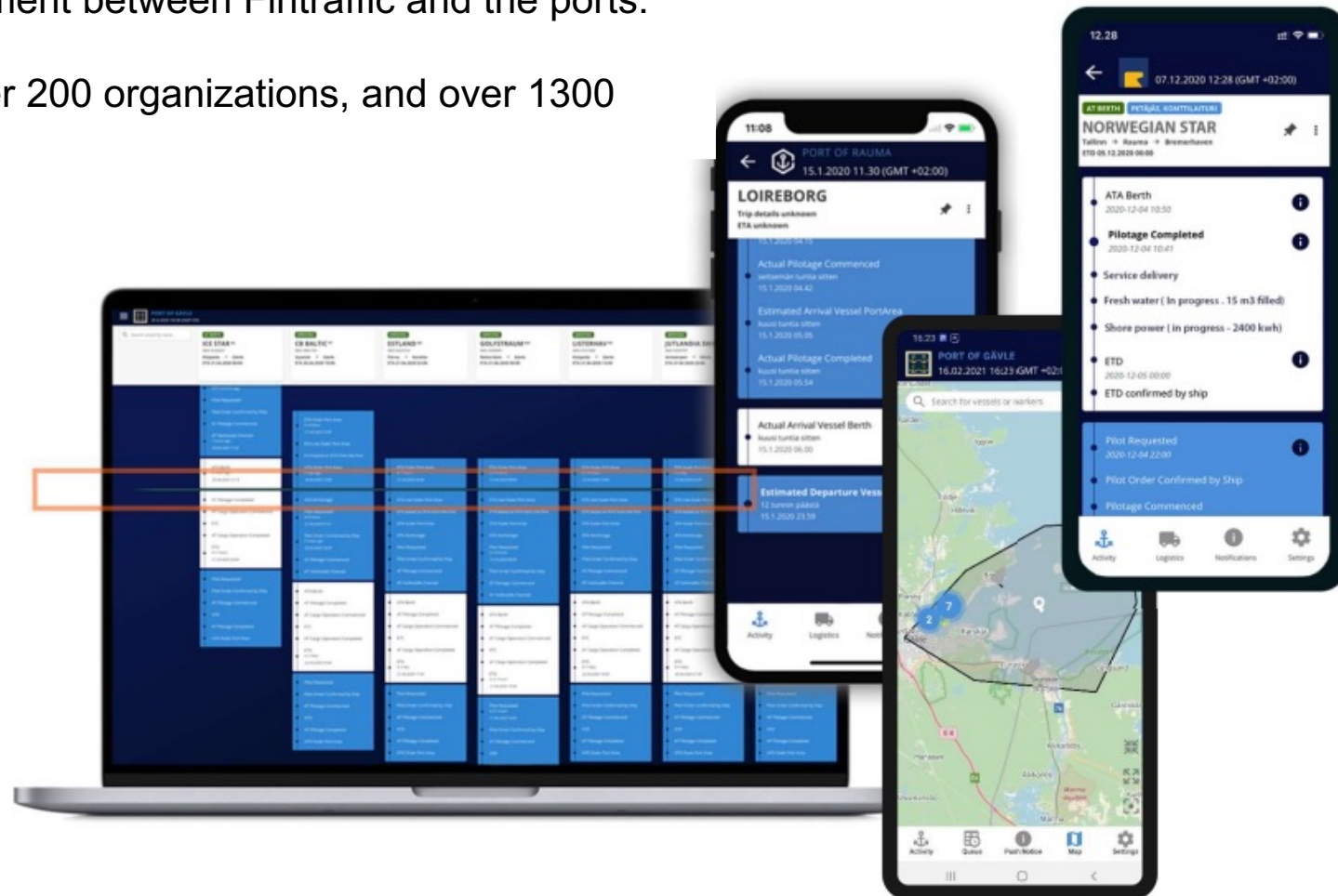
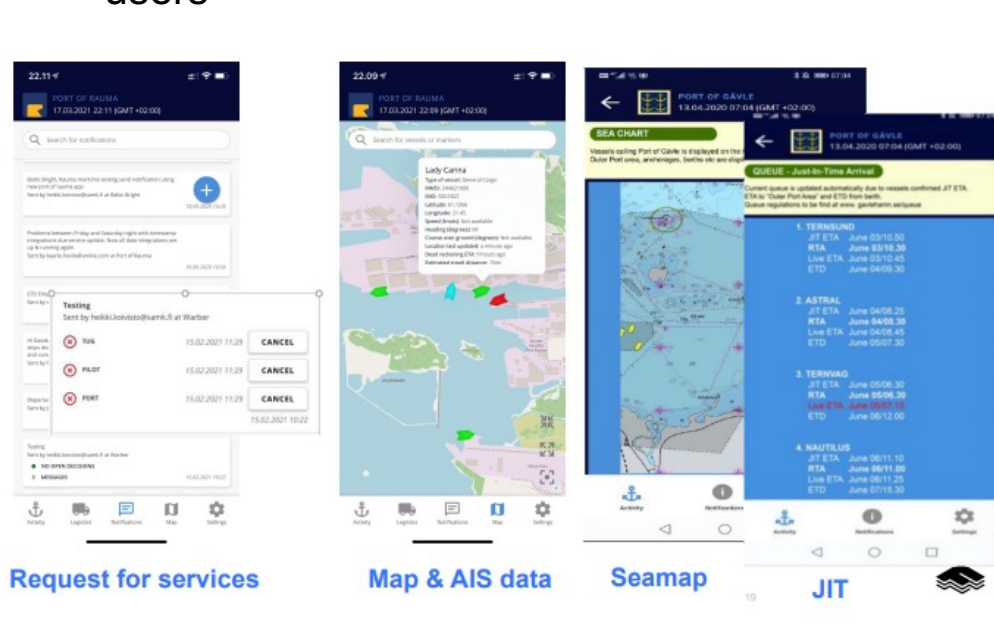
- Vessel ETA estimation services provides Estimated Time of Arrival (ETA) to vessels arriving to Finnish ports (ETB).
- Estimates are refined every 5-30 minutes (depending on AIS data availability) and made more accurate.



The end users use Port Activity through mobile and web

Each port has its own view - ports manage the rights to use their own view. The application's use is based on a user rights agreement between Fintraffic and the ports.

Currently, the application is used by 23 ports, over 200 organizations, and over 1300 users



Co-operation and utilizing linked data is more important than ever!

- **Share your data** utilizing Traffic Data Ecosystem Rulebook
- **Bring us ideas** how to improve data with new use cases
- **Join our data ecosystem**
<https://www.fintraffic.fi/en/trafficecosystem>
- **Come and talk to us!**



Need more information?



- Please do not hesitate to contact us:

Chief Ecosystem and Technology Officer

Janne Lautanala

Janne.Lautanala@fintraffic.fi

Tel: +358 40 772 5355

<https://www.fintraffic.fi/en/trafficecosystem>



Talk to my AI Twin



Speak to AI Janne



<https://www.speak-to.ai/janne>



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Krister Lindén

Research Director

University of Helsinki

SITRA

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EUROPEAN LANGUAGE DATA SPACE



The importance of language data for developing language-based AI in Europe

Krister Lindén (University of Helsinki, Finland)
Krister.linden@helsinki.fi

10-04-2024 LDS Country Workshop, Helsinki, Finland
<https://language-data-space.ec.europa.eu>



BUSINESS

ChatGPT Shows Just How Far Europe Lags in Tech

Analysis by Lionel Laurent | Bloomberg

February 21, 2023 at 2:12 a.m. EST



Comment 1



Gift Article



Share

Europe is where ChatGPT gets regulated, not invented. That's something to regret. As unhinged as the initial results of the artificial-intelligence arms race may be, they're also another reminder of how far the European Union lags behind the US and China when it comes to tech.



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Global LT/NLP Market is exploding: 439 B\$ by 2030



Natural Language Processing Market Size, Share & Trends Analysis Report By Component, By Deployment Model, By Enterprise Size, By Type, By Application, By End-use, By Region, And Segment Forecasts, 2023 - 2030

Report ID: GVR-4-68040-020-4 | Number of Pages: 100 | Format: Electronic (PDF)
 Historical Range: 2017 - 2021 | Industry: [Technology](#)

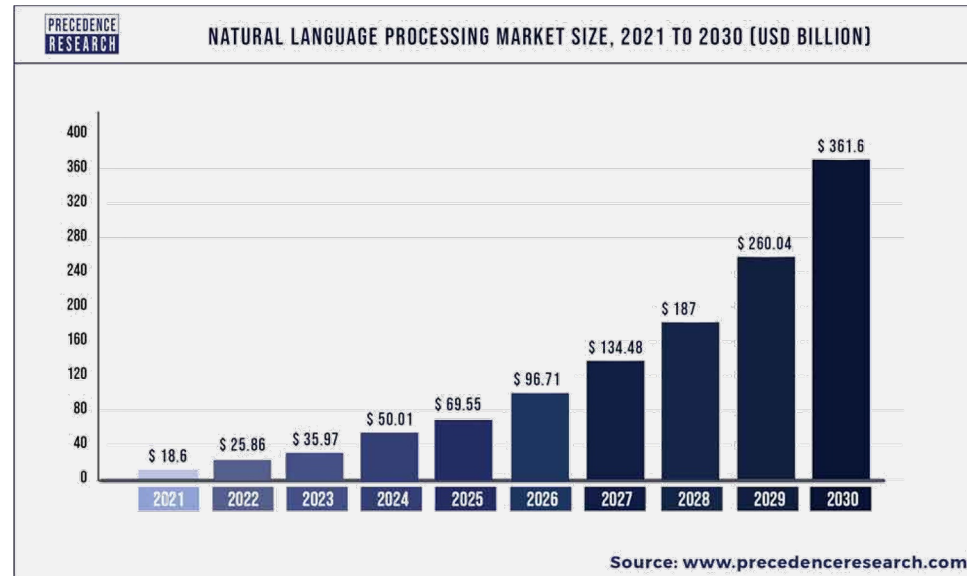
<https://www.grandviewresearch.com/industry-analysis/natural-language-processing-market-report>

Report Attribute	Details
Market size value in 2023	USD 40.98 billion
Revenue forecast in 2030	USD 439.85 billion
Growth rate	CAGR of 40.4% from 2023 to 2030
Base year for estimation	2022
Historical data	2017 - 2021
Forecast period	2023 - 2030
Quantitative units	Revenue in USD million and CAGR from 2022 to 2030

Players leading the NLP market include-

- 3M Co. (US)
- IBM Corporation (US)
- Hewlett-Packard Co. (US)
- Oracle Corporation (US)
- Apple Inc. (US)
- Microsoft Corporation (US)
- SAS Institute Inc. (US)
- Dolby Systems Inc. (US)
- Verint Systems Inc. (US)
- Net base Solutions Inc. (US)

All US!

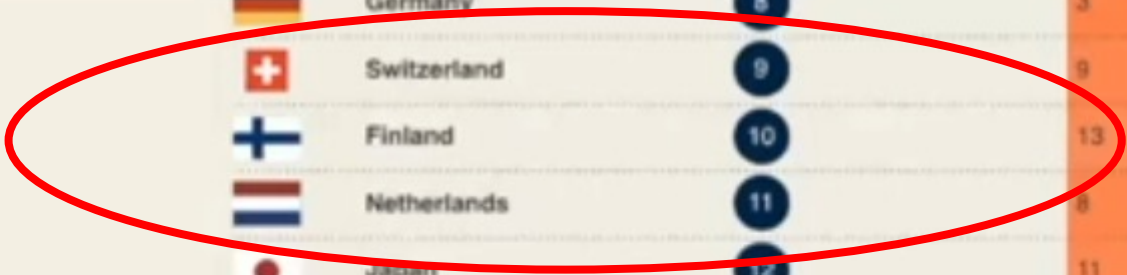


Without a decisive intervention by the EU, Europe will be pushed further to the side lines in the global NLP market.

AI Sweden launched an AI Strategy for Sweden on March 27, 2024

En AI-strategi för Sverige

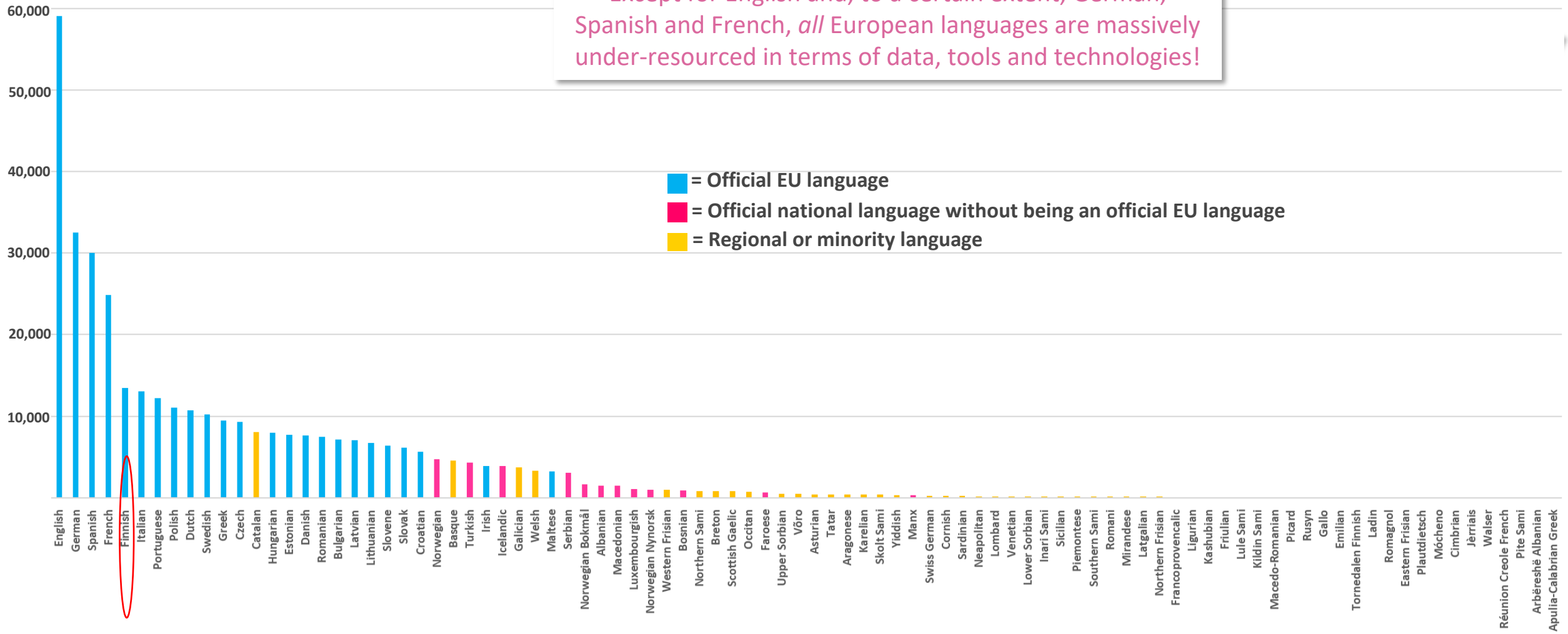
	Overall	Talent	Infrastructure	Operating Environment	Research	Development	Government Strategy	Commercial
United States	1	1	1	28	1	1	8	1
China	2	20	2	3	2	2	3	2
Singapore	3	4	3	22	3	5	16	4
United Kingdom	4	5	24	40	5	8	10	5
Canada	5	6	23	8	7	11	5	7
South Korea	6	12	7	11	12	3	6	18
Israel	7	7	28	23	11	7	47	3
Germany	8	3	12	13	8	9	2	11
Switzerland	9	9	13	30	4	4	56	9
Finland	10	13	8	4	9	14	15	12
Netherlands	11	8	16	15	10	13	28	20
Japan	12	11	5	10	20	6	18	23
France	13	10	11	25	15	18	13	10
Sweden	14	2	59	12	30	21	38	13
Australia	15	14	44	62	6	16	14	22



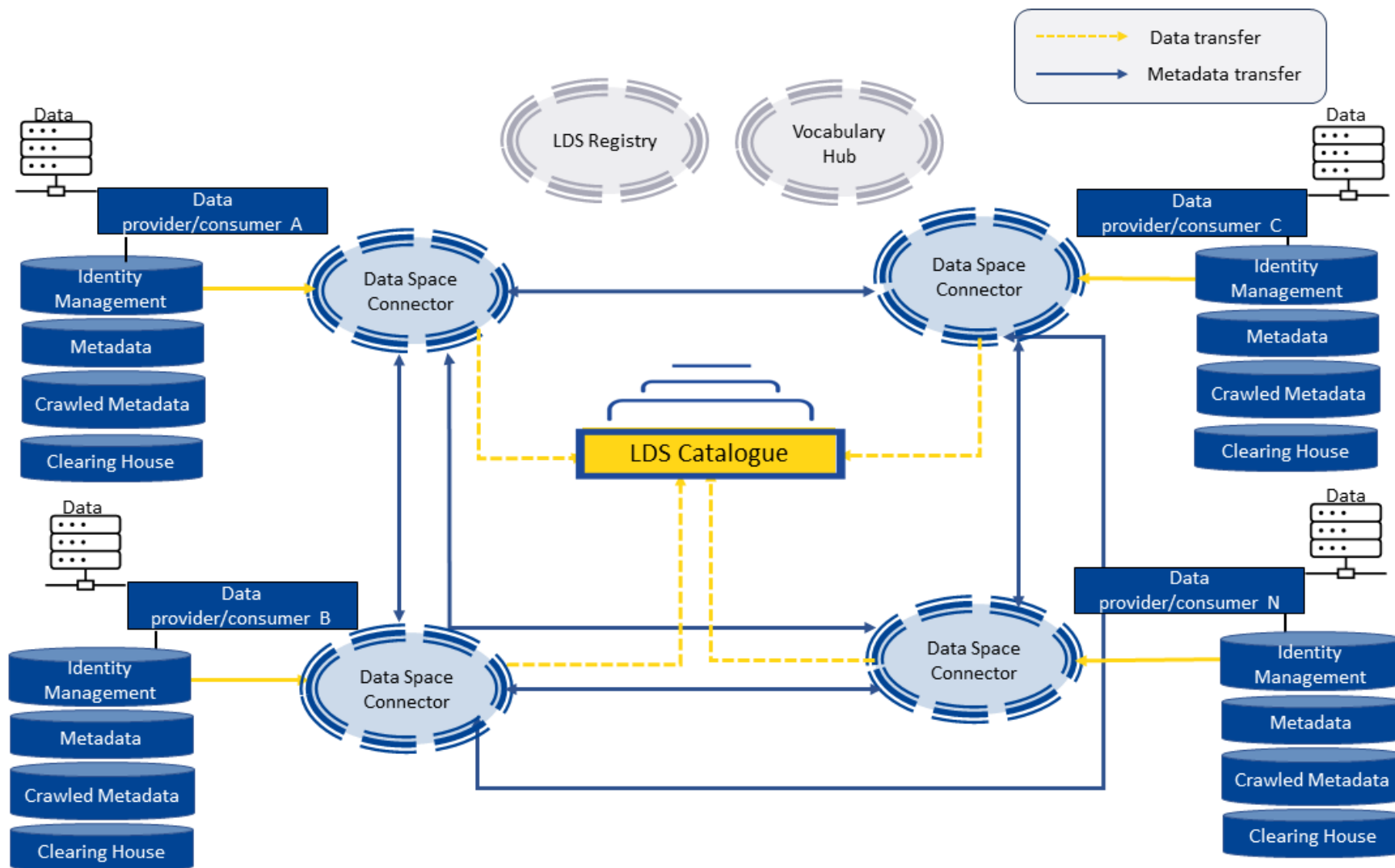
Sweden on 17th place

Digital Language Equality?

Except for English and, to a certain extent, German, Spanish and French, *all* European languages are massively under-resourced in terms of data, tools and technologies!



The European Language Data Space – Decentralised Architecture



Collaborations (selection)

- **Data Space Support Centre** (Digital EU; Community of Practice; Thematic Groups; Expert Groups)
- **OpenGPT-X** (Gaia-X; BMWK, Germany)
- **HPLT** (EU Horizon Europe)
- **DataBri-X** (IDSA; EU Horizon Europe)
- **European Language Grid (ELG)** – currently supported through OpenGPT-X, SciLake, DataBri-X – legal entity work in progress
- **European Language Equality (ELE, EU PP/PA project)**
- **INESData** (new language data space project in Spain; 65% of the 5M€ funding for industry for development of actual platform)
- **SciLake** (EOSC; EU Horizon Europe)

European strategy for data

- *“Data is an essential resource for economic growth, competitiveness, innovation, job creation and societal progress in general”* (cf. <https://digital-strategy.ec.europa.eu/en/policies/strategy-data>)

What’s in the LDS for data and technology holders?

- The **European Language Data Space** can
 - facilitate data acquisition and provision
 - through its **platform for language resources, language models and services**
- **Data holders** can monetise their data, software and services through the LDS

An official website of the European Union. How do you know? [View](#)

European Commission English Search


European Language Data Space

Home About News Events Help


European Language Data Space
Data for everyone - Share, Connect, Benefit.

[Subscribe to the LDS Newsletter >](#)


Unleash the potential of data – for EU citizens, industry and the public.



Share
You will be able to share and monetise your language data, language models and other language resources through a single platform, taking European values and compliance with EU regulations fully into account.



Connect
You will be able to connect and exchange with other stakeholders through the European Language Data Space.



Benefit
You will be supported by the European Language Data Space in the development of multilingual and multimodal language technologies and language-centric AI.

Latest News

13 June 2023
What is a Data Space?
Find out more about the concepts behind Common European Data Spaces.

7 June 2023
LDS at META-FORUM 2023
The second ELE Conference will take place in Brussels on 27 June.

6 June 2023
LLM workshop review
The CONNECT University online session on Large Language Models, co-organised by the European Language Data Space consortium, took place on 6 June.

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About



The Common European Language Data Space

On 19 January 2023, the service contract between the European Commission and a consortium of four partners on the creation and implementation of a Common European Language Data Space came into force.

The goal of this project is to establish a European platform and marketplace for the collection, creation, sharing and re-use of multilingual and multimodal language data.

With the European Language Data Space (LDS), relevant stakeholders, e.g., from the publishing, language technology or press industry, will be able to share and also monetise their language data and other language resources (e.g., language models) through a single platform, taking EU values and compliance with EU rules fully into account. As a result, the LDS will significantly increase the much-needed availability of quality data to support the creation and deployment of large language models (LLMs) and other AI-based language technology services for a range of businesses.

The creation of the LDS platform will represent a true turning point in the approach to the collection of language resources, as it will help the European industry to compete globally with the LT services provided by US companies, and to build trust throughout the language data sharing process.

The LDS Consortium, coordinated by the Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI) [\[2\]](#), includes the R.C. "Athena" with its Institute for Language and Speech Processing (ILSP) [\[3\]](#), the Evaluations and Language Resources Distribution Agency (ELDA) [\[4\]](#) and the technology and localisation company Tilde [\[5\]](#).

News (6)

Showing results 1 to 6

13 June 2023

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16 May 2023

Experience and Expertise

For the realisation of the ambitious goals set by the project, the LDS Consortium builds on the experience of its partners, which covers language technologies research and development – from data collection up to platform, infrastructure and processing aspects.

30 March 2023

Data Spaces Symposium 2023

The Data Spaces Symposium took place from 21 to 23 March 2023 in The Hague, and it was a resounding success. The event featured 150 expert speakers on five different stages and attracted over 700 visitors on the first day alone.

22 January 2023

The Common European Language Data Space

On 19 January 2023, the service contract between the European Commission and a consortium of four partners on the creation and implementation of a Common European Language Data Space (LDS) came into force.

<https://language-data-space.ec.europa.eu>

Join the panel discussion on

Language data production, management, and market development

on the 2nd floor in Room Tallberg at 13:50



Common European Language Data Space

Thank you!



A Common European Language Data Space – funded under contract LC-01936389 with the European Union.

Krister Lindén (University of Helsinki, Finland)
Krister.linden@helsinki.fi

10-04-2024 LDS Country Workshop, Helsinki, Finland
<https://language-data-space.ec.europa.eu>



A Common European Language Data
Space – funded under contract LC-
01936389 with the European Union.

