



Co-funded by
the European Union



Data Sharing Bootcamp



October – November 2023



Data Sharing Bootcamp format for SMEs

Summary of what is in this document



Below you will find materials presented during the two workshops that CoE-DSC was invited to give on behalf of EDIH as part of the Data Sharing Bootcamp for European Digital Innovation Hub Noord-West Nederland



Workshop 1:

- ✓ Covers data sharing developments in the EU & the Netherlands
- ✓ Informs about the value of data sharing in practice
- ✓ Helps participants to start brainstorming opportunities for their data sharing use cases based on CoE-DSC toolkit (Data Sharing [Playbook](#) and [Blueprint](#))



Workshop 2:

- ✓ Covers a deep dive in using CoE-DSC toolkit to help further creation of a concrete data sharing use case
- ✓ Provides understanding on the interaction models and BLOFT framework
- ✓ Helps participants to detail their use case in terms of (1) interaction model with roles & responsibilities, (2) BLOFT elements relevant for the case and (3) potential governance structures



Defining Data Sharing value for SMEs: Data Sharing Bootcamp – Workshop 1

Agenda

	<i>Time</i>	<i>Remarks</i>
1. Welcome & Introduction	15 min	Plenary
2. EU & NL data sharing developments and CoE-DSC role	30 min	Plenary
	<i>Break: 10 min</i>	
3. Value of data sharing in practice (CoE-DSC use cases)	30 min	Plenary
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	<i>Break 10 min</i>	
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	<i>Break: 10 min</i>	
6. Closing & next steps	20 min	Plenary
	<i>Total: 240 min</i>	

What we aim to achieve today – goals of the 1st workshop

1



Participants gain knowledge of data sharing developments in EU & the Netherlands and understand the role of the CoE-DSC

2



Participants understand the value of data sharing in practice

3



Participants have defined data sharing opportunities for their own business context & become aware of next steps

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Data is a unique commodity with large value creation potential if it is shared and re-used throughout the economy



Data is renewable and shareable

- Data is the new oil, but better:
 - It has the unique characteristic of being an easily shareable and re-usable asset (“non-rivalrous”)
 - The same dataset can support an unlimited number of applications at the same time
- This means that one data(set)(point) can create economical and societal value in multiple contexts simultaneously



External data sources deliver new insights

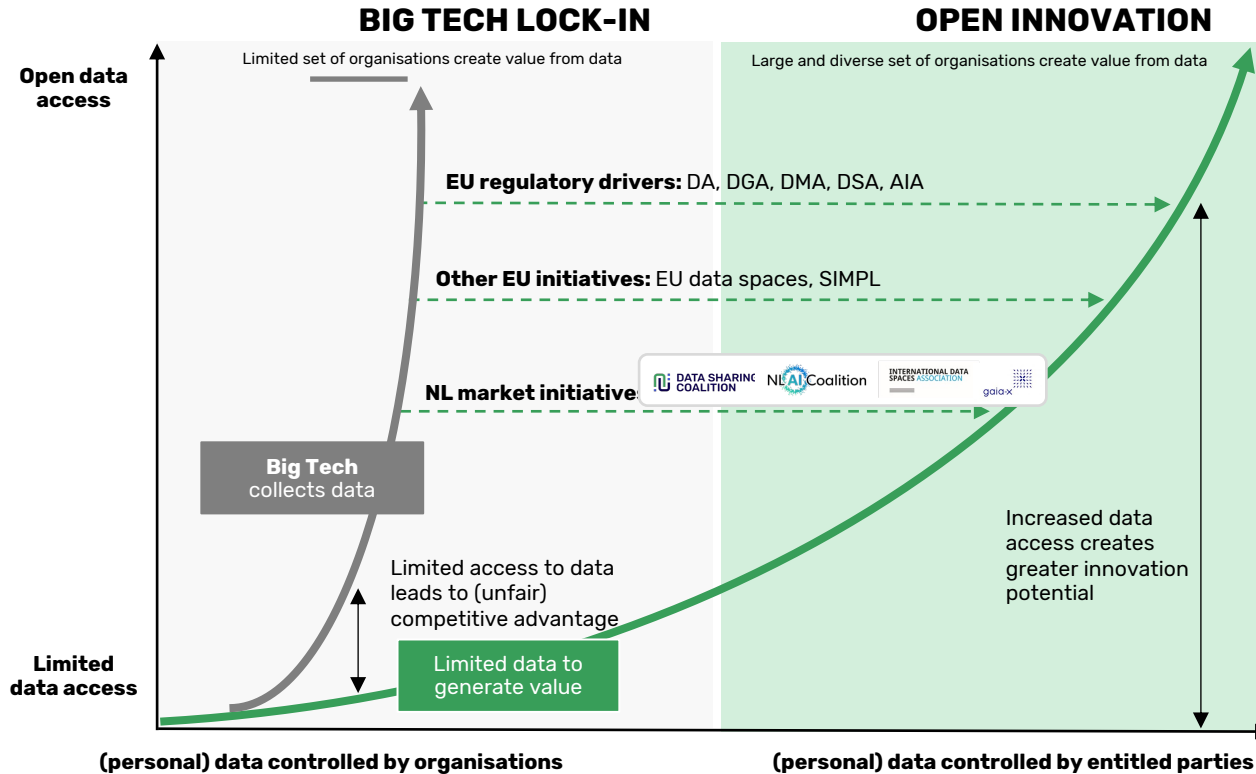
- If data is shared widely, organisations gain access to new data sources, which they can use to create new value for their organisation, such as:
 - more efficient processes
 - improved risk management
 - new product and shared development



Data sharing contributes to solving societal challenges

- Sharing data across sectors or domains can also make an important contribution to societal themes such as:
 - the emergence of smart cities
 - digitisation of healthcare
 - smart mobility
 - energy transition

Large-scale data sharing under control of entitled party stimulates innovation and value creation



Source: IMEC, Universiteit Gent, INNOPAY and TNO analysis

The EU drives innovation by creating a single data market and levelling the playing field through regulation

EU data strategy



“The European data strategy aims to make the EU a leader in a data-driven society. Creating a single market for data will allow it to flow freely within the EU and across sectors for the benefit of businesses, researchers and public administrations” - European Commission, 2020

Upcoming regulations stem from the EU data strategy



Data Governance Act

Aims to boost data sharing by establishing intermediary trust and making more data available



Data Act

Aims to regulate access and portability of IoT data in B2C, B2B & B2G relations



Digital Services Act

Aims to create an online environment that is safe for users, transparent, and free from discrimination



Digital Markets Act

Aims to prevent “gatekeepers” from imposing unfair market conditions on its platform users



Artificial Intelligence Act

Aims to manage associated risks with development and use of AI in systems

In line with EU Data Strategy, Dutch landscape of 10 data spaces attracts funding to go from infancy to accelerated development

Dutch initiatives categorised per sector



Other Dutch initiatives



Data spaces definition

- Data space - is the sum of all its participants utilising a common infrastructure for trustworthy data sharing, based on commonly agreed principles

Key figures

Non-exhaustive and indicative

- About 50 NL data space initiatives are in development following Common Data Spaces as identified by the European Commission and more
- Dutch authorities and market parties released more than 450 mln € for the development of data spaces
- Dutch organisations contribute more than 96 mln € in-kind investments per year
- Currently about 500 Dutch organisations are connected to a 'live' data spaces
- Less than 1% of Dutch organisations are currently involved in the development of Data Spaces

CoE-DSC supports development of data spaces, infrastructure development and supports Dutch data sharing community

CoE-DSC programme tracks

- 1

Data Spaces



Support data sharing initiatives in the various stages of the development of a (cross-) sectoral use cases
- 2

Harmonisation



Research and development to arrive at generic data sharing infrastructure and tools
- 3

Community



Expanding community with new participants, developing new partnerships and share achieved results

What value do we provide for initiatives

- ✓ **Maximum reuse of existing knowledge and solutions**, building on each other rather than reinventing the wheel each time
- ✓ **Insight in EU developments** and providing a channel to EU initiatives
- ✓ Making **scarce data-sharing expertise easily findable** and unlockable to market and initiatives
- ✓ **One central hub** for data sharing challenges

Partners CoE-DSC:



CoE-DSC represents a large number of organisations that share data, consume data or facilitate data sharing

Over 200 participating organisations...