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Matthias De Bièvre

CEO

Visions

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Public / Private data spaces



Public / private data spaces challenges

If it's not public / private,
it's not a data space.

Need to interconnect
existing data sharing
ecosystems.

From centralised to
decentralised / federated
governance and technical
architecture.

Public / private business
and governance models.

Towards common technical,
governance and business
layers.

Common rules, roles and
trust.

Hard but we need to do it!

What do we need?

Data sharing services to facilitate data sharing with trust

Open source components to ensure interoperability and trust



Committed organisations and people to connect their data and services and create next gen digital services

Governance and business models to make it last

Prometheus-X

Non profit established in 2021

Infrastructure providers
(19 partners)

Digital commons / building blocks
(20 BBs)



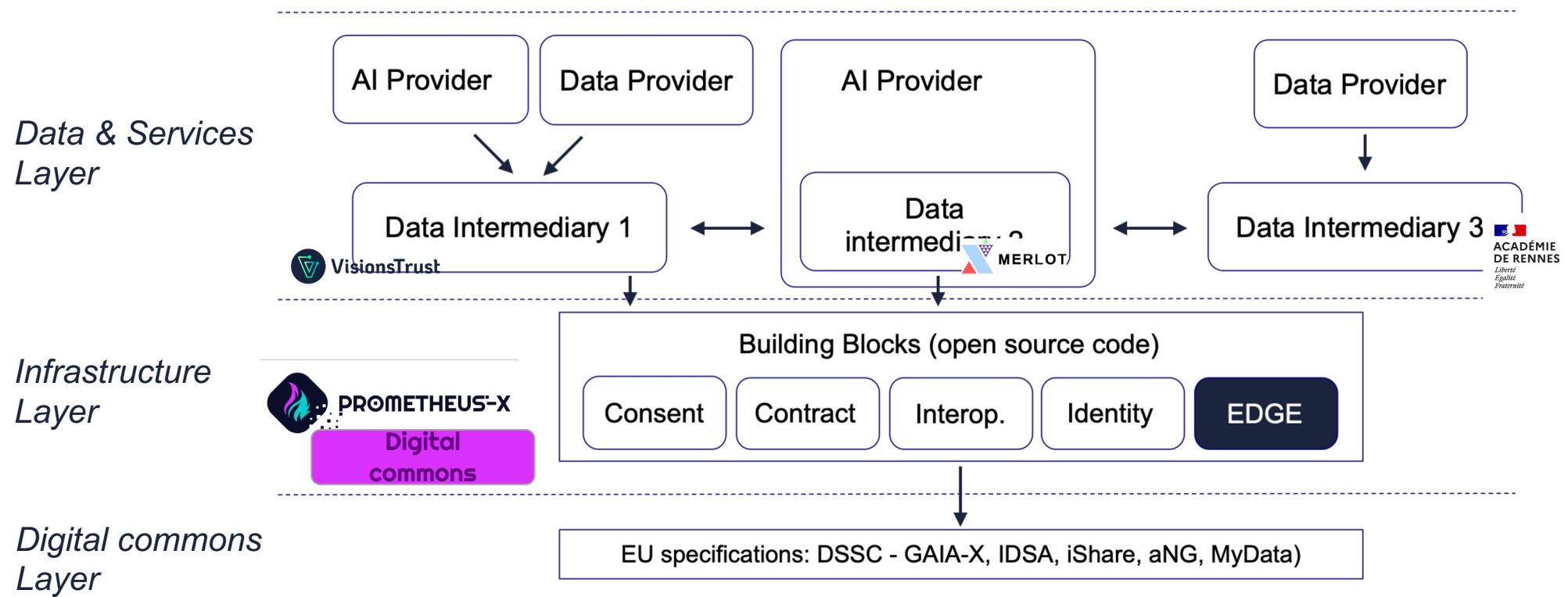
Use cases and participants in 3 sectors (skills, tourism, smart cities)
30 use cases registered
200 organisations
10 EU countries

Under one structure and governance to deploy, commercialise and maintain

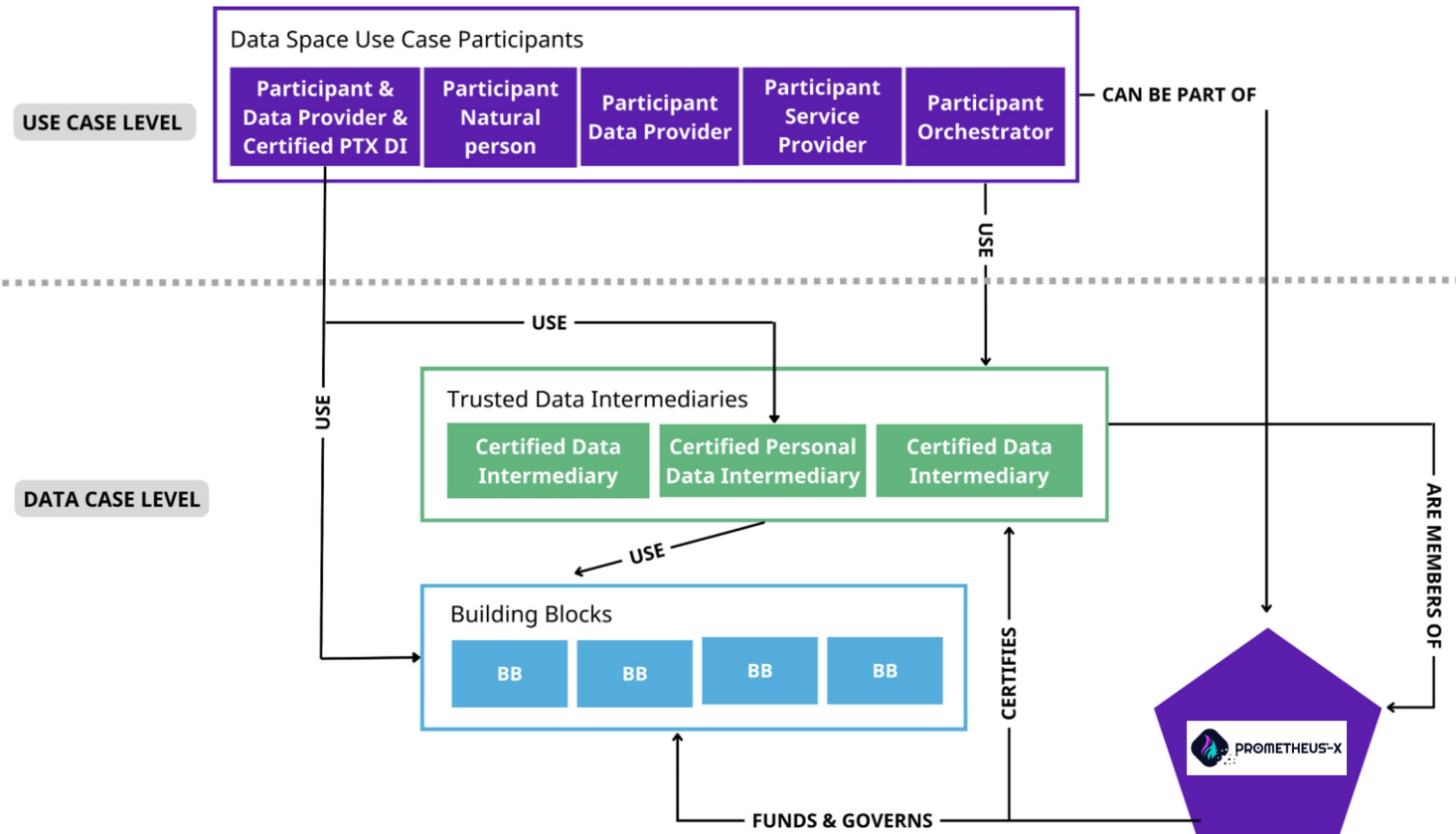
- + 23 m€ to launch
- + DG CNECT funding

Prometheus-X

General Architecture



Governance and business model of digital commons



Prometheus-X

Personal Data Intermediary

Human-centric data space

Each person can **choose their PDI**

The PDI **does not provide services on the data**

Any org connected to the data spaces can interact with the PDI to ask for data present in another org

All PDIs are **interoperable**

Each data source and user have **connectors** to the data space and to interact with PDIs and with each other

PDIs, Data sources and data users share a same **governance and digital commons**

Functionalities of connectors

Consent Management

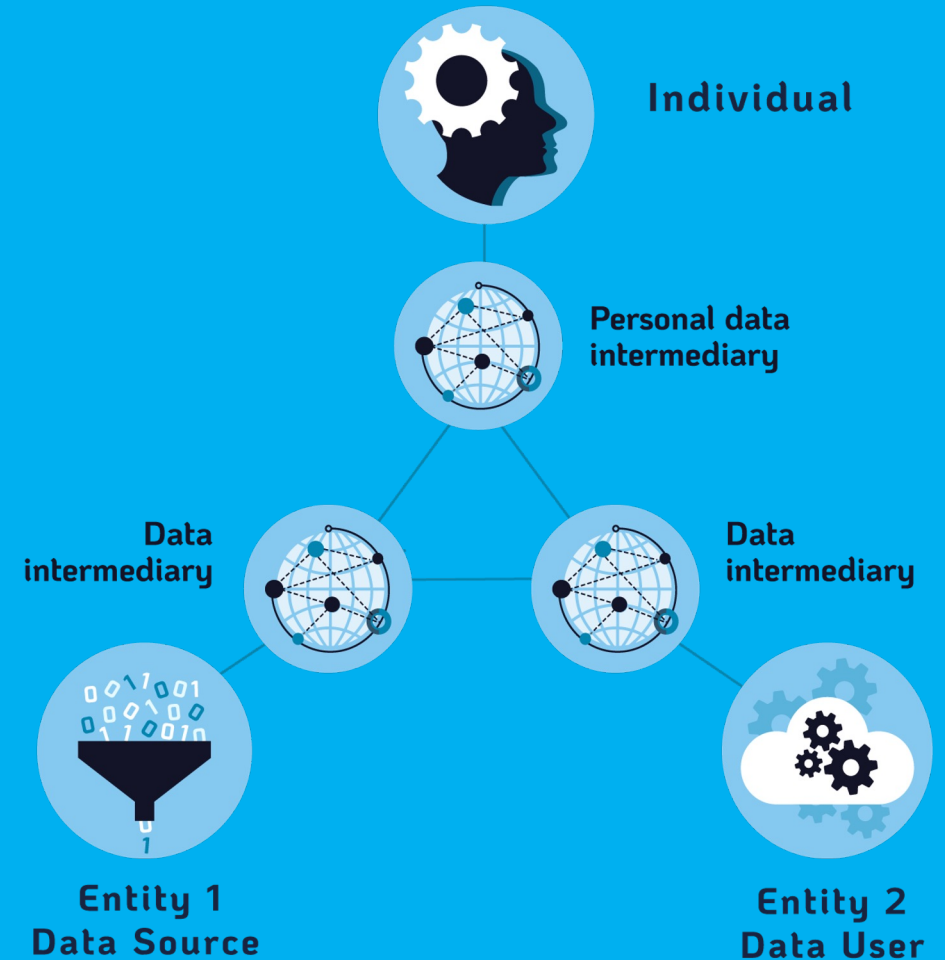
Contract Management

Identity Management

Interoperability Management

Catalog of data and services

Decentralized processing / AI training etc



Digital commons

Enable mutualisation and decentralisation

Enable decentralisation / federation.

No vendor lock in

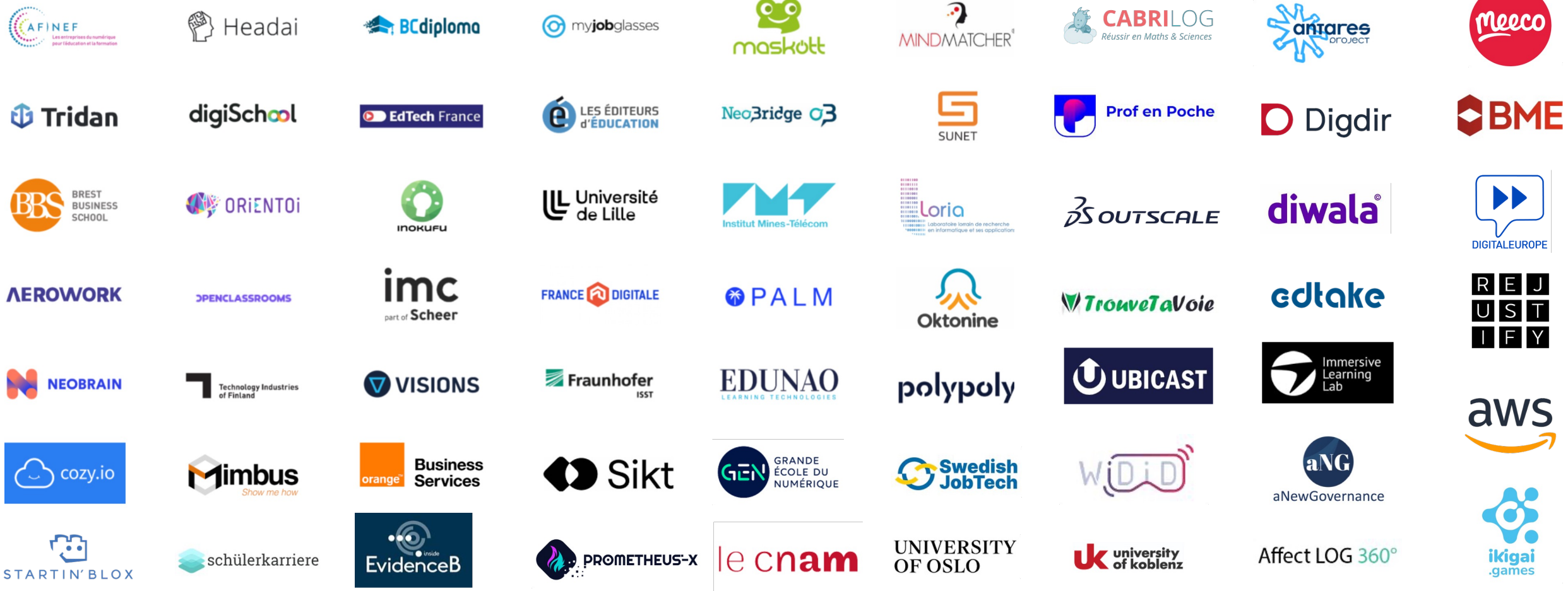
Enable common governance and business model.

Transparency and standardisation.

Enable common rules, roles and trust.

Only model that answers the challenges.

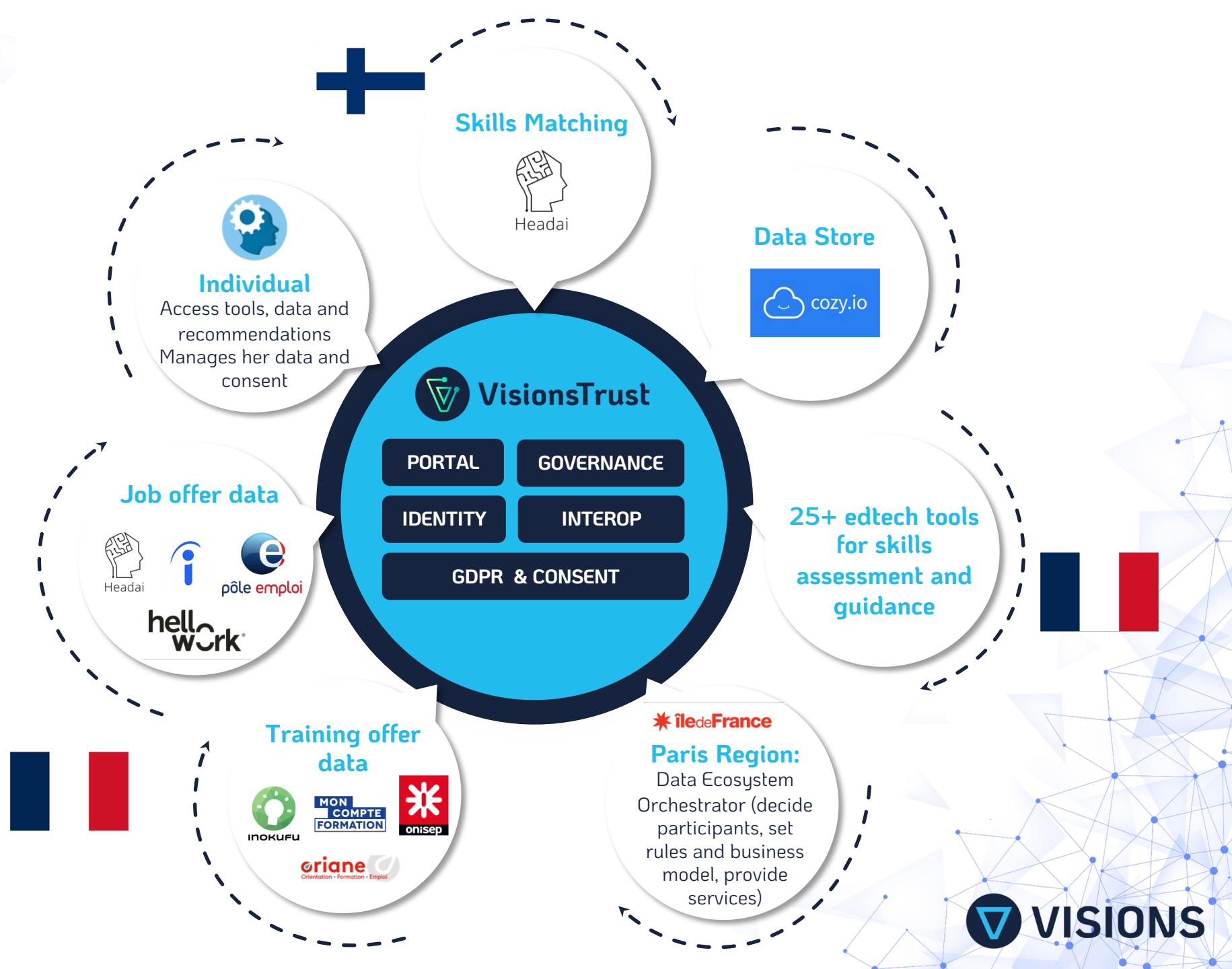
Skills data space partners



Prometheus-X Smart Cities partners



Paris Region Orientation Data Ecosystem



MyAI - 4 - Learning

Truly private and personalized and frugal learning assistant

Learner needs

- **personalized** exercises & answers,
- based on his **personal learning data**
- while preserving his **privacy**

AI service provider wants to :

- **tune its recommendations** while preserving privacy and IP
- with **energy-efficiency**

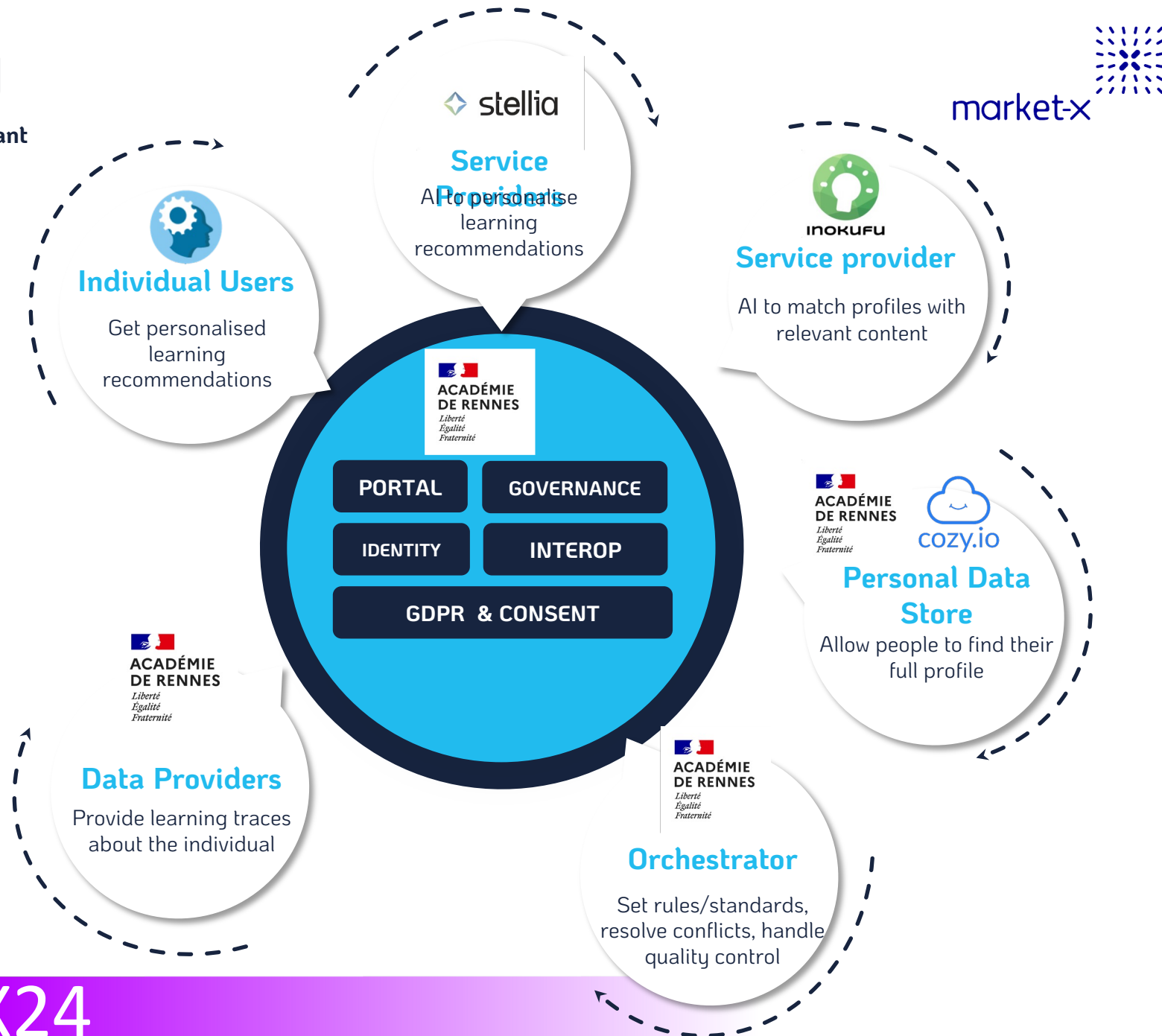
How to reconcile these contradictory requirements ??



Data interoperability



Private AI in a Personal Data Store



#GaiaX #MarketX24

Key public / private learnings

Need sponsors and
champions.

Need time

Need use case

Start small

Lobbying and standards

It's hard but we need to do it!

Next steps by the end of the year

20 BBs

30 use cases

Integration with Simpl

Validated governance and
business model

Let's do it commonly!

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Seth van Hooland

Policy Officer

AGRI.A4

Alexander Kotsev

Team Leader

Joint Research Centre of the European Commission

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NORDIC DATA FESTIVAL

DATA GOVERNANCE FOR THE AGRICULTURAL SECTOR

Opportunities and perspectives for the private sector

Joint AGRI-JRC presentation

10 April 2024

Seth van Hooland, Policy officer, DG AGRI.A4
Alexander Kotsev, Team leader, JRC.T1

Why are we here?

- **Challenging times** for agriculture
- Discuss together on **how to make progress together with the three involved stakeholders:**
 - Farmers
 - Private sector/service providers
 - Public sector



Enabling legislation

1. Data Governance Act

- Build trust in data sharing
- Data Intermediation and Altruism
- Data interoperability

2. Digital Markets Act

- Data portability
- Ensure fair practices by 'gatekeepers'

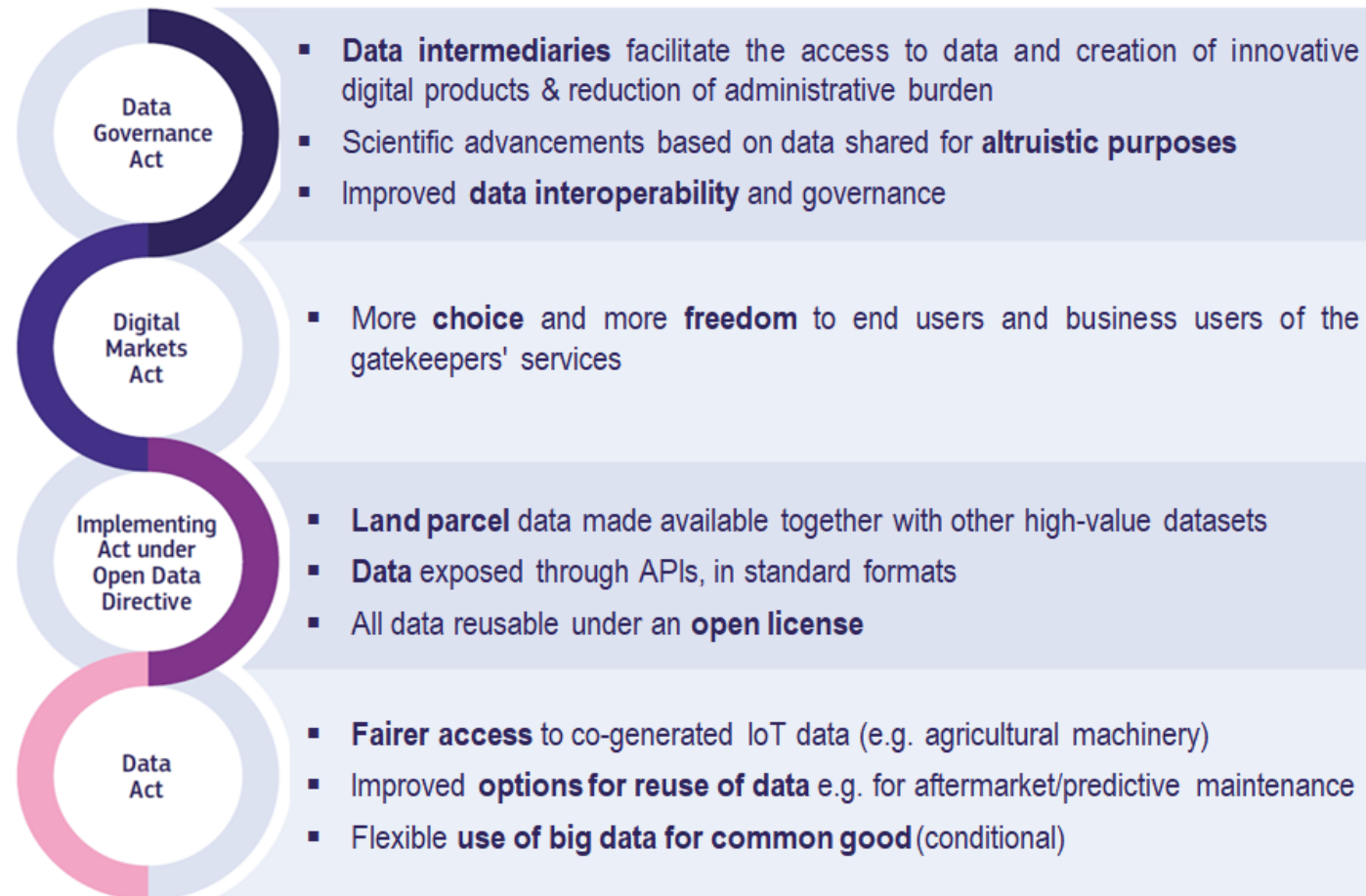
3. Implementing Act - Open Data Directive

- Increase data availability and access
- Reduce heterogeneity in licensing

4. Data Act

- Fair access to and use of data
- Data sovereignty
- Data interoperability
- B2G data sharing

Possible benefits for the agricultural sector (indicative)





Funding opportunities

Overview **funding strands**

- Deployment call for agricultural data space
- Research grants
- DG Reform funds based on request from MS

Key policy concerns

Challenge: boost data innovation while ensuring trust and control for farmers

- Tackling data sovereignty for farmers, reduction of administrative burden and boosting interoperability can intersect.
- Facilitate innovation for AGRO start-ups and SME's.
- Picking up on various initiatives at MS level – BE (DjustConnect), NL (dairy industry), FR (Agdatahub), ES (Digital Fieldbook), SE (Agronod), etc.
- Many of the above-mentioned initiatives are driven both by private and public sector.



Policy support

Emphasis on **implementation** and **anticipation**

A. Inclusive Data Governance

- Citizen-centrism
- Data intermediaries
- Data altruism

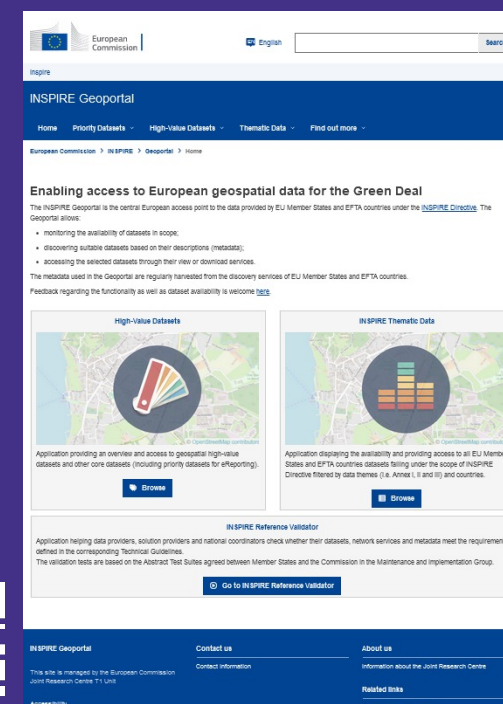
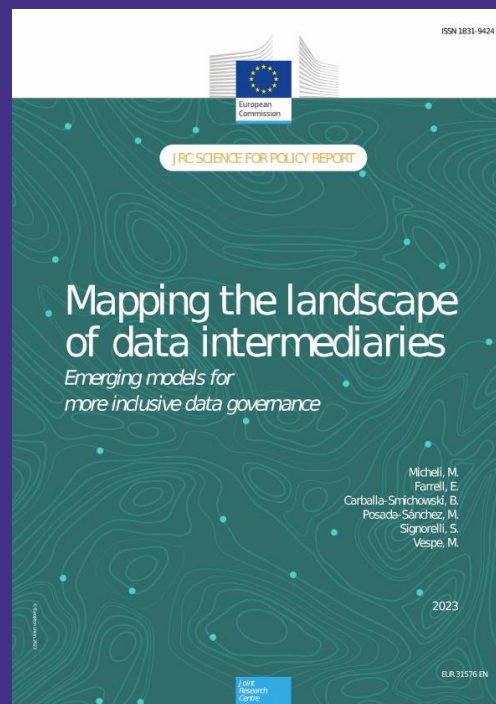
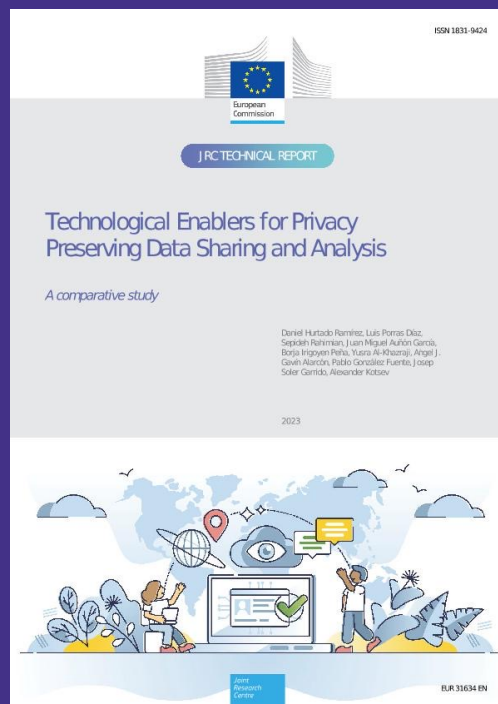
B. Technical enablers

- Access to geospatial high-value datasets
- Sandboxes and prototyping
- Research on FAIR data sharing and standardisation
- Privacy preserving technologies
- Synthetic data

Joint effort AGRI & JRC on agricultural data sharing



Facilitating data utilisation – Selected JRC work



- These aspects can be instantiated in **agricultural sector** incl. at farm level.
- Looking forward to **collaborating** on sandboxes, prototypes and peer learning.

Thank you!

Questions?

Reach out on
seth.van-hooland@ec.europa.eu
alexander.kotsev@ec.europa.eu



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EU Science Hub
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TECHNOLOGY TRACK

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Aapo Mustonen

Ecosystem Business Development

IBM

SITRA

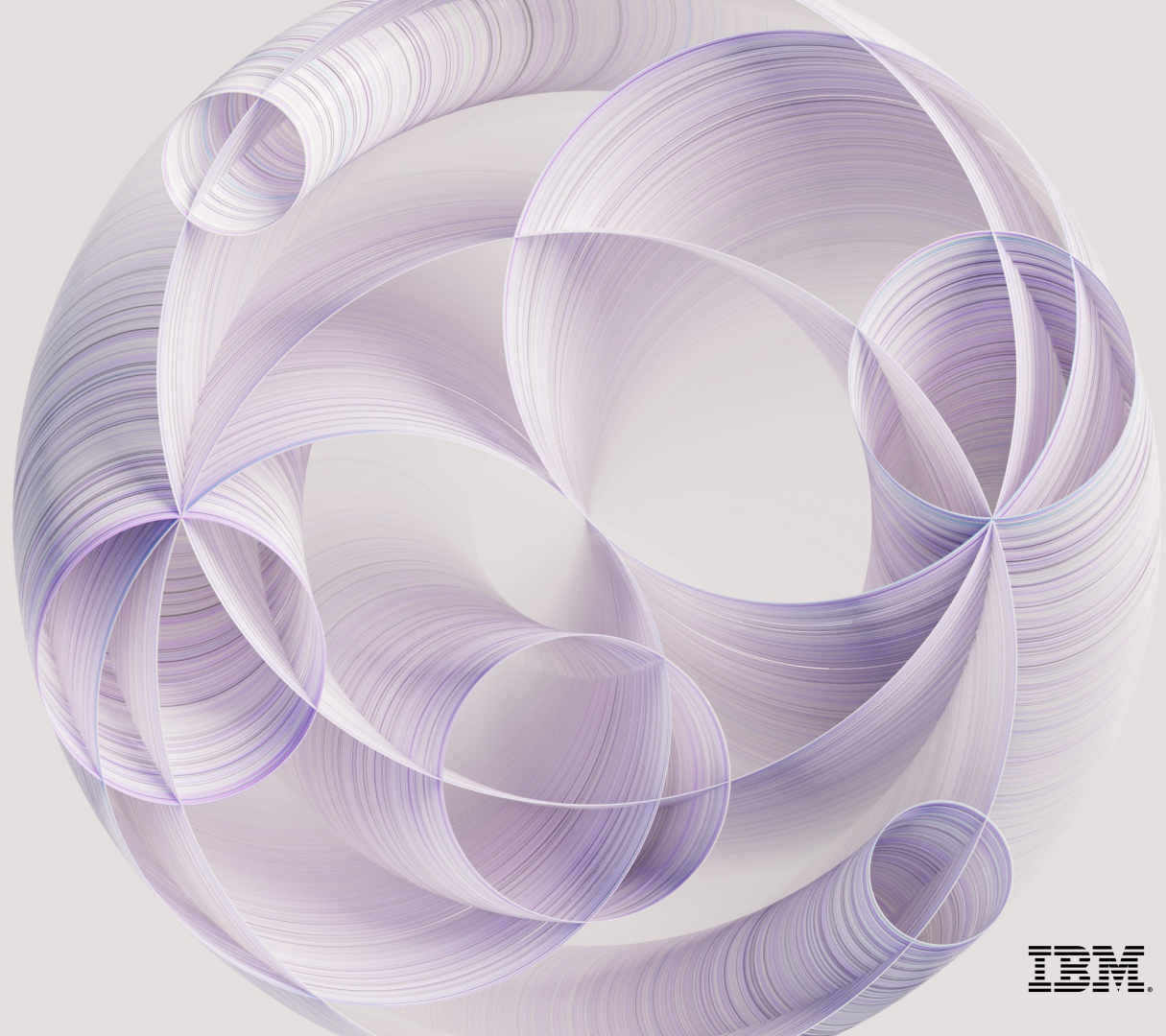


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You're
responsible for
your AI –
Do you trust it?

Aapo Mustonen
Data & AI Sales Specialist



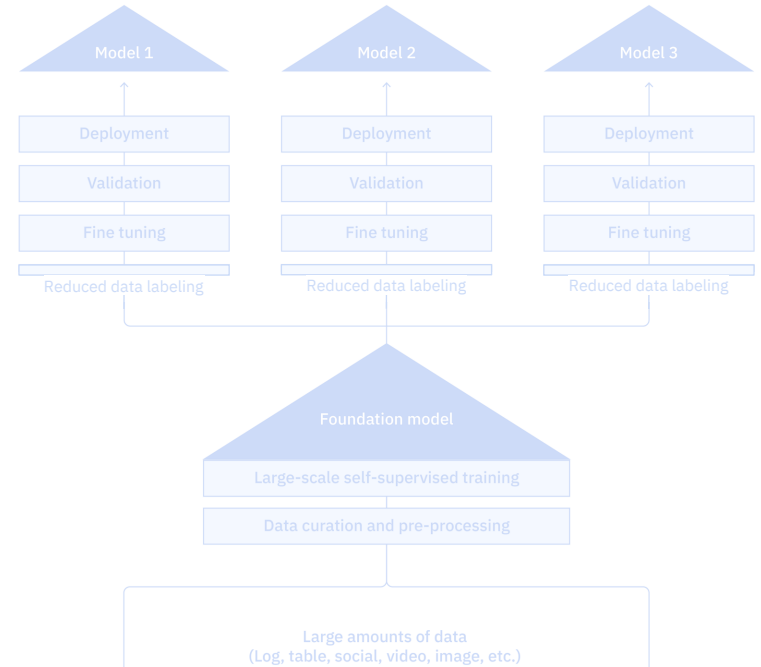
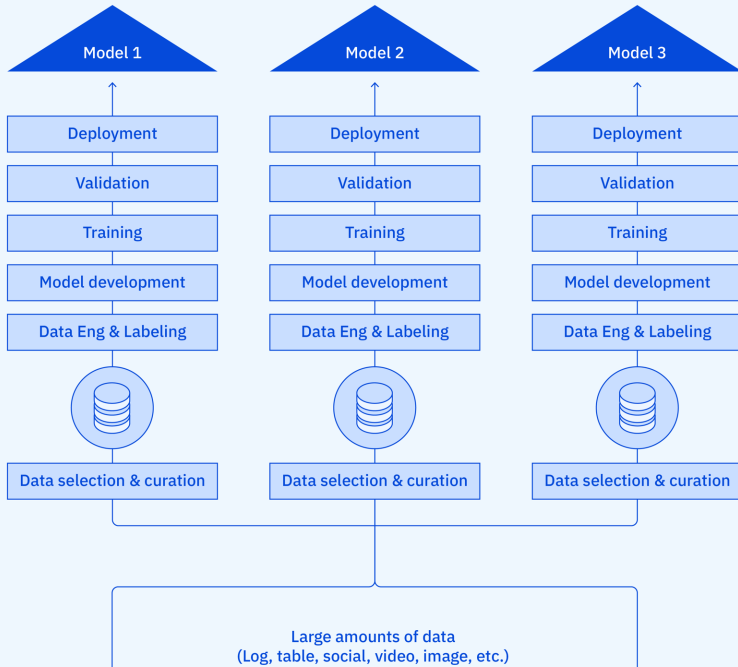
Foundation models
are bringing an
inflection point in AI...

...but how enterprises
adopt and execute will
define whether they
unlock value at scale

The impact of generative AI |

The opportunity

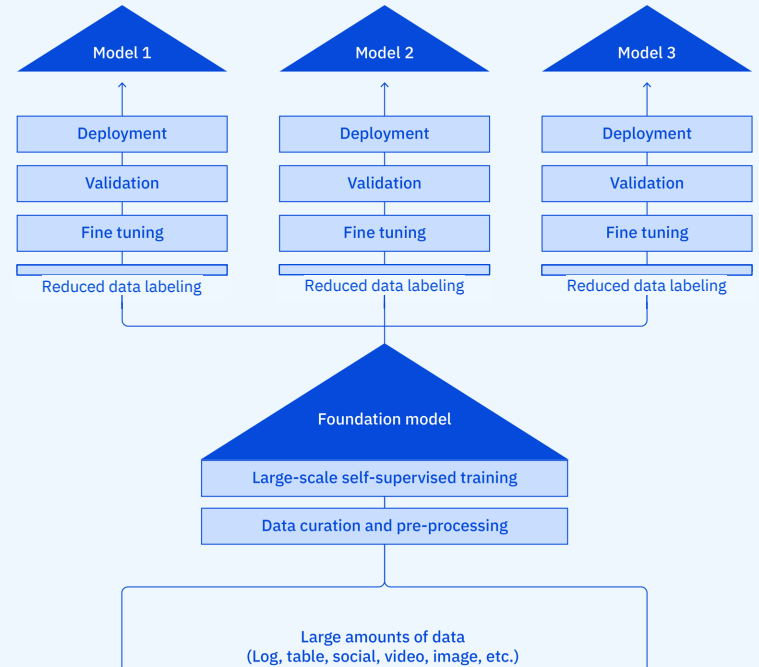
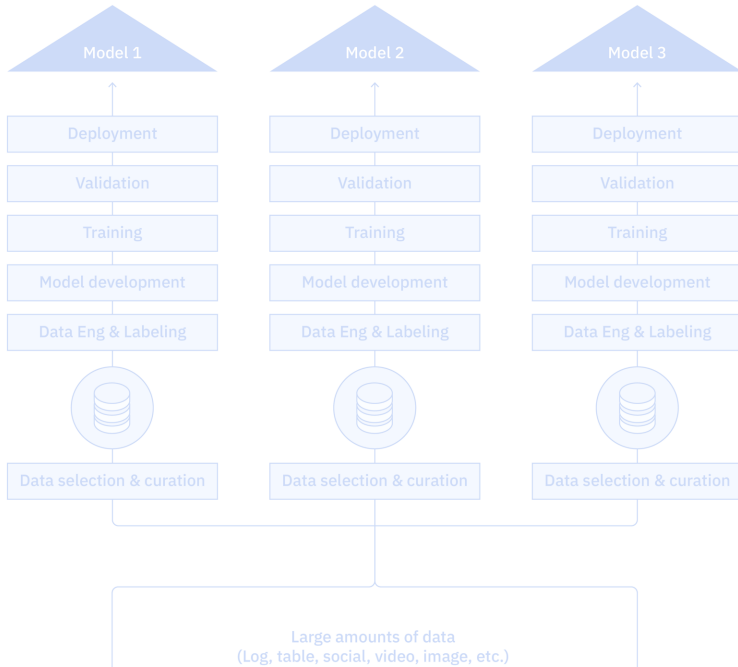
Foundation models are becoming an essential ingredient of a new AI workflow



The impact of generative AI |

The opportunity

Foundation models are becoming an essential ingredient of a new AI workflow



Employee productivity is expected to be the primary driver of economic value

- There is widespread interest in applying AI across business functions.
- Customer service and IT processes consistently emerge as top priorities across research studies.

Executives are embracing generative AI and large language models (LLMs) to optimize and automate¹:

63%

IT processes

57%

Customer service workflows

45%

Supply chain

41%

HR and talent management

40%

Sales and marketing

35%

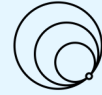
Operations

34%

Finance

¹Source: [IBM Institute for Business Value, May 2023](#)

However, the following barriers prevent organizations from benefiting from AI



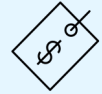
Integration and scaling challenges



AI governance



Data complexity



High price



Limited skill and expertise



Lack of AI model development tools

Enterprise considerations

Enterprise considerations

Enterprises must also tackle a broad set of considerations to capture value at scale

Non-exhaustive

Strategy and value

What's my overall vision for the impact AI can have on my organization?

- Strategic alignment
- Use case prioritization and anticipated ROI
- Capability development
- Metrics and measurement

Technology and data

Which models, data, and deployment options are best suited for my needs?

- Model selection
- Deployment option
- Data and prep
- Infrastructure
- Integration with enterprise systems

Experience design

How do I maximize adoption through a user-centric design approach?

- User personas
- To-be experiences
- Enabling capabilities
- Workflows and automation

Operating model

What shifts are needed to responsibly scale AI across the organization?

- Ways of working
- Policies and guidelines
- Governance
- Ethics (explainability, fairness, robustness, transparency, privacy)

Talent and culture

How do I ready my organization to embrace an AI+ culture?

- Roles and organization
- Talent redeployment
- Training and upskilling
- Hiring
- Change management

What we're learning from thousands of generative AI projects

Multi-model

Two thirds of 150+ enterprises surveyed report pursuing a **multi-model strategy**

- 60% + of enterprises pursuing multi-model are experimental with commercial & open-source models
- Commercial & open-source innovation
- Quickly prioritize use cases that will outlive the model
- Multi-modal (text, image, audio, etc.)
- One model will not rule them all

Multi | hybrid cloud

Gartner reports that most **enterprises will deploy generative AI across hybrid / multicloud environments**

- Run where the workflows, apps and data live
- Infer where business runs to drive performance, cost, and simplicity
- Data location to drive security benefits
- Regulatory compliance to influence location selection

Governance

Surveyed companies report **governance as a top requirement**, impact of generative AI makes governance more difficult

- Businesses must control bias and monitor drift
- Organizations must actively monitor hallucinations and ensure model explainability
- Leaders must seek practices and tools to ensure model and data provenance

Scale for value

Critical to pick the **right use cases and deployment for generative AI ROI**

- Different work tasks have strongly positive or negative ROI impact
- Time savings for a meaningful product innovation +40%; business problem solving -23% time needed
- 60+ points difference in value for work tasks
- 25x difference in cost per inference, depending on model and deployment

Data matters

Generative AI pilots have not made it to production due to **challenges with data quality, access, and security**

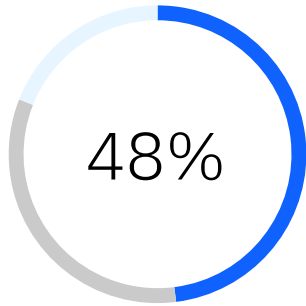
- Short run: model innovation creates value
- Long run: data quality will decide which enterprises win with generative AI

Enterprise considerations

Business leaders face challenges in scaling AI across the enterprise with trust

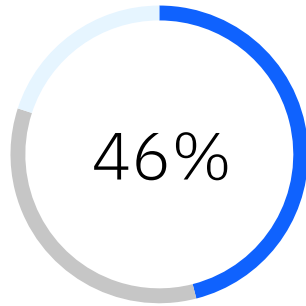
80% of surveyed business leaders see at least one of these ethical issues as a major concern¹

Explainability



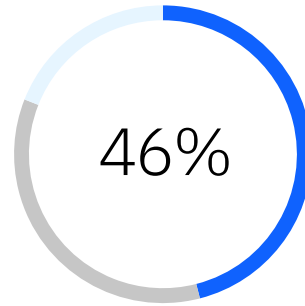
believe decisions made by generative AI are not sufficiently **explainable**

Ethics



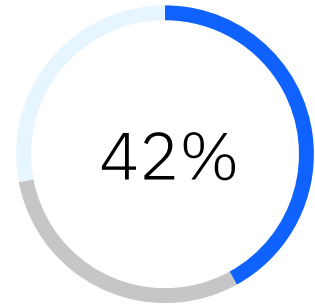
concerned about the safety and **ethical** aspects of generative AI

Bias



believe that generative AI will propagate established **biases**

Trust



believe generative AI cannot be **trusted**

Agree Neutral Disagree

The EU AI Act

EU reaches deal on world's first comprehensive AI rules

01

Use high-quality training, validation and testing data.

02

Establish documentation and design logging features.

03

Ensure appropriate certain degree of transparency.

04

Ensure human oversight (measures built into the system and/or to be implemented by users).

05

Ensure robustness, accuracy, and cybersecurity.

€35M

in potential fines for noncompliance, or 7% of a company's total worldwide annual revenue¹

The EU AI Act



IBM POV: Four core principles to tailor generative AI for enterprise

Open

- Based on the best AI and cloud technologies available
- Facilitating access to the innovation of the open community and multiple models

Targeted

- Designed for targeted business use cases, that unlock new value at optimal cost
- Including curated models that can be tuned to proprietary data and company guidelines

Trusted

- Built with AI and data governance, transparency, and ethics that support increasing regulatory compliance demands
- Providing guidance on appropriate models to leverage to create real business value with trust

Empowering

- Leveraging a platform that enables clients to customize models with their data and integrate into complex environments to move from experimentation to production
- Running anywhere, designed for scale and widespread adoption to truly create enterprise value

What IBM offers

*AI tailored for business,
expertise to put it to work*

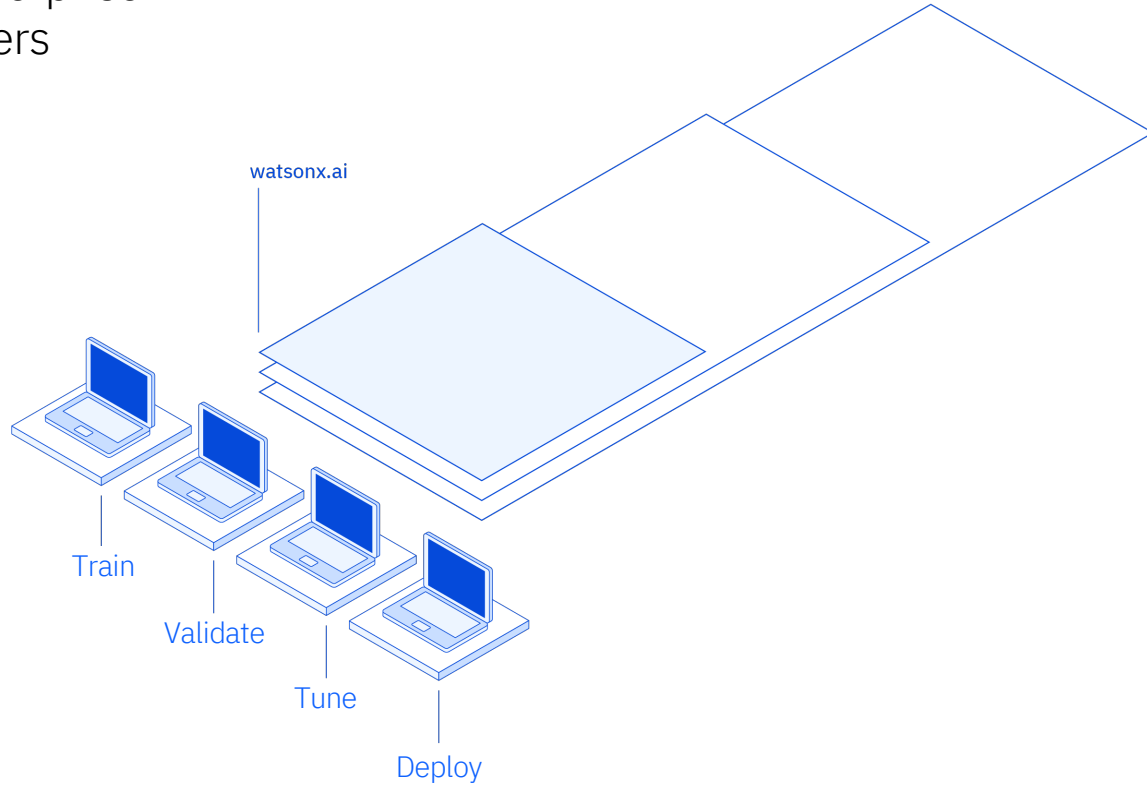
What IBM offers

Introducing...

watsonx

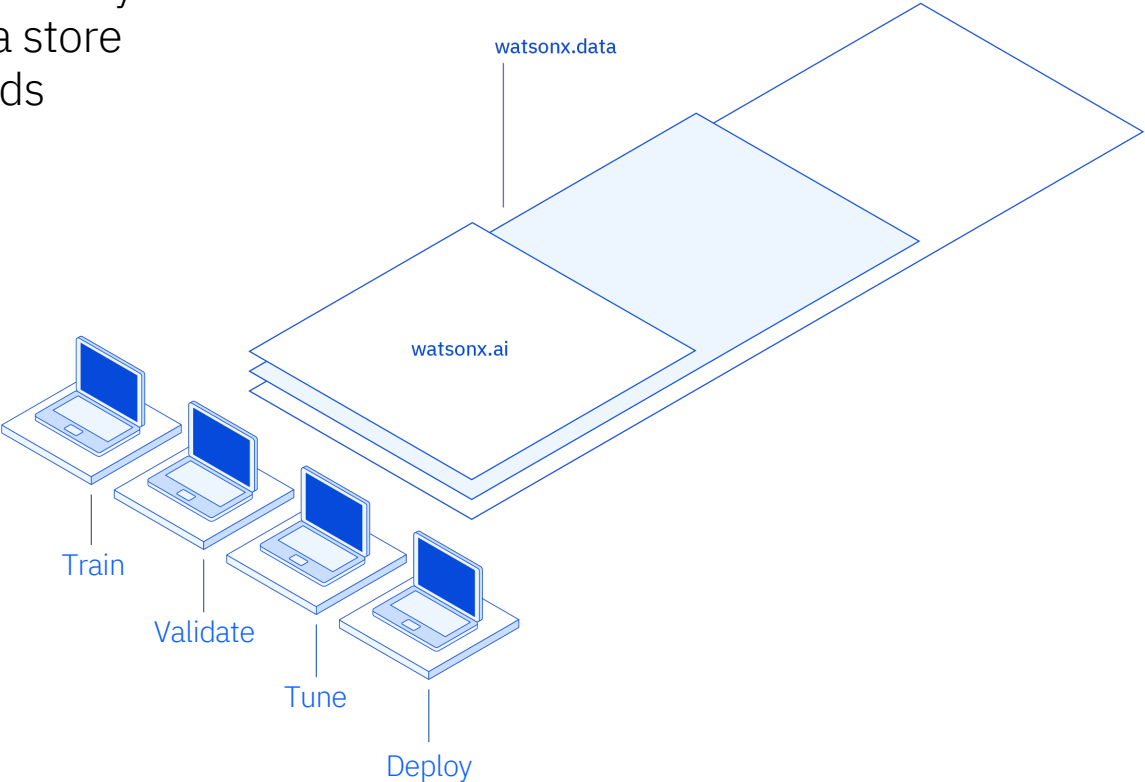
What IBM offers

watsonx.ai: An enterprise studio for AI builders



What IBM offers

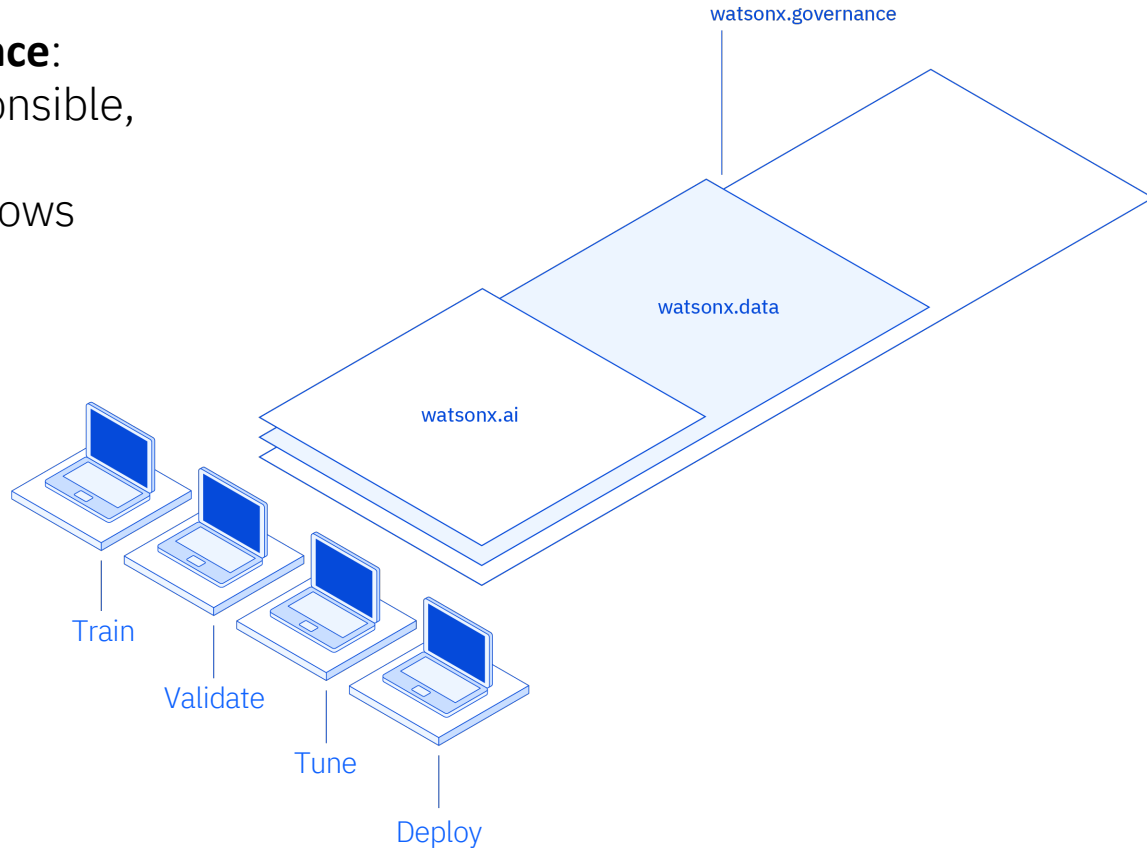
watsonx.data: Enabled by a fit-for-purpose data store to scale AI workloads



What IBM offers

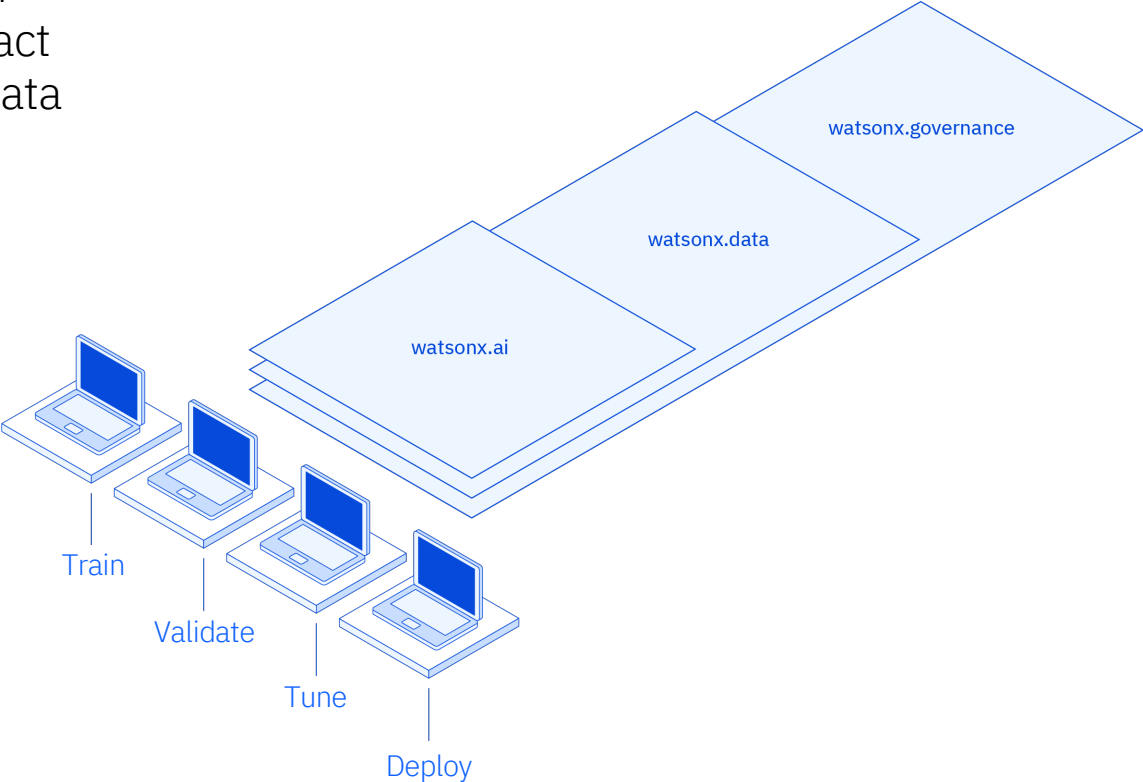
watsonx.governance:

Governed by responsible, transparent, and explainable workflows



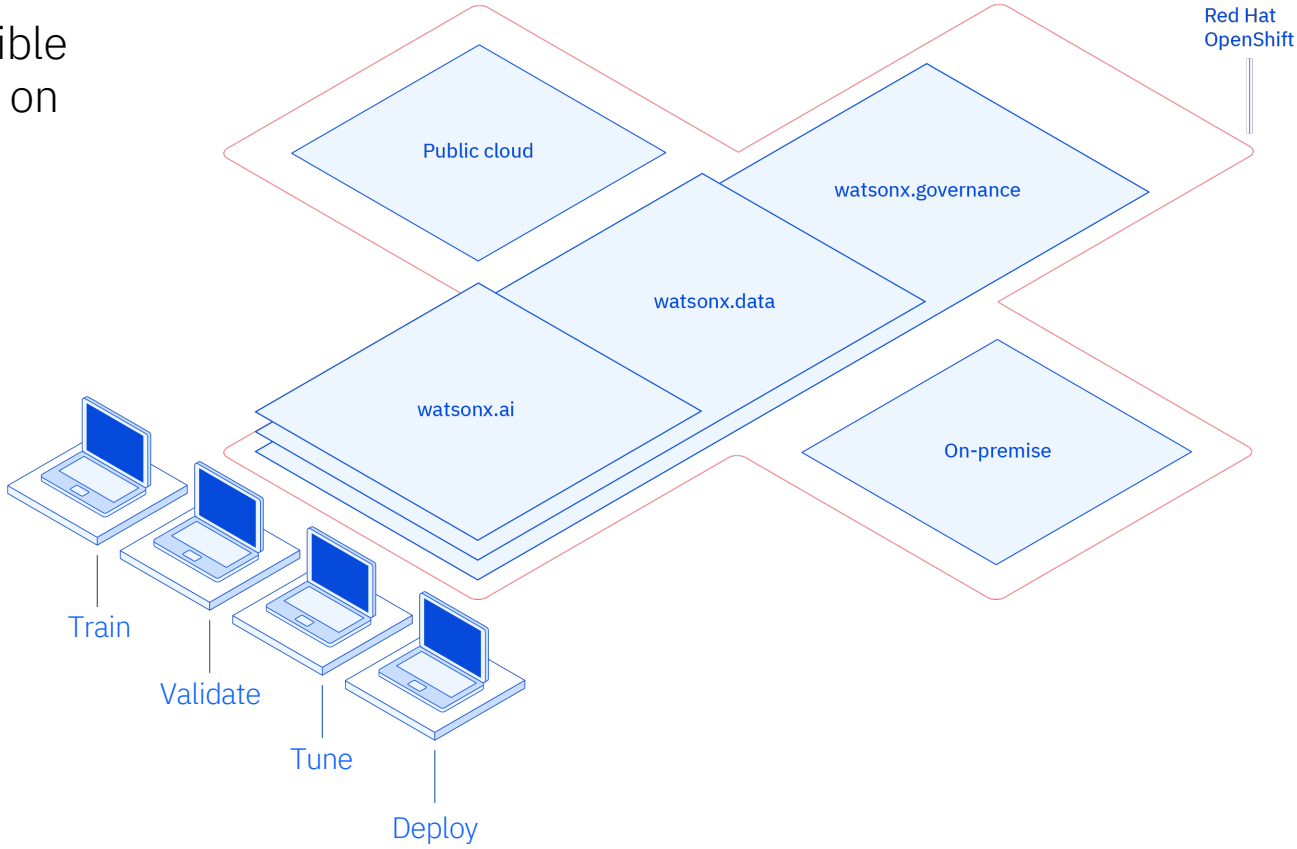
What IBM offers

watsonx: Scale and accelerate the impact of AI with trusted data








What IBM offers

watsonx: With flexible deployment based on Red Hat OpenShift



IBM's generative AI technology and expertise

 AI assistants	Empower individuals to achieve higher levels of performance by using generative AI to simplify access to information and automation across the business.	watsonx Code Assistant watsonx Assistant watsonx Orchestrate watsonx Orders	
 SDKs & APIs	Embed watsonx platform in third party assistants and applications using programmatic interfaces.	Ecosystem integrations	
 AI & data platform	Leverage generative AI and machine learning — tuned with your data — with responsibility, transparency and explainability.	watsonx watsonx.ai watsonx.governance watsonx.data	Foundation models Granite <i>IBM</i> Open Source <i>Hugging Face</i> Llama 2 <i>Meta</i> Geospatial <i>IBM + NASA</i> ...
 Data services	Define, organize, manage, and deliver trusted data to train and tune AI models with data fabric services.	Cloud Pak for Data watsonx Discovery	
 Hybrid cloud AI tools	Build on a consistent, scalable foundation based on open-source technology.	Red Hat OpenShift AI (e.g., Ray, Pytorch)	

Consulting
Generative AI strategy, experience, technology, operations

Ecosystem
System Integrators, Software and SaaS partners, Public Cloud providers

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Markus Taumberger

Research Team Lead

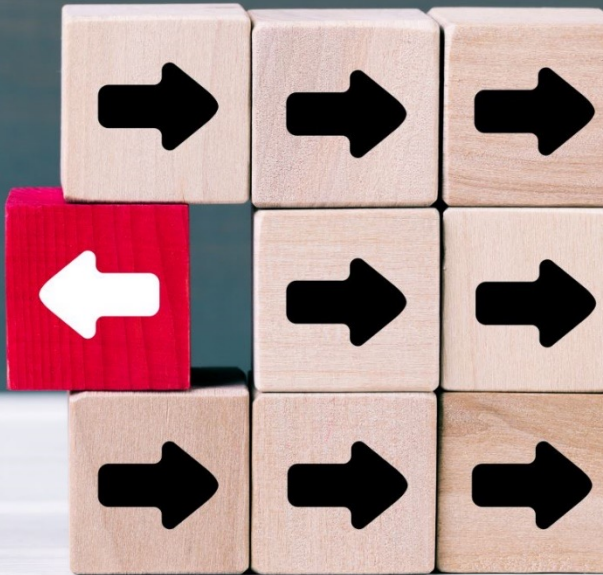
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The Future of Data Spaces

Nordic Data Festival 2024

10.4.2024

Markus Taumberger

Introduction

Markus Taumberger

markus.taumberger@vtt.fi

- Line Manager at VTT
 - Director of the Finnish IDSA Hub
 - Head of the Data Spaces Innovation Lab (DSIL)
 - Research portfolio manager (currently coordinating the Horizon Europe project RESONANCE and the H2020 project iFLEX)
 - Head of the Advanced Data Spaces team
 - => Developing software enablers for the data revolution
 - Seamless data flow between systems
 - Marketplaces and value creation
 - Data modelling and semantics
- Diplom-Ingenieur in Electrical Engineering from the Technical University of Munich



European Strategy for Data

A common European data space, a single market for data



The European strategy for data aims at creating a single market for data that will ensure Europe's global competitiveness and data sovereignty. Common European data spaces will ensure that more data becomes available for use in the economy and society, while keeping companies and individuals who generate the data in control.

EU single market success reloaded

- **The great success of the EU single market for goods will be extended to data, creating new business opportunities**
 - Structured and standardised way to share data in collaborative ecosystems will enable new (cross-sectoral) business
 - **Trustworthiness**: Data transactions in secure and trustworthy manner by identity / access management
 - **Data sovereignty**: Usage control to ensure data provider's control over the data
 - **Decentralised** approach with data only leaving the data provider when being exchanged
- **Compliance**
 - The EU legislation that has been developed to prepare the society to the widespread benefits of the data economy will impact companies operating in Europe: **Data Act**, **Data Governance Act**, and **AI Act**.
 - The first data space trials in both EU level and national research collaboration projects have proved the feasibility of early approaches and business models.
 - Current developments of data space solutions are coordinated by associations involving major EU and global industrial companies. The main initiatives, such as the **GAIA-X**, **IDSA**, and **FIWARE** are converging towards common European data spaces and towards the digital single market.
 - Mandatory reporting duties require the collection of data from various stakeholders: **Sustainability reports**, **Digital Product Passports**, **Supply Chain Act**



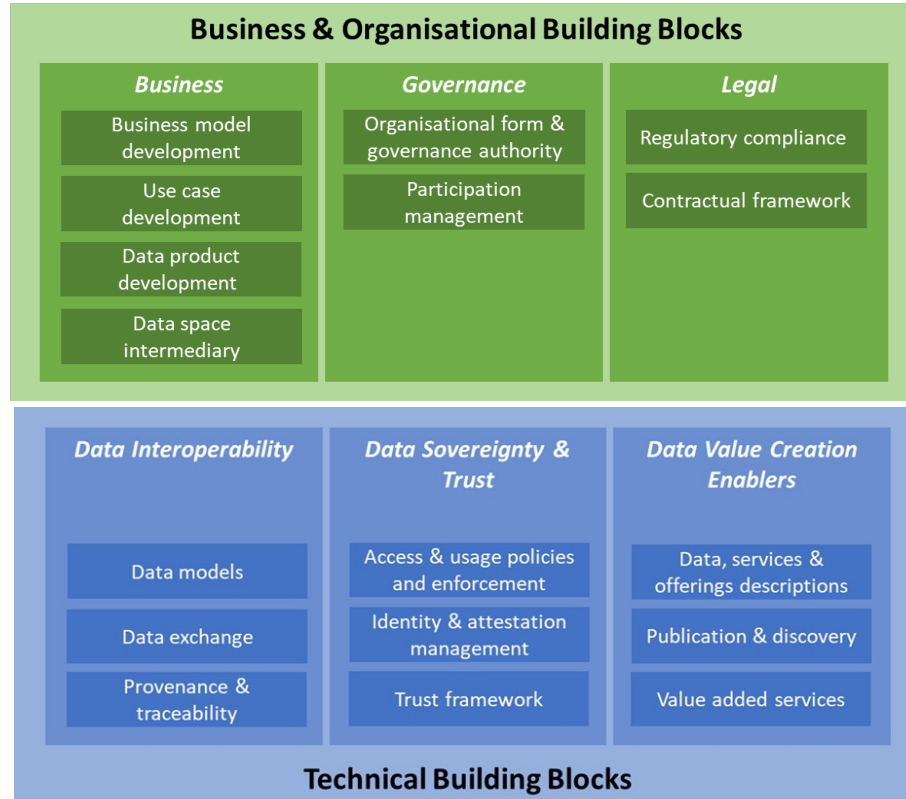
Data economy enabled by Data Spaces

Data spaces – A new approach to data exchange

- **Data platforms and data hubs**
 - Data transferred to third party
 - Often hosted in Cloud environment => Depending on the physical location might change the legislation under which the data is
 - Managed by third party software => Possible exposure to leaks
- **Data lakes and warehouses**
 - Distributed collections of data bases under a single point of control => Same data control problems as platforms
- **Messaging systems or APIs**
 - High level of security
 - Data management challenging => Typically big overheads regarding configuration and scaling because of individual handling of each connection
- **Data spaces**
 - Software-based distributed system
 - Ensuring data sovereignty, and the trustworthiness and security of data transactions
 - Sophisticated and comprehensive governance framework describing the common rules and agreements among the data space participants for data sharing

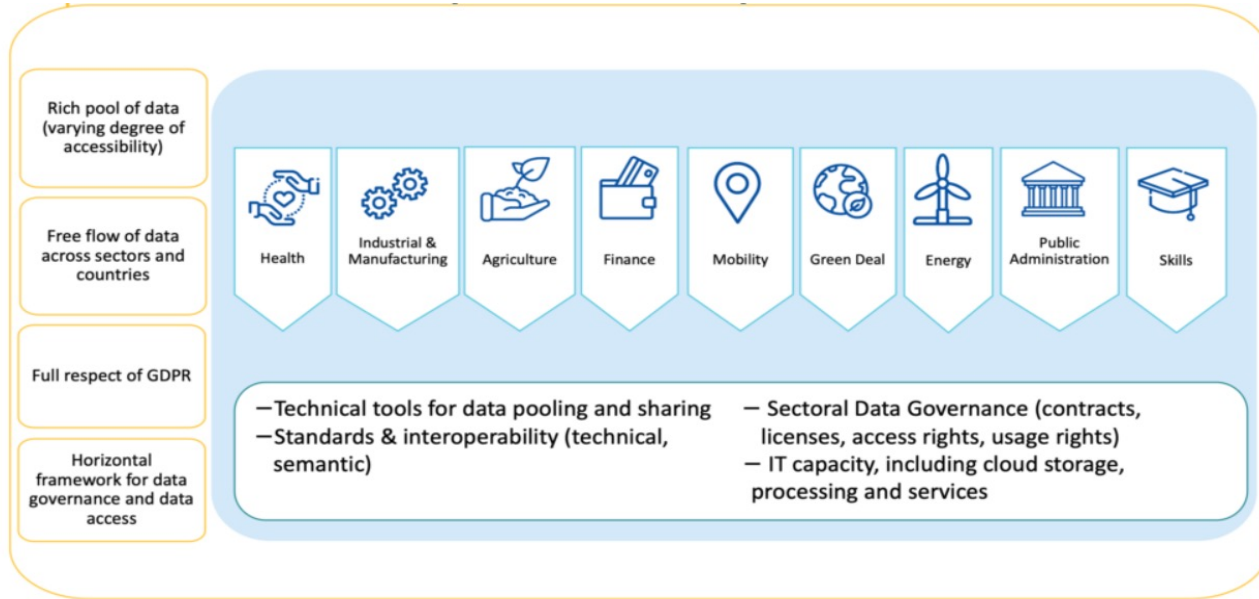


Data Spaces Building Blocks



Source: DSSC (dssc.eu)

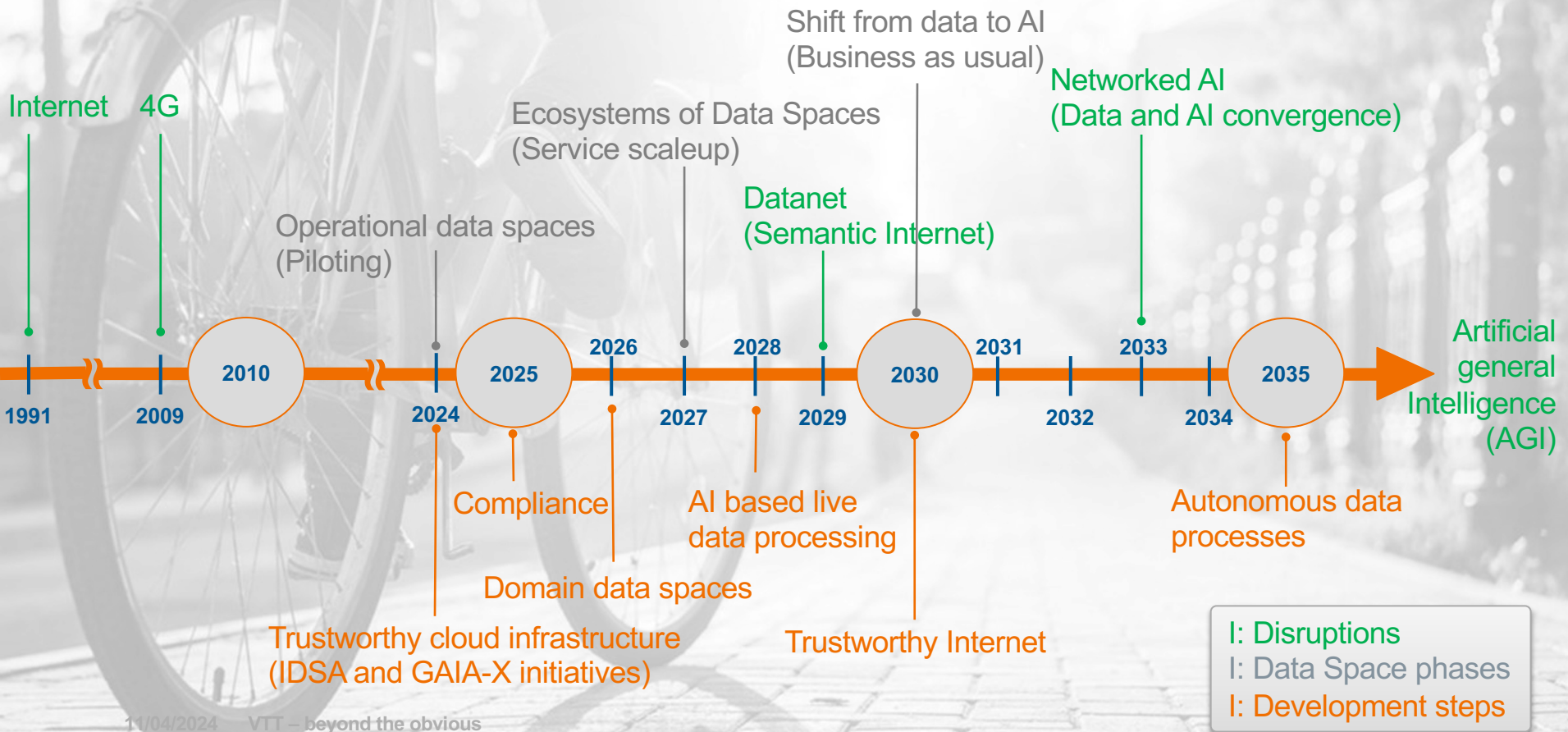
Common European data spaces



Data space is a novel way for cross sectoral data sharing

“European data sharing space, refers to a (digital) space that is composed of, or connects, a multitude of distinct (digital) spaces that cut across sectoral, organisational and geographical boundaries.”

Timeline of the Data Space domain – Big picture





Expert Support

Data Spaces Innovation Lab (DSIL) supports the journey towards data spaces

- Sandbox environment for data spaces co-creation with partners
- Private Cloud infrastructure for GDPR-compliant hosting
- Certified components with extended features
 - OPC UA support
 - Support for user and role-based access management (Keycloak)
- Ready solutions for FIWARE, GAIA-X, IDS

=> www.vttresearch.com/en/ourservices/data-spaces



Use case library

DSSC.EU
Data Spaces Support Centre

How can we help you?

- The official organization on EU... framework... deployment of external... data spaces...
- The official organization on EU... framework... deployment of external... data spaces...
- The official organization on EU... framework... deployment of external... data spaces...

About Support Knowledge Base

Data Spaces Support Centre

EMDS
Towards a common European mobility data space (EMDS)

deployEMDS

DISCOVER MORE

Mobility

DaCapo
Circular economy in manufacturing

Digital assets and tools for circular value chains and manufacturing products

10 countries - 5,000+ 40 months

Circular economy in manufacturing

FLEXIGROBOTS
Flexible robots for intelligent automation of precision agriculture operations

Agriculture

DataMust
Data markets for sustainable cities

Data Market

Reservyst
Enabling manufacturing lines for rendering, medical and other products and services for reuse of spring, forward lines

Horizon-Trustee
Towards a Trustworthy Framework.

Utilizing Self-Sovereign technologies and with State-of-the-Art homomorphic encryption, HTRUSTEE offers a socially and environmental-aware framework for cross discipline federation of Data.

Manufacturing

TANGO
Digital Technology for Secure and Trustworthy Data Flows

Trust technology

RESONANCE
Replicable and Efficient Solutions for Optimal Management of Cross-sector Energy

Energy

Conclusions

Future work

- More movement in other European member states, Finland should catch up with VTT's support
- Hype, everybody says they have data spaces (database, data lake / warehouse, platforms)
- Lack of knowledge about data spaces in industry

Vision

- Convenient like internet search engines
- AI-supported data model creation / translation
- Convergence of data and AI
- From user interfaces for direct data space interaction to AI agents with real-time / real-world data access through data spaces
- From closed platforms to collaborative ecosystems
- Standards on all levels, like in mobile communication (base stations and mobile phones)

Meet us

- Today at the networking table: ***Data Spaces Innovation Lab by VTT***
- 22.-26.4. ***Hannover Messe***, Finland Pavilion, Hall 17, D40
- 21.-23.5. ***IOT Solutions World Congress***, Testbed 1, Barcelona

Contact us

- Markus.Taumberger@vtt.fi
- www.vttresearch.com/en/ourservices/data-spaces

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Alban Schmutz

Independent board member of CISPE

CEO of Cloud Data Engine

Pierre Gronlier

Co-founder and R&D Director

CloudDataEngine

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2024**



CloudDataEngine
Automated Compliance

**Enabling Data Space
enhancing conformity**

**Nordic Data Festival 2024
10th April 2024**

Alban Schmutz (CEO) & Pierre Gronlier (R&D Director), CDE

Data and Digital Conformity

“**Global Regulatory Compliance** market size was valued at **USD 17.1 billion in 2022** and is expected to expand at a CAGR of 6.03% during the forecast period, reaching **USD 24.3 billion by 2028.**”

<https://www.marketgrowthreports.com/enquiry/request-sample/22382791>

Unique Comprehensive Solutions with CDE

Catalog Management:

Only CDE facilitates the creation, operation, and oversight of catalogues aligned with Gaia-X standards for various federations.

Unified Certification:

CDE's unmatched unified platform simplifies CSP certification, providing insights on additional certification opportunities.

Founders: accomplished industry experts



Alban SCHMUTZ

Co-founder and CEO

SVP Strategic Dev. & Public Affairs **OVHcloud**
Co-founder, Board Member, Deputy CTO,
Chairman of the Policy Rules Committee –
Gaia-X
Co-founder and President - **CISPE**
Co-founder and Board Member – **CNDPC**
VP in charge of Public Affairs – **EuroCloud**
Co-founder & Board Member – **IRT SystemX**
Co-founder and CEO of several companies



Olivier TIRAT

Co-founder and CTO

Lead implementer for Verifiable Credentials &
Services Catalogue – **Gaia-X**
Founder & CEO – **BYO Networks**
Optics Program Manager - **Alcatel**
Defense Project Manager - **Sagem**



Pierre GRONLIER

Co-founder and R&D Director

CTO – **Gaia-X**
Cloud Solution Architect - **OVHcloud**
Senior Program Manager - **Microsoft**
Video Quality Engineer - **Skype**



Jules-Henri GAVETTI

Co-founder and CSO

Founder and CEO – **Ikoula**
Founding and Board Member – **CISPE**
Board Member - **EuroCloud**





Conformity for data spaces: why & how?

Data and Digital Conformity: examples

ISO9001, ISO27001, ISO14001, ISO14644-8, OHSAS 18001, PCI DSS, PAS 99, VAHTI T3, KATAKRI, ...

- *As a data provider: how can I express that consumers shall only process data on PCI DSS certified services ?*
- *As a data consumer: how can I demonstrate the previous requirement(s) ?*

Digital Conformity: today



bsi
EXAMPLE



Certificate of Registration

INFORMATION SECURITY MANAGEMENT SYSTEM - ISO/IEC 27001:2013

This is to certify that:

Dublin
Ohio
43017
USA

Holds Certificate No:

IS

and operates an Information Security Management System which complies with the requirements of ISO/IEC 27001:2013 for the following scope:

The Management System is applicable to: Information Security Activities Associated with OCLC's Management Services, Resource Sharing, Metadata Services, Discovery and Reference, and Internal Infrastructure Support. All in Accordance with the Statement of Applicability version 3.10 dated April 7, 2022.

Previous certificate expired on 6/30/2022
Recertification audit ended 04/28/2022.

For and on behalf of BSI:

Aitanga
Chief Operating Officer - Assurance - Americas

Original Registration Date: 2012-01-22
Latest Revision Date: 2022-07-11

Effective Date: 2022-07-11
Expiry Date: 2025-06-30

Page: 1 of 3



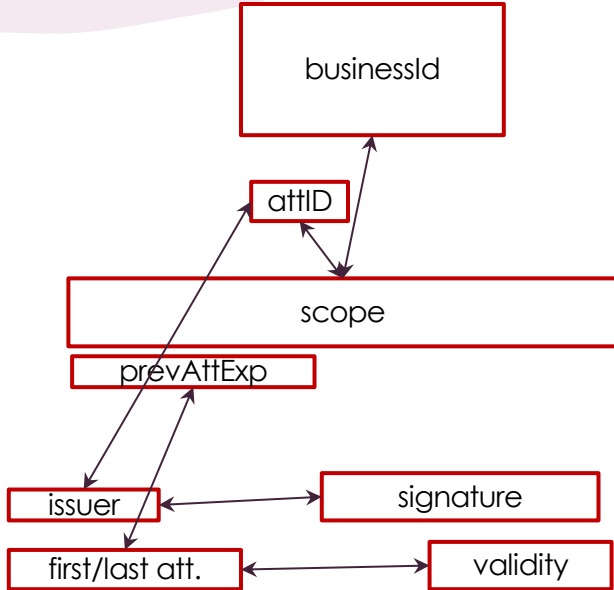
...making excellence a habit.™

Digital Conformity: extraction

Metadata extraction:

- business identification
- attestation type
- attestation identity
- scope
- issuer identification, incl. appointed representative
- date (validity, first/last issuance, ...)
- ...

Digital Conformity: transform

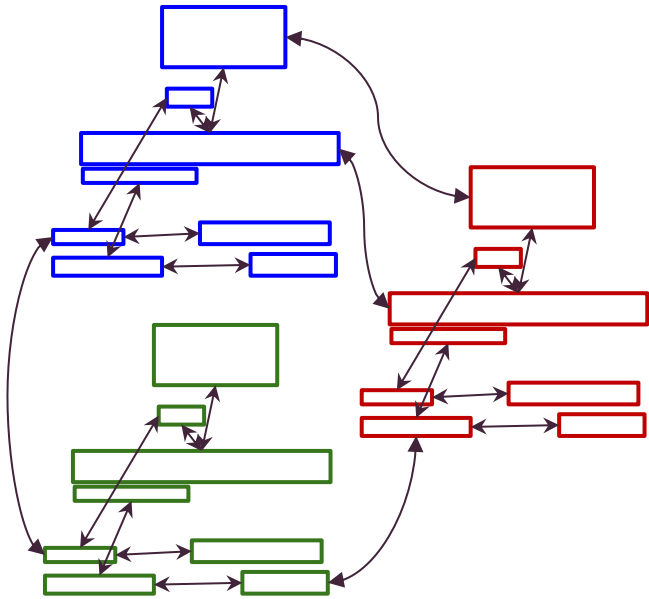


Unstructured data -> machine-readable formatted structured data

```
{
  "@context": {"schema": "http://schema.org/"
},
  "@type": "cde:Certification",
  "cde:LegalParty": {
    "schema:taxId": "123ABC",
    "thing:name": "CompanyName",
    "cde:id": "did:web:..."
  },
  "cde:Issuer": {
    "schema:taxId": "789GHI",
    "thing:name": "CABName",
    "cde:id": "did:web:..."
  },
  "cde:attestation": {
    "cde:type": "cde:certification",
    "cde:id": "456def"
  }
}
```

Based on Linked data
and Verifiable Credentials

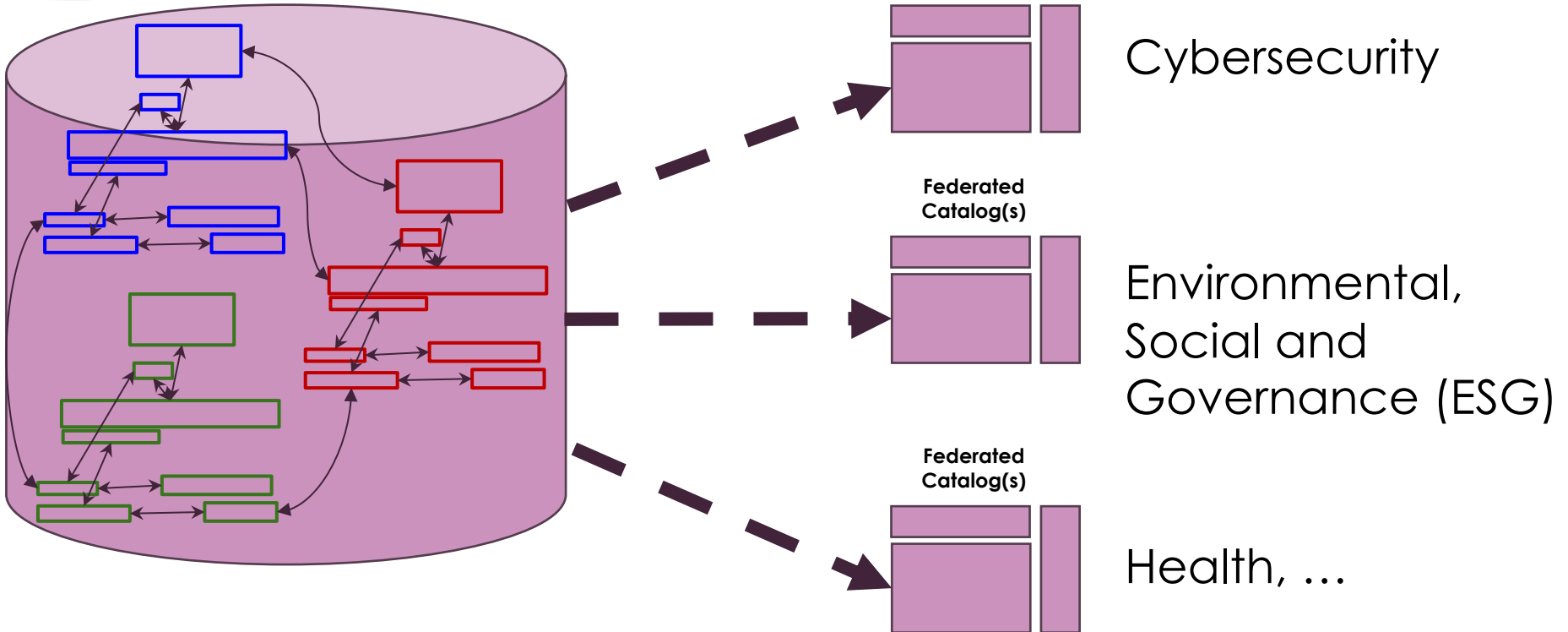
Digital Conformity: reasoning



Based on the CDE knowledge graph:

- Identify gaps in the chain of conformity
 - scope / validity periods / eligibility / ...
- Identify opportunities and reduce costs in the assessment by leveraging existing certifications.

Cloud Data Engine catalogues





Catalogue Offer

CISPE catalogue by CDE



powered by Gaia-X

A screenshot of the CISPE catalogue web application. The interface includes a top navigation bar with "Log in", "Register a Service", and "FAQ" buttons. A left sidebar contains navigation options like "Gaia-X Labels by CISPE", "Certifications", "Types of services", "Layers", "Locations", and "Providers". The main content area shows a search bar, a pagination control for "41-50 of 354 services", and a list of service cards. The first card is for "Enterprise File Storage" by OVHcloud, listing certifications like IAAS, CSA STAR type I, SOC type I, and CS type I. A "Filter" button is visible at the bottom of the sidebar.

CISPE.cloud is the voice of cloud providers in Europe
The CISPE Federation Catalogue, is **the First catalogue 100% in production demonstrating the whole Gaia-X Value Chain with Verifiable Credentials**

All Cloud Providers are welcomed to declare services if

- following the **Gaia-X Policy Rules & compliance**, and
- supporting key European initiatives on **Climate Neutrality, Data Portability and Data Protection**

13 providers listed with **777 located services offerings, in 68 locations**

- Services can be searched based on certifications, locations, typology or type of services (IaaS, PaaS, SaaS / Backup, Compute, Storage, etc.)

The catalogue is **open and public**
The Catalogue can be used **to search and compose services offerings**

The catalogue is owned by CISPE and operated by **Cloud Data Engine** (www.CloudDataEngine.io)
<https://cde.cispe.cloud/>

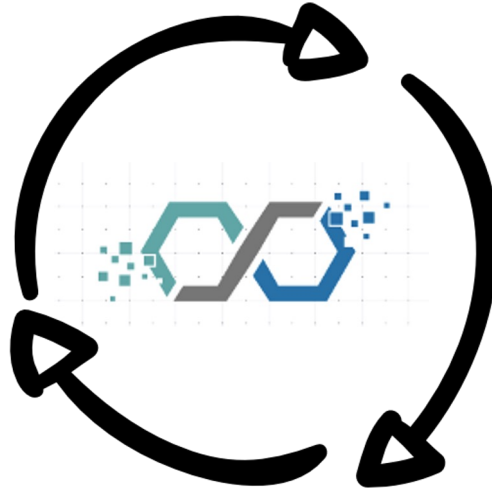
Federation Catalogue Offer

- **Initial Assessment:** Only CDE offers a focused evaluation for personalised catalogue creation, highlighting obtained certifications, for Providers and CAB.
- **Catalogue Setup & Update & Maintenance:** CDE takes the lead in catalogue creation, launch, keeping your catalog updated, efficient, and reflective of current & expected certifications.
- **Certification Guidance:** CDE guides Providers through necessary certification processes, optimal visibility across federation catalogues and certifications opportunities.
- **Trust Chain Monitoring:** CDE provides vigilant oversight, ensuring trustworthy Providers offers.

CDE : 3 Worlds = 1 Solution

Challenges encountered by **Providers**, including CSPs (Cloud Service Providers) and business solution providers:

- Enhance trust chain management through digitization.
- Identify accessible certification opportunities.
- Reduce management process costs.
- Improve certification process demonstration to customers.
- Enhance internal operational management.



Challenges faced by **Conformity Assessment Body** :

- Align solutions with CSP requirements
- Explore new certification options
- Improve communication with Providers and Customers
- Integrate internal digitization process into CSP workflow

Challenges faced by **Customers** using certificate business solutions include :

- Improve certificate management and tracking.
- Ensure compliance with industry standards and regulations.
- Streamline renewal and revocation processes.
- Integrate certificate management into existing IT infrastructure.
- Manage cost and complexity effectively.
- Identify suitable providers for certificate management.

What CDE could do for/with you?

CDE for techies

- Rules Engine
- APIs
- Ontologies

CDE for businesses

- Setup & management of catalogues
- Governance implementation
- Trust management
- User journey

Cloud services

Cybersecurity

Finance

Manufacturing

Thank you!

Contacting us...



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Gerard van der Hoeven

Executive Director

iSHARE Foundation

SITRA



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● iSHARE Trust Framework: Enabling Decentralised Data Ecosystems

Nordic Data Festival 2024
Helsinki, Finland

10 april, 2024



iSHARE

Gerard van der Hoeven
gerard@ishare.eu

● Bringing Data Autonomy to Businesses

WHAT?

Distributed **control of your data**

Enabling **Autonomy for your Business**

WHY?

Put **your data** to **work**

Control what **SaaS applications** and **AI** can do with your data

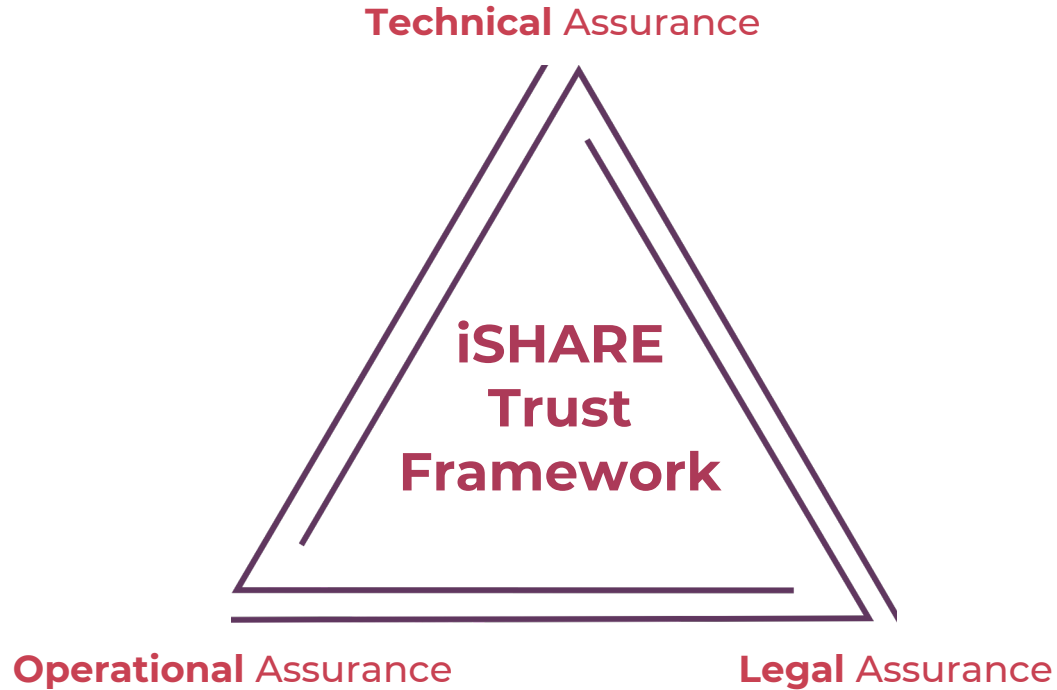
HOW?

Trust Framework for Data Spaces

Decentralised interactions



● iSHARE Triangle of Trust



● Giving Data Owners assurances and control

Data Sovereignty

Legal Assurance

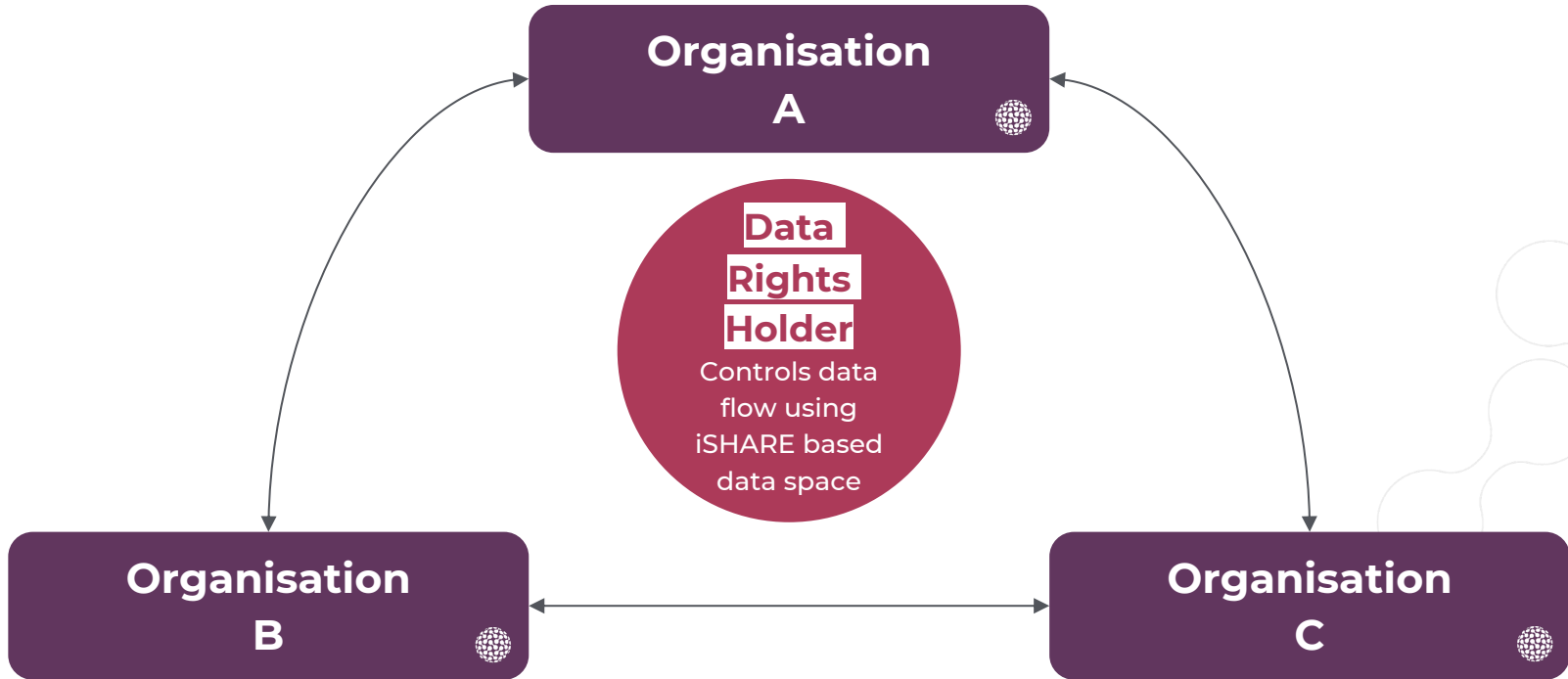
Decentralisation

Access Control

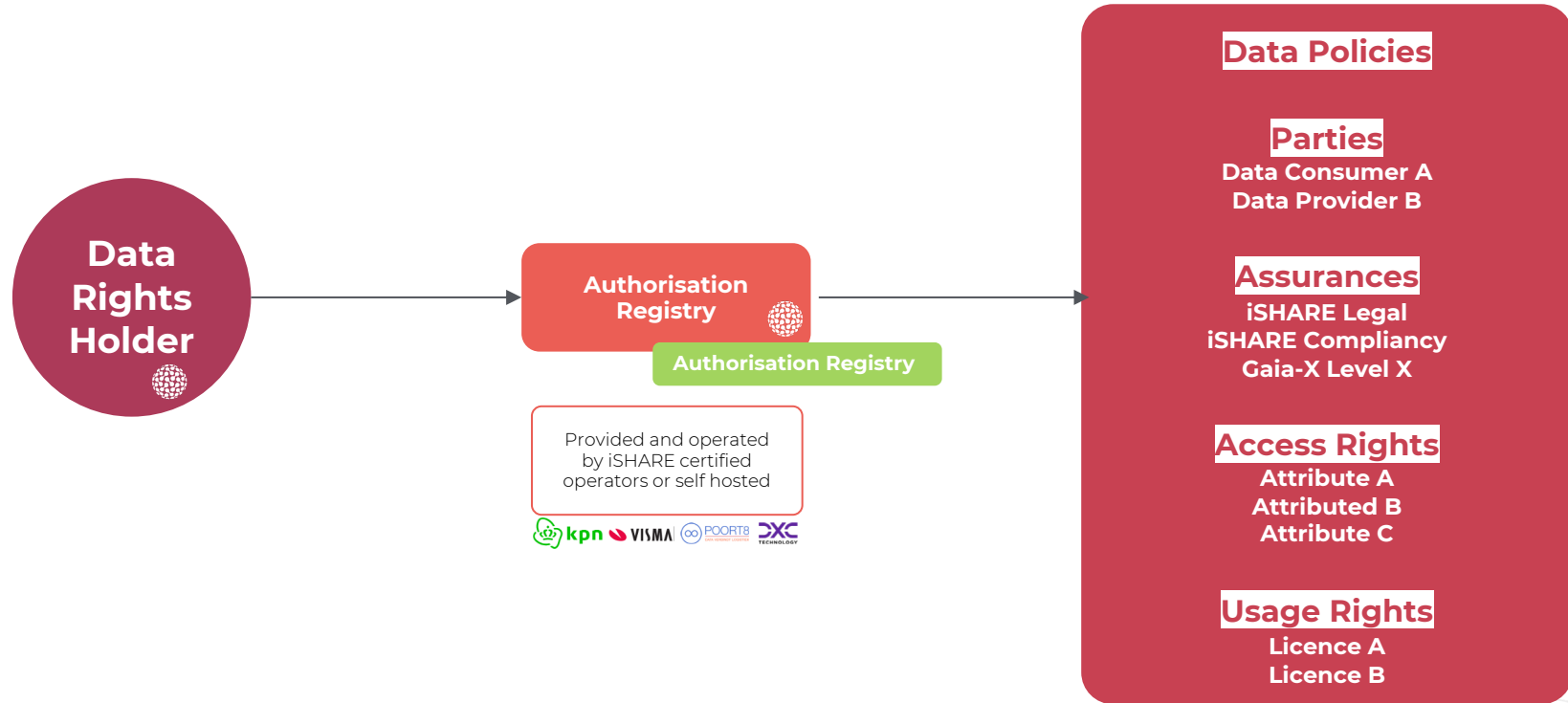
Usage & Purpose rights

Secure & Ethical Usage

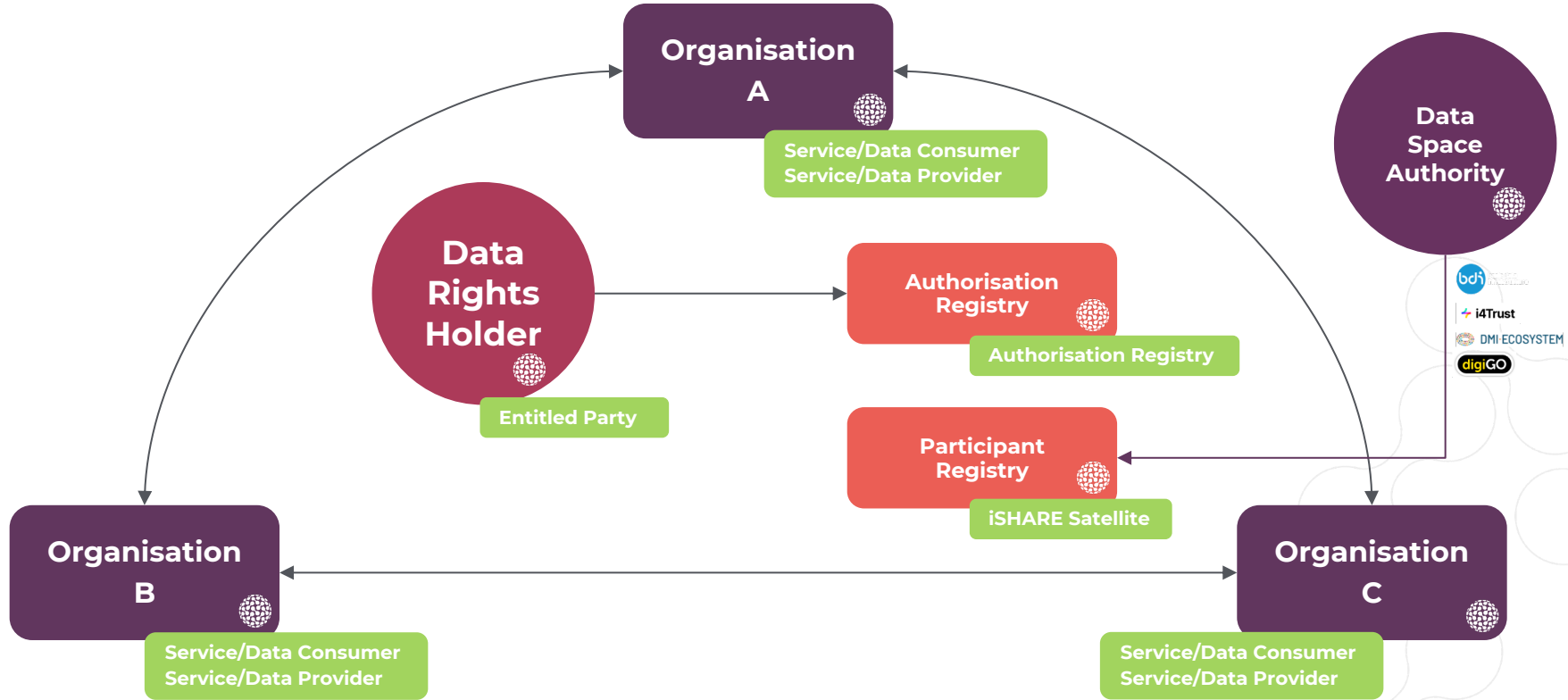
And hence, your data being controlled in every step



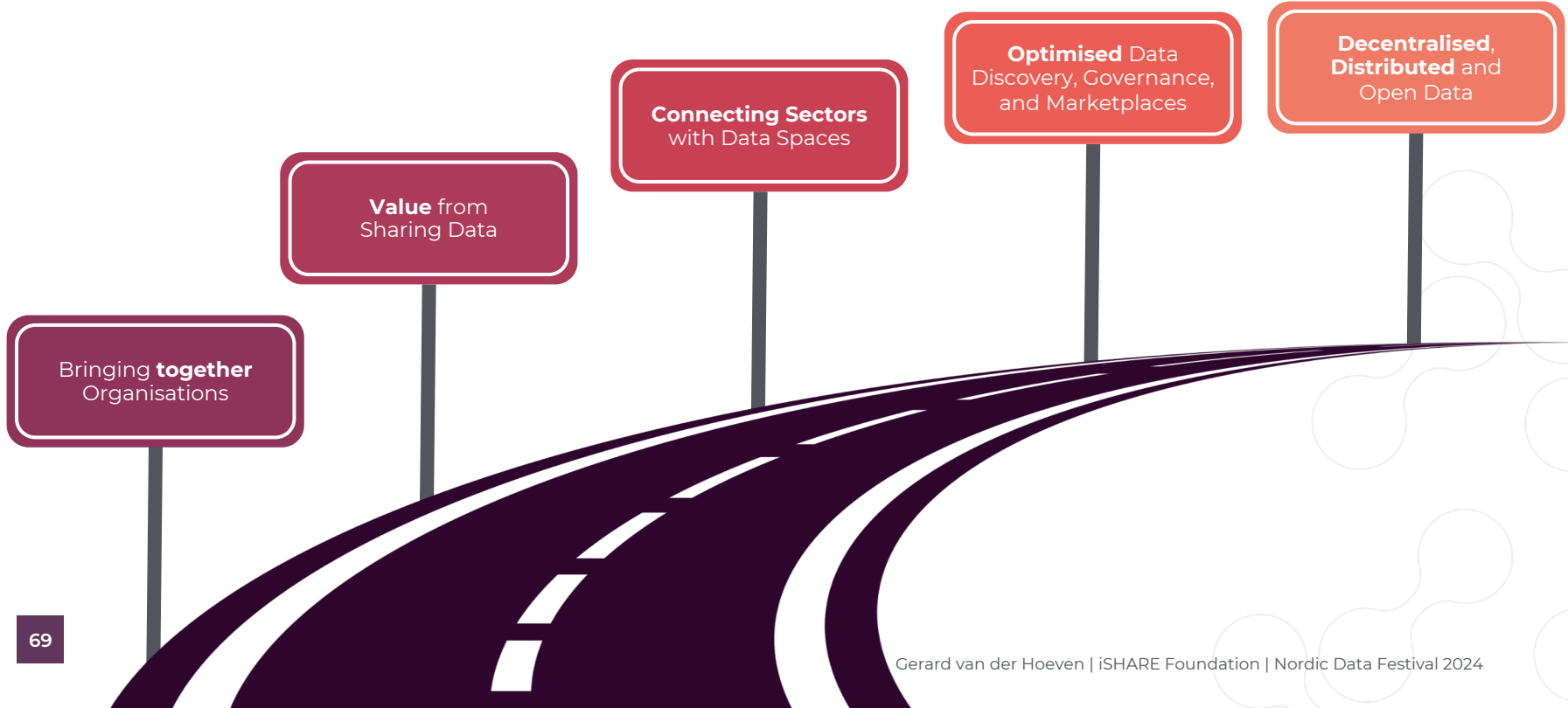
Enabling detailed control of your data through legally covered policies



Through the Trust Framework



The iSHARE Scheme and Trust Framework enables cross sector collaboration!



● Ready Building Blocks for Data Spaces

Existing Network of Service Providers and Data Holders

Federated and Open Source
Data Service Provider

Technical Specifications and **Schema** for
Federated **Data Sovereignty**

Federated and Open Source
Consent Policy Registry

Trust Framework for
participant onboarding

Open Source
Certification Tooling

Federated and Open Source
Participant Registry

Legal Coverage for Data Exchange + **Dynamic Terms** for every exchange

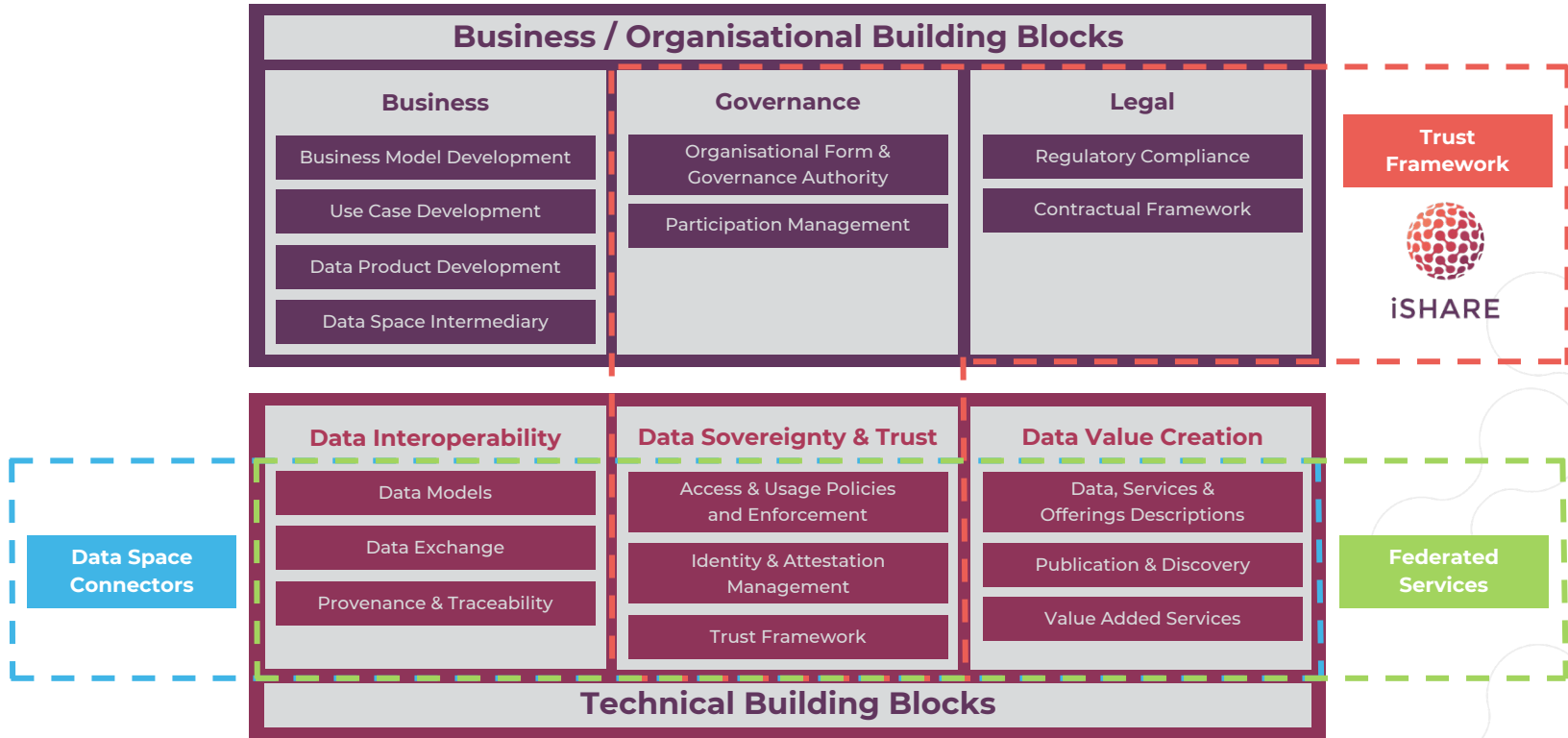
Saving Time and **Creating Trust Interoperability**

Data space framework

Data space components

Trusted Network

In line with the DSSC Building Blocks



● iSHARE Trust Framework Core Elements

Federated Authorisation Registry

standard, including API definitions and procedures, and service providers.

Federated Participant Registry of

Verified Organisations (participants in data spaces), digitally verifying credentials & authorisations, and retrieving pointers to authorisations & data offerings.

Shared **International Legal Framework** covering data sharing and usage.

iSHARE Satellite

(IDSA, ParIS, Gaia-X Clearing House)

- Register Participants (DLT)
 - Signed contracts
 - Certificates
 - Capabilities end-point
 - Authorisation end-point

iSHARE Legal Framework for **confidential business data sharing**

- A tested and proven legal framework for one-to-many data sharing, governed by the iSHARE Foundation
- Certified parties

Provided by the iSHARE certified ecosystem

Certified Participant Registries / Data Space Authorities



DMI ECOSYSTEM



Rijksdienst voor Ondernemend Nederland



Certified Authorisation Registries

portbase®



POORT8
DATA VERBINDT LOGISTIEK



DXC
TECHNOLOGY



iSHARE
ECOSYSTEM

Certified Implementation Partners

Crebos



VISMA

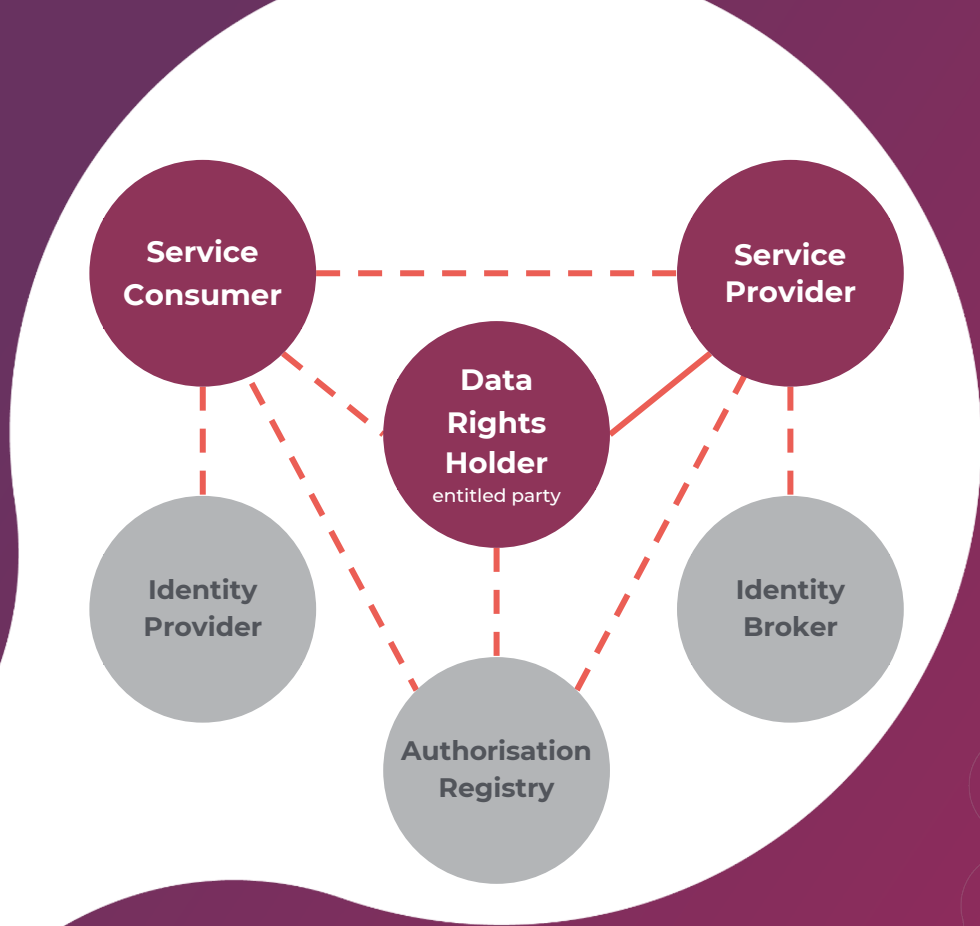
CGI

DXC
TECHNOLOGY

innOPAY

Legend

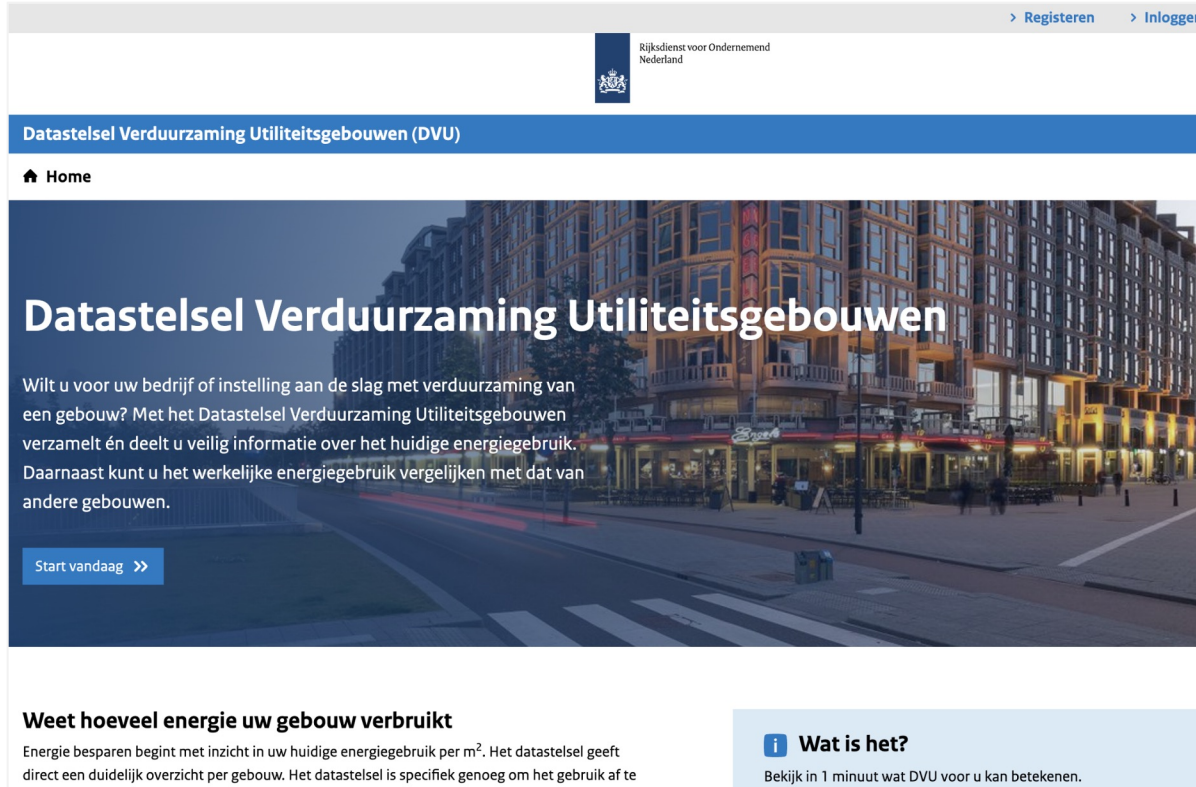
- Adhering Role
- Certified Role
- Mandatory Relation
- - - Conditional Relation



Use Case

Climate Agreement Reporting

Netherlands: Green Deal Data Space



> Registeren > Inloggen

Rijksdienst voor Ondernemend Nederland

Datastelsel Verduurzaming Utiliteitsgebouwen (DVU)

🏠 Home

Datastelsel Verduurzaming Utiliteitsgebouwen

Wilt u voor uw bedrijf of instelling aan de slag met verduurzaming van een gebouw? Met het Datastelsel Verduurzaming Utiliteitsgebouwen verzamelt én deelt u veilig informatie over het huidige energiegebruik. Daarnaast kunt u het werkelijke energiegebruik vergelijken met dat van andere gebouwen.

Start vandaag >>

Weet hoeveel energie uw gebouw verbruikt

Energie besparen begint met inzicht in uw huidige energiegebruik per m². Het datastelsel geeft direct een duidelijk overzicht per gebouw. Het datastelsel is specifiek genoeg om het gebruik af te

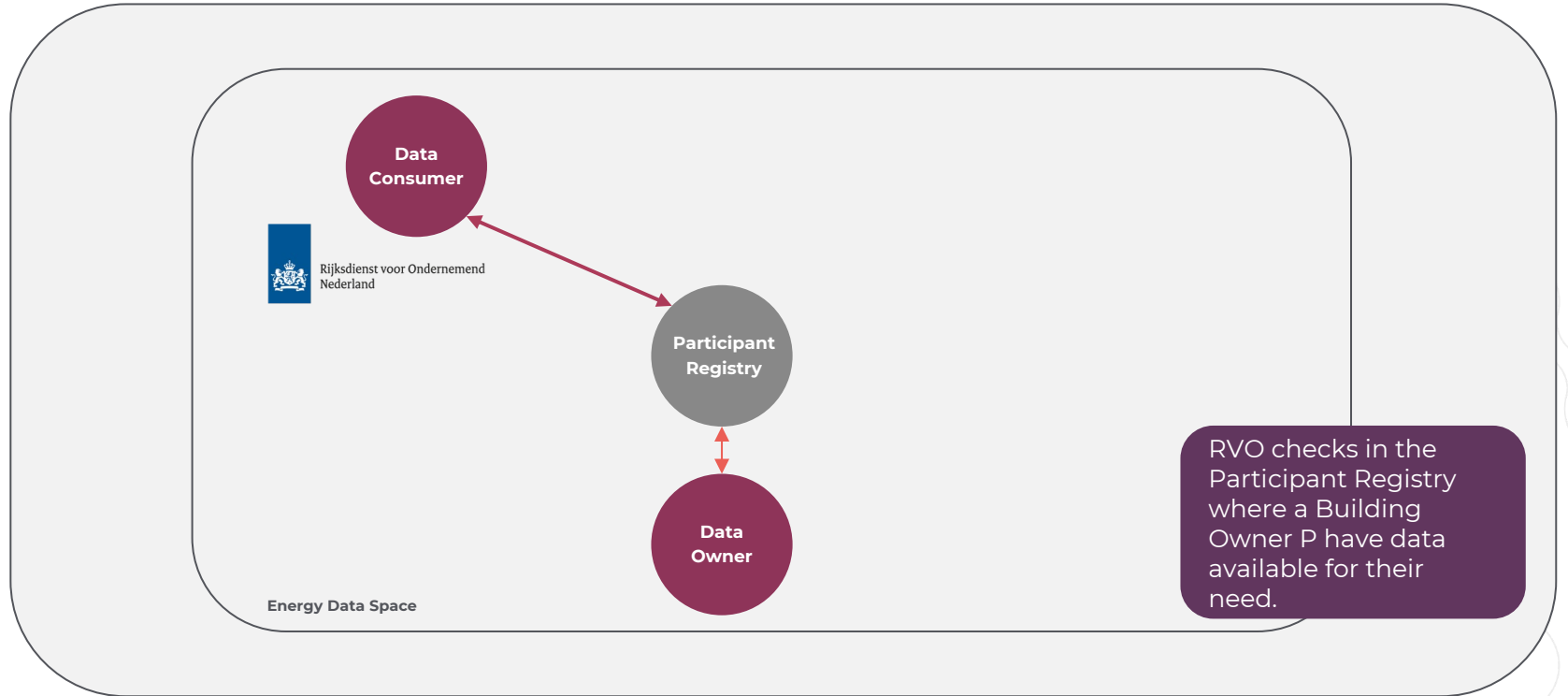
Wat is het?

Bekijk in 1 minuut wat DVU voor u kan betekenen.

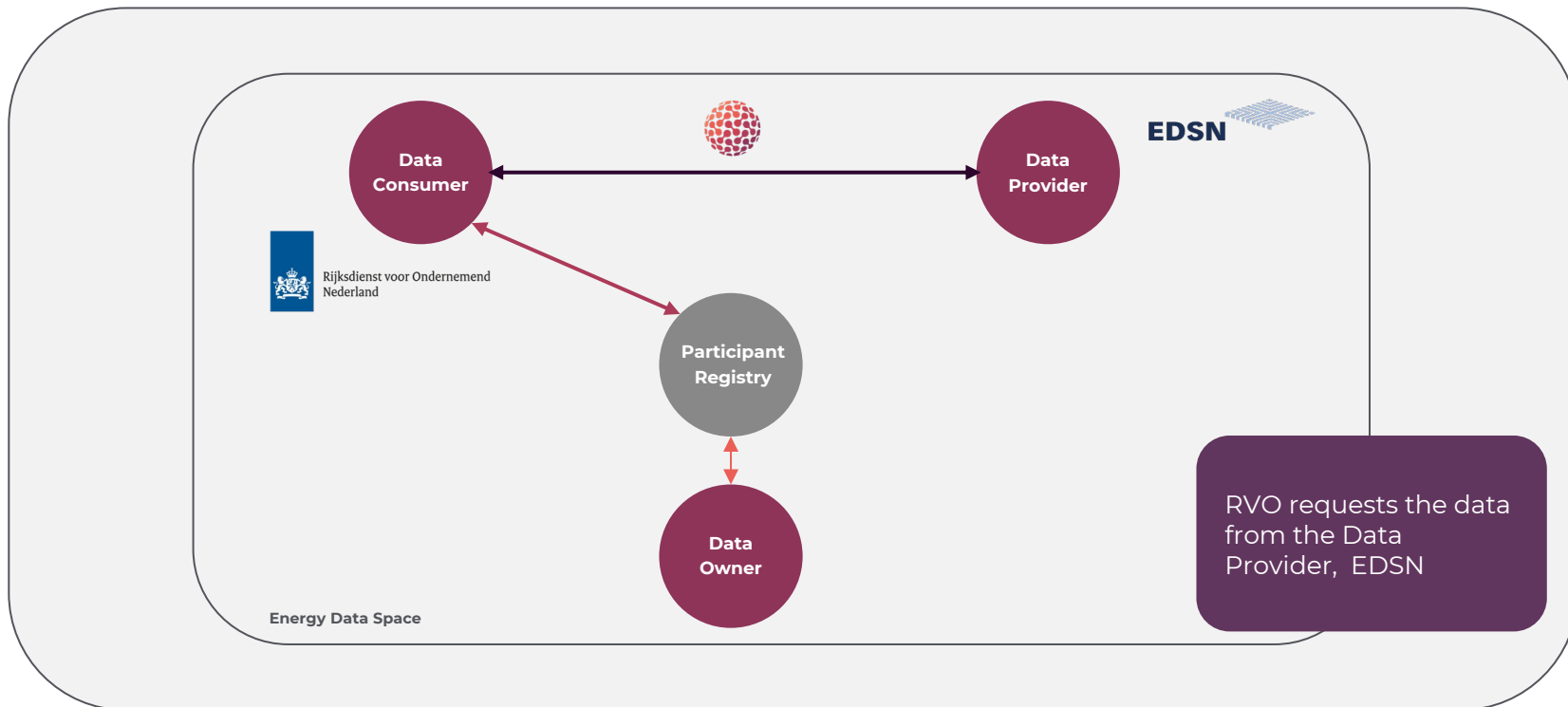
Climate Agreement Reporting



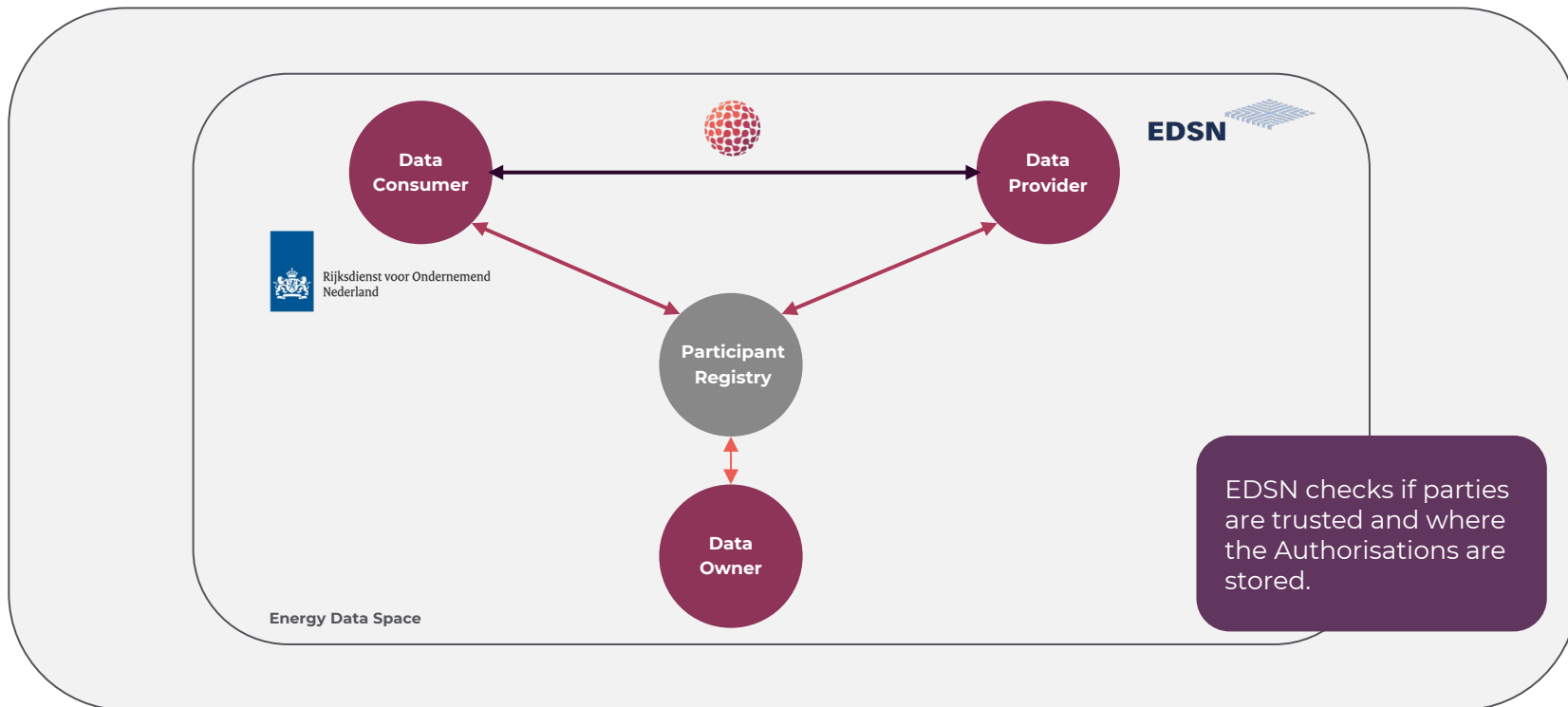
Climate Agreement Reporting



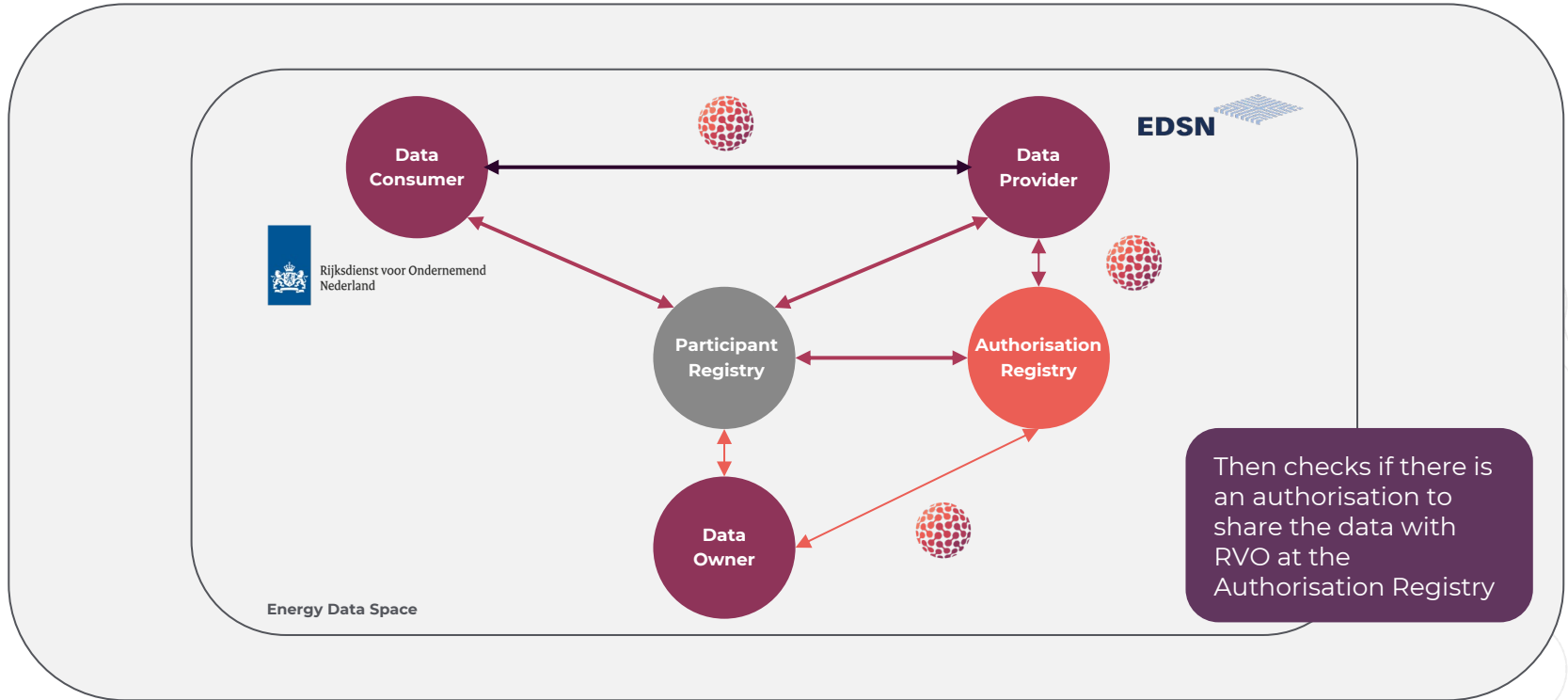
Climate Agreement Reporting



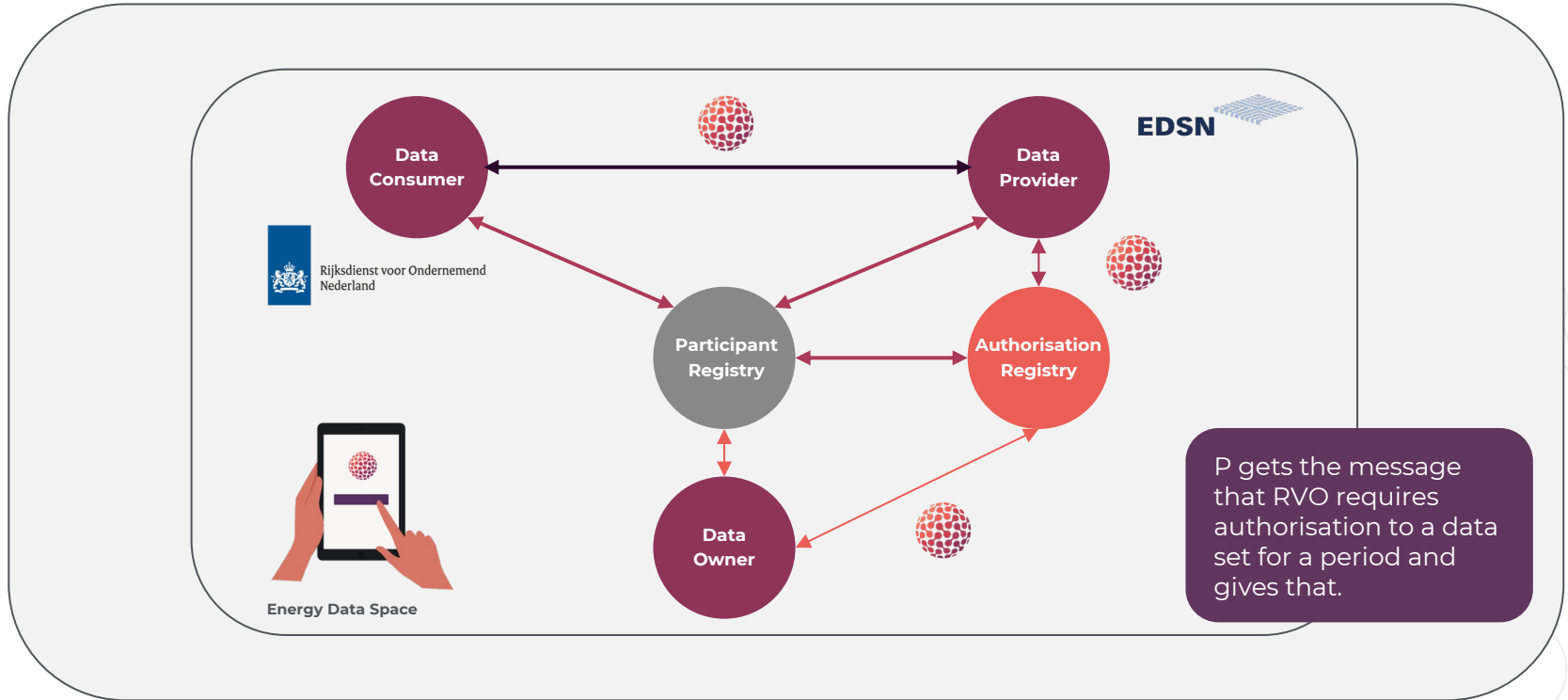
Climate Agreement Reporting



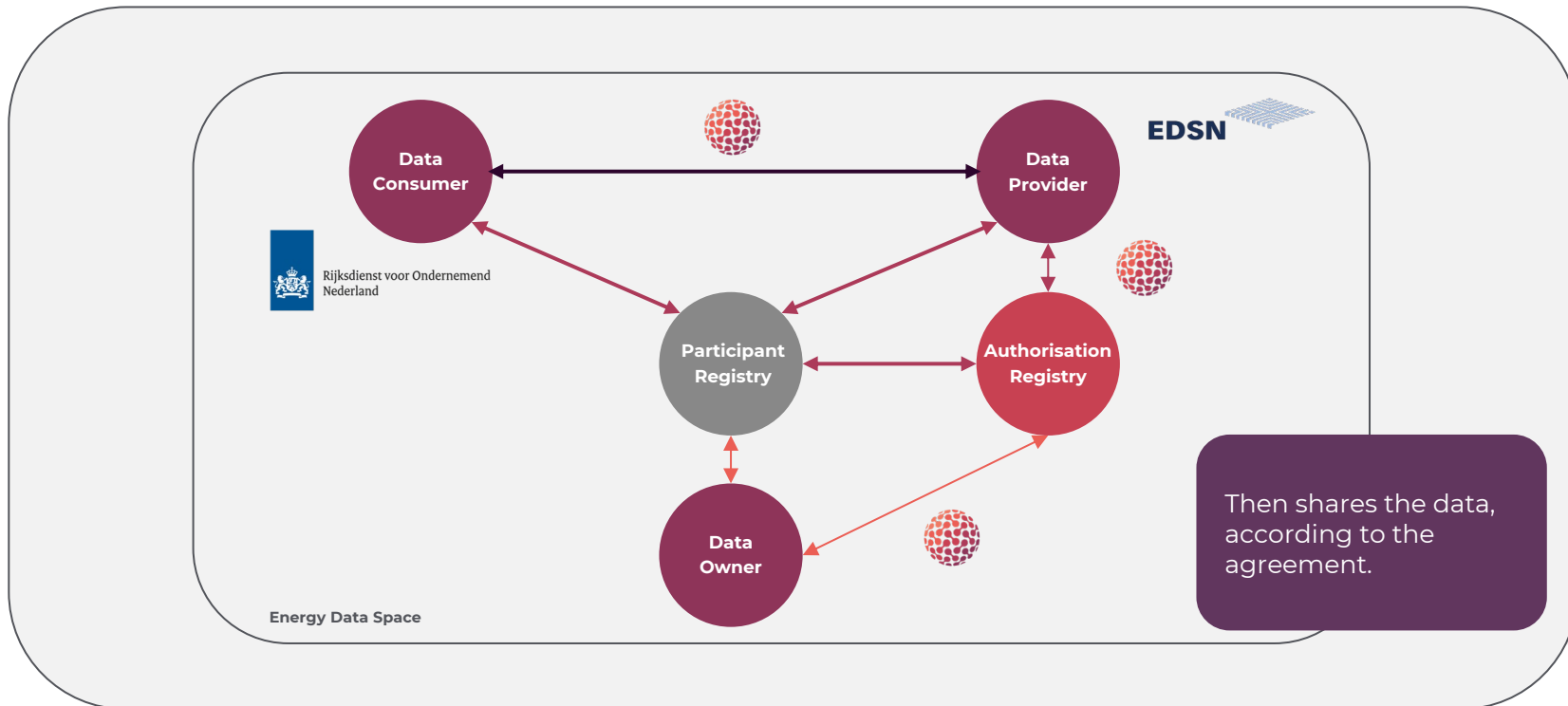
Climate Agreement Reporting



Climate Agreement Reporting



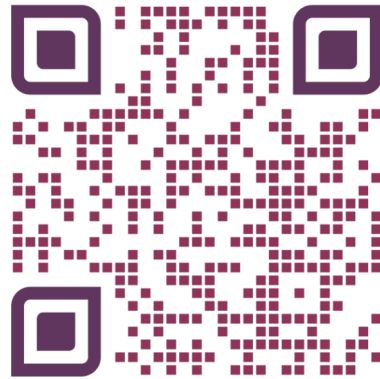
Climate Agreement Reporting





Download >

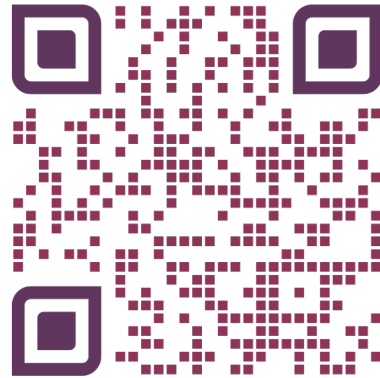
Cookbook for Data Spaces





Get started >

Governance Template for Data Spaces



Q&A



iSHARE

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Kalle Hynönen

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Iiris Rantanen

Senior Associate, Krogerus

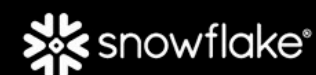
The Data Laws and Related Regulations in Works



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krogerus

The Data Laws and Related Regulations in Works

Nordic Data Festival 2024

Kalle Hynönen & Iiris Rantanen, Krogerus

10 April 2024





European data strategy
(February 2020)

"The European data strategy aims to make the EU a leader in a data-driven society. Creating a single market for data will allow data to flow freely within the EU and across sectors for the benefit of businesses, researchers and public administrations."

EU's data strategy

The Commission's regulatory package consists of:

Data Governance Act, DGA

Entered into force on 23 June 2022

Digital Markets Act, DMA

Entered into force on 1 November 2022

Digital Services Act, DSA

Entered into force on 16 November 2022

Artificial Intelligence Act, AIA

Final text adopted by the Parliament on 13 March 2024

Data Act, DA

Entered into force on 11 January 2024 : date of application principally on 12 September 2025



krogerus

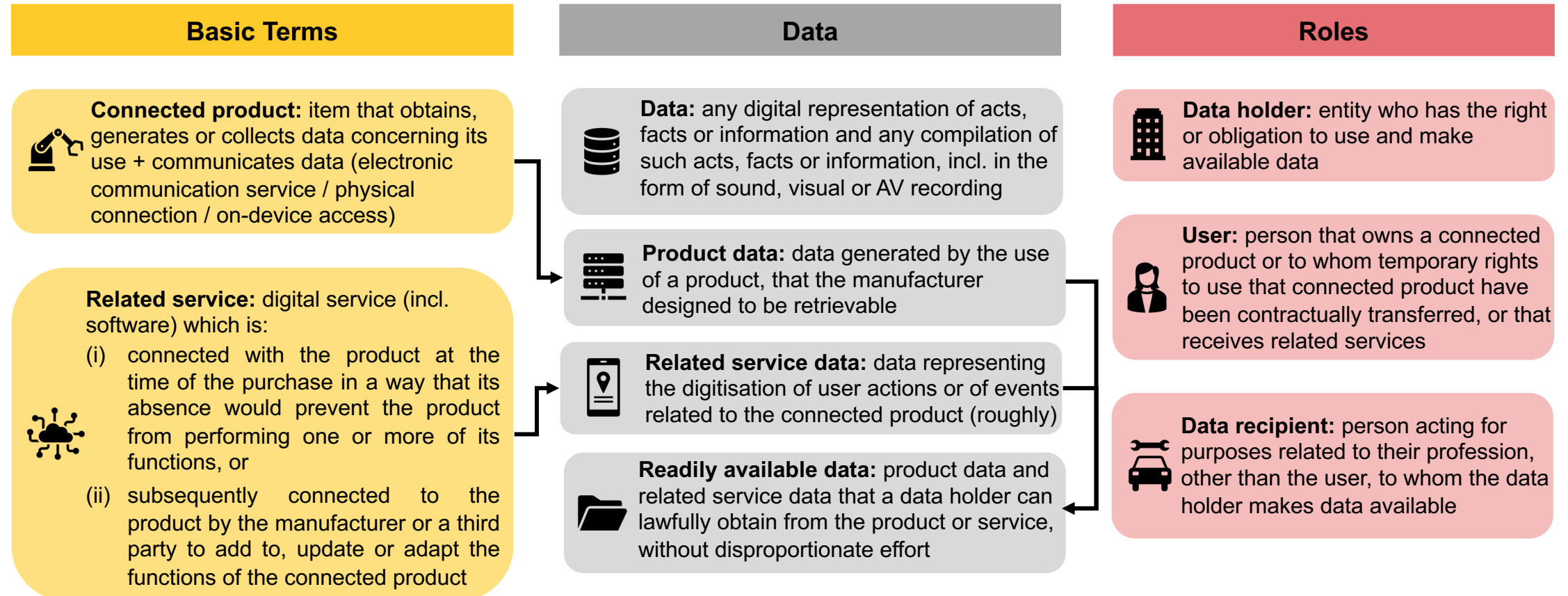
Data Act: Key terms and obligations



Data Act: main objectives

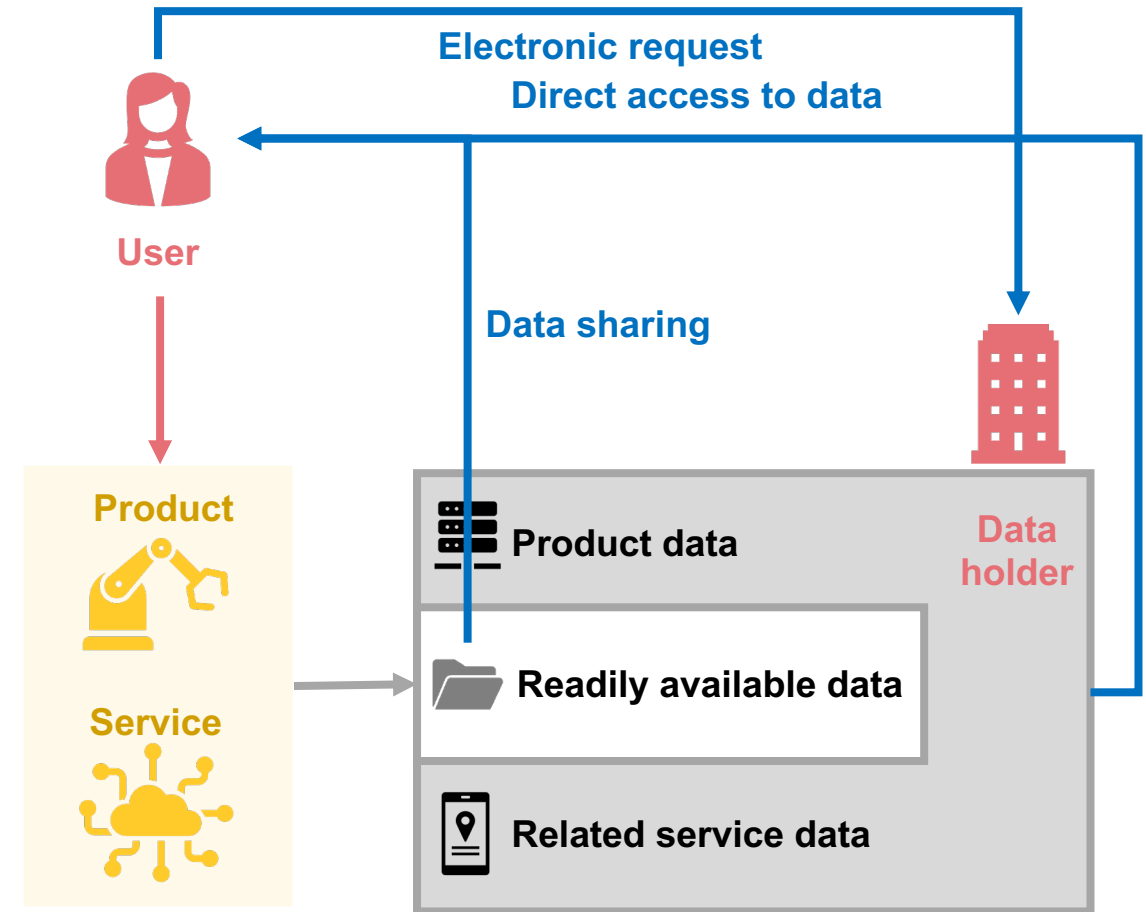
- To create a right to the user (B2B & B2C) to receive information about the data produced by products or related services, as well as the right to access and use the data – both personal and non-personal data
- To create an opportunity for repair and aftermarket service providers and other similar third parties to access data at the user's request
- To improve, in particular, the position of SMEs in the data economy market through special provisions
- To ensure that public sector bodies can use the data held by private sector entities in exceptional situations
- To facilitate the switching between data processing services and their compliance with requirements as well as enhancing data portability

Key terms (Article 2)



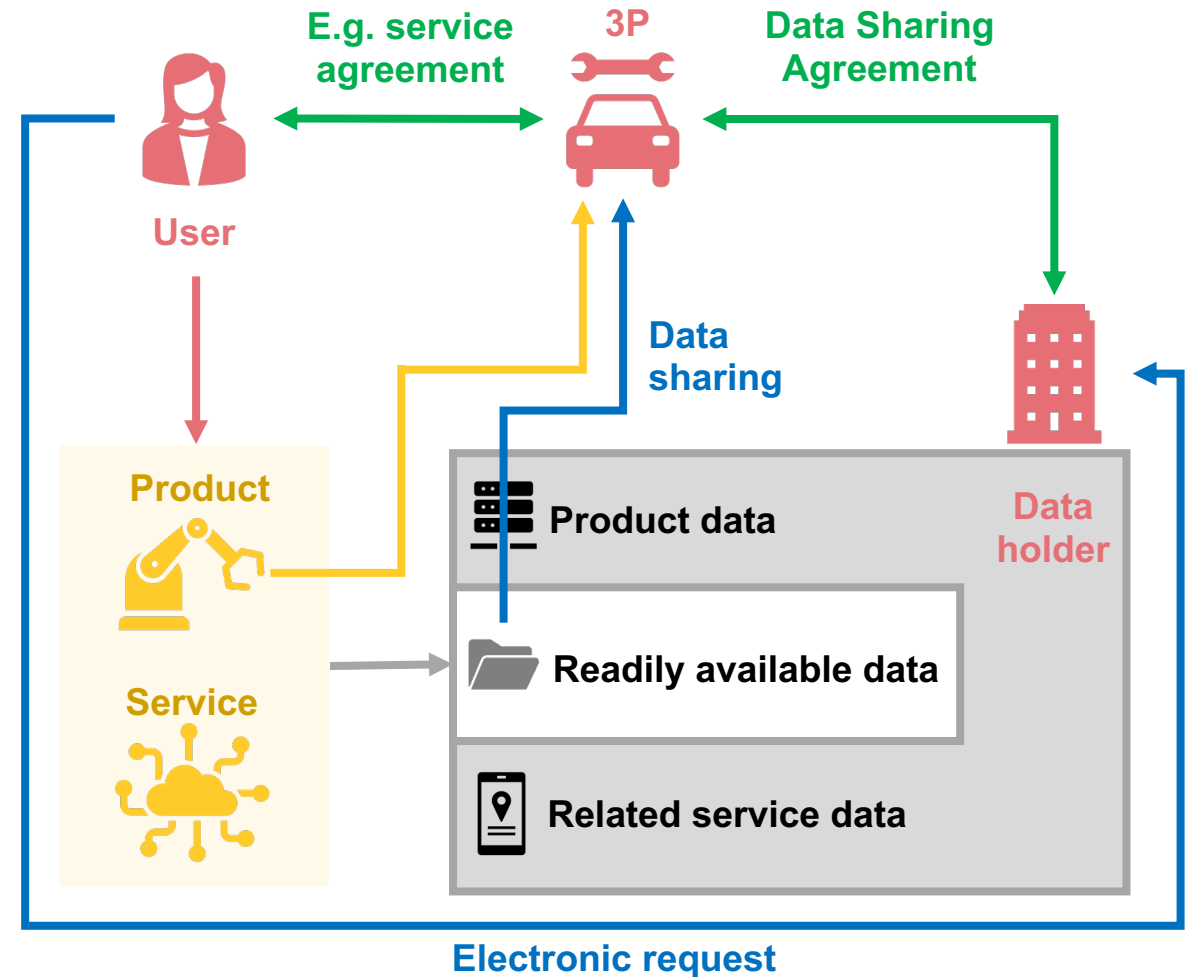
Data sharing obligations – user (Article 4)

- **Please note:** data sharing obligations are generally limited to raw data, pre-processed data and necessary metadata
 - **Processed data** (i.e. data which has required additional investments to process) is not normally subject to sharing obligations
- Generally, **product and/or related service data** (and the necessary metadata) must be available to the user from the product or service
 - Data holders shall make readily available data easily, securely, free of charge, in a comprehensive, structured, commonly used and machine-readable format
- If the above is not possible, the data holder shall provide **readily available data** to the user on the basis of a simple electronic request
 - The user shall receive the data in accordance with the above requirements + without undue delay and of the same quality as is available to the data holder and if possible, continuously and in real-time



Data sharing obligations – third parties (Article 5)

- The data holder shall make the **readily available data** + metadata available to a **third party (3P)** at the request of the user or its representative
 - Previous additional requirements also apply, although it must be free of charge only to the *user*
- Third-party data usage is limited, including:
 - Shall only use the data for purposes agreed with the user
 - Generally, data should be deleted once the purposes have been achieved
 - Shall only grant further access to the data if agreed with the user and the recipient agrees to protect the trade secrets contained in the data
- If B2B, the data holder and a third party (/data recipient) enter into a **data sharing agreement** taking into account the requirements of **Chapter III** of the Act (incl. FRAND)



Data Spaces

- The European data strategy set out the path to the creation of Common European Data Spaces in a number of strategic fields: health, agriculture, manufacturing, energy, mobility, financial, public administration, skills, the European Open Science Cloud
- The aim is to overcome existing legal and technical barriers to data sharing and boost data-driven innovation
- Stakeholders' role is essential – actors in each sector can contribute to shaping these spaces in their sectors
- Legislative instruments function as enablers
 - Data Act
 - Data Governance Act
 - EHDS and other sector-specific data space regulations
 - Guidelines from the European Data Innovation Board (EDIB)



The Data Act will become applicable on 12 September 2025 - how to prepare?

1

Clarify the scope

What data is covered by the Data Act?

Which products/services are covered by the Data Act?

2

Identify your role and responsibilities

Manufacturer of the product

- Make sure your product enables data sharing

Data holder

- Identify the different types of data (personal / non-personal / trade secrets)
- Enable data sharing in practice
- Make sure you inform users

Data recipient

- Make sure you only process data for the agreed purposes and under the agreed conditions

User

- Make sure you get access to the data as required by the Data Act

All

- Update your contracts to take into account your rights and obligations under the Data Act
- Review your data processing practices and documentation: how do you comply with both the GDPR and the Data Act in parallel?

Contact details



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- Intellectual Property
 - Technology & Data
 - Commercial Contracts & Outsourcing
-



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- Intellectual Property
 - Commercial Contracts & Outsourcing
 - Technology & Data
-

krogerus

Thank you!

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**BUSINESS
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John Bruce

CEO of Inrupt

**The Shift from
Traditional 'Pipeline'
to 'Platform' Business**



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 snowflake®



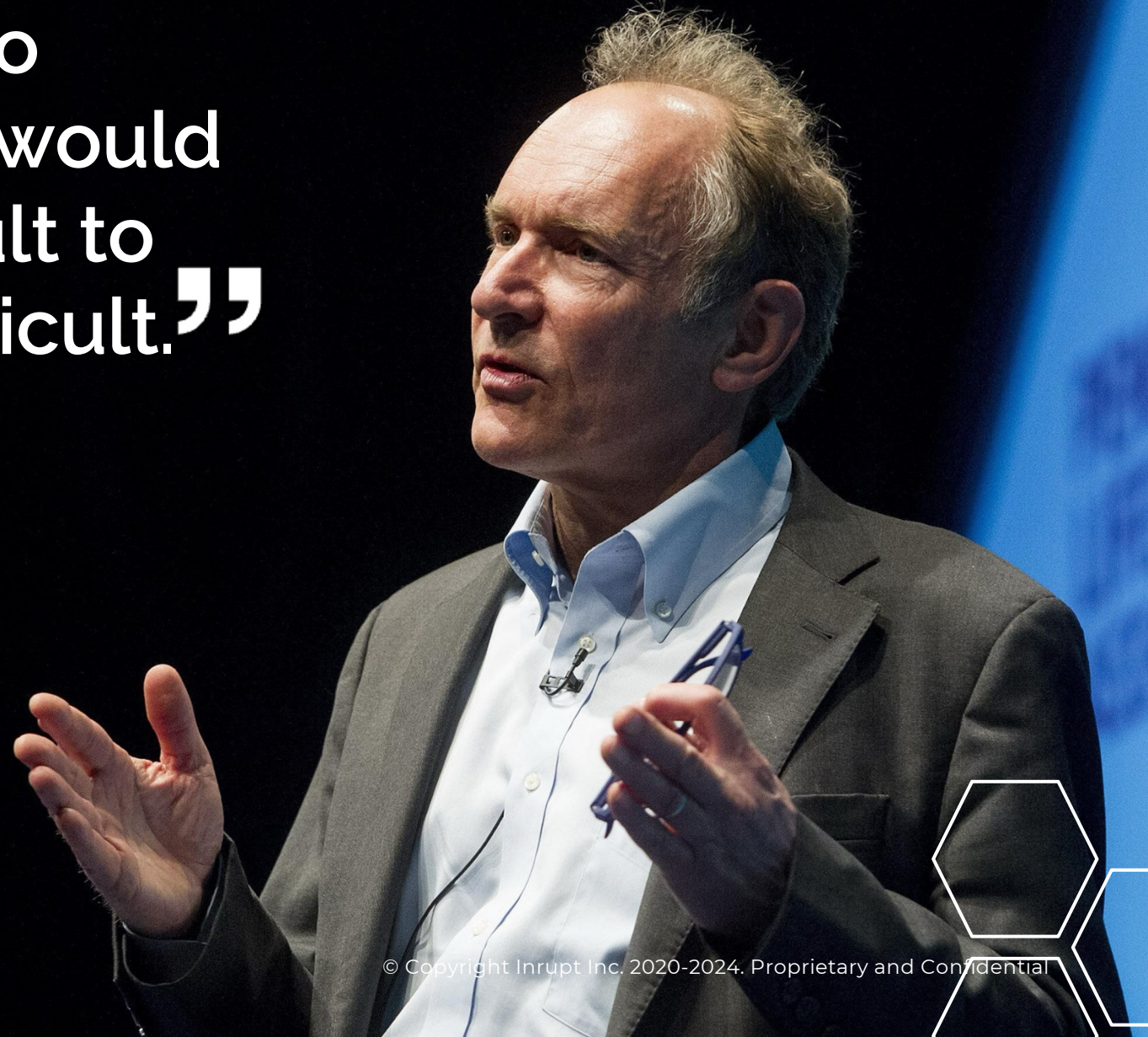
inrupt

CREATING A GLOBAL ECOSYSTEM
FOR DATA AND INNOVATION

“ It used to be difficult to explain what the web would be like. Now it's difficult to explain why it was difficult.”

Sir Tim Berners-Lee

CTO & Co-founder, Inrupt
Creator of the Solid platform
Inventor of the World Wide Web



The challenge of non-linear innovation

Don't predict
the future...



The Web is evolving in phases



Web 1.0

Read-only Apps

URL HTML HTTP

1989

World Wide
Web invented



The Web is evolving in phases

facebook

twitter

You Tube

Web 2.0

Read/Write Apps

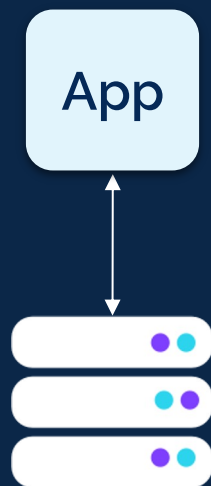
JavaScript Web APIs

1989

2000

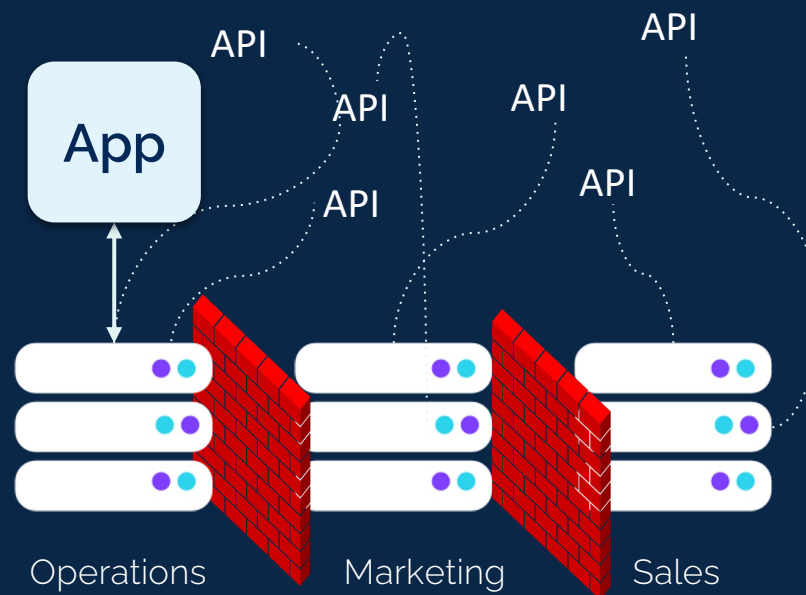
Data silos are everywhere

APP-CENTRIC



User data is tightly coupled with applications

DATA SILOS




Data silos create fragmented, duplicated, and decaying data.

WEB OF SILOS



Customer data that resides within a walled garden stays there

Solid  is the third layer of the Web.

Web 3.0

Read/Write *Data*

Global SSO AuthZ Universal API

Today

1989

2000

Pipeline to Platform



A futuristic industrial scene with a large glowing pipe and various digital icons. The background is a dark blue gradient with a complex network of glowing lines and nodes. In the center, a large, dark, cylindrical pipe extends from the left towards the right, with a bright orange and red glow emanating from its open end. The pipe is surrounded by a dense network of smaller pipes, valves, and machinery. Numerous colorful icons are scattered throughout the scene, including a cloud with a dollar sign, a heart, a gear, a globe, and various symbols representing technology, communication, and industry. The overall atmosphere is one of advanced technology and industrial innovation.

Can I?

Should I?

How will I?

Don't predict
the future...

Enable it!



Thank you



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