Non-exhaustive

...represent different groups



Industry associations that represent their members



Data sharing initiatives and software providers that represent their end-users



Standards institutions that represent users of standards

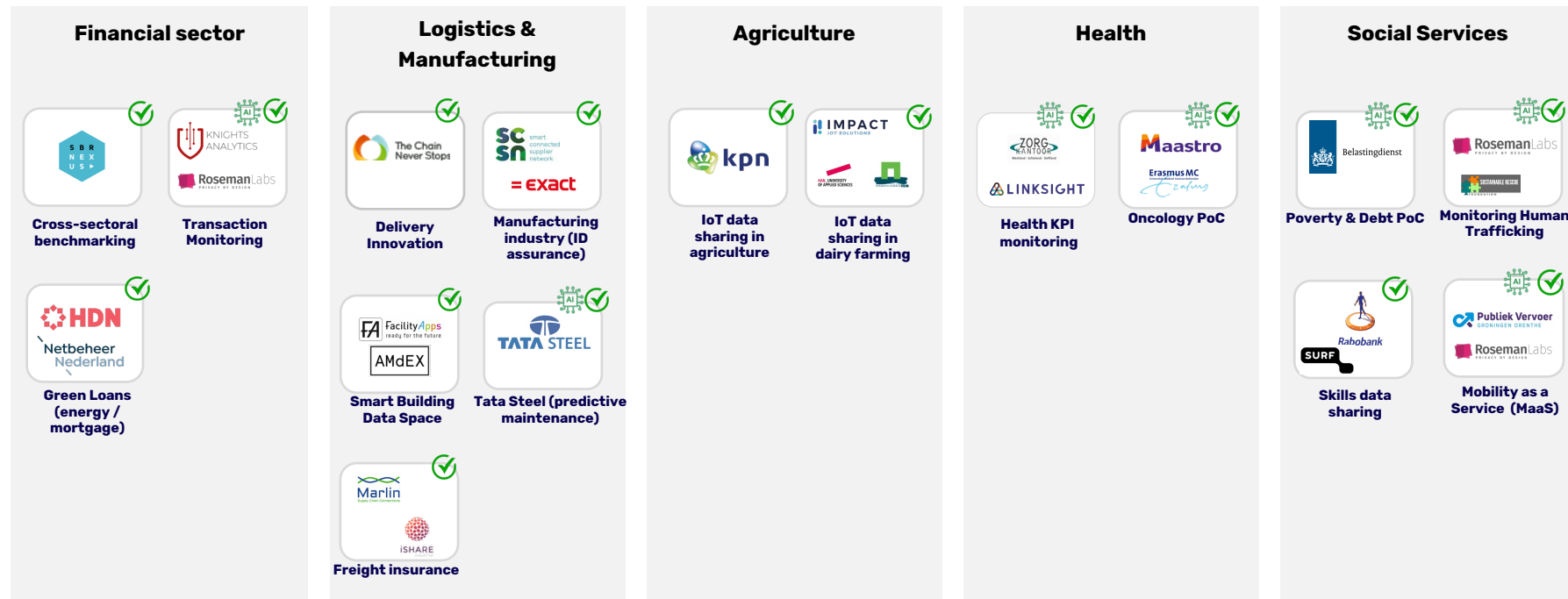


Companies that create value with data themselves

Various CoE-DSC use cases reflect that data sharing can aid in different contexts and sectors

CoE-DSC use cases

Non-exhaustive



Legend: ✓ phase completed ⚙️ in progress 🧠 includes AI component

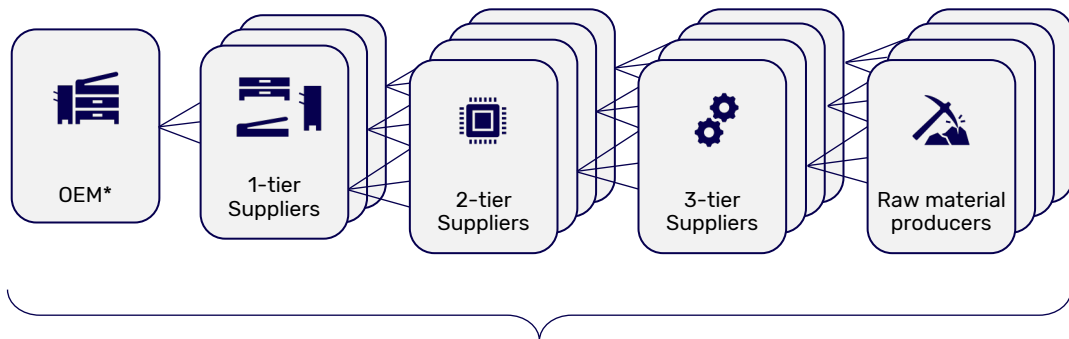
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Manufacturing supply chains are complex and face inefficiencies in a form of costs and risks due to manual processing of orders

State of the manufacturing supply chains

Simplified



Data is required for supply chain to operate:

- Order details
- Invoicing
- Bill of Materials (BoM)
- Product price lists
- Delivery times
- Production forecasts

Non-exhaustive

*Original equipment manufacturer

Description:

Situation:

- The manufacturing industry for high tech machinery, consists of complex supply chains, where original equipment manufacturers OEMs (e.g. ASML, Philips) depend on several tiers of suppliers, who require information from each other in order to produce machines
- Orders cascade through the chain. The order data is often stored in non-standardised & manual way within individual ERP systems of participants

Challenges in the supply chain:

Non-standardised manual processing of orders in individual ERP systems leads to following inefficiencies:

- Increased costs, due to administrative burden of changing and updating orders manually
- Increased risks for production failure, due to manual processing of orders being error prone

SCNS is a solution for setting up data sharing and helps to overcome inefficiencies (costs and risks) in the supply chain

Data sharing is needed ...

Having access to the order related data (e.g. product quantity lists, delivery arrival times) in the automated way is beneficial as it allows for:

- ✓ **Costs reductions:** Savings on administrative costs with the direct access to data (i.e. concept of connected smart factories)
- ✓ **Risk reductions:** Automation and standardisation of order processing helps avoid errors that cause failures in production

... but is difficult to set up



1. Scalability barrier:
Traditional connections to share data are set up bilaterally, which serves as a scalability barrier.



2. Platform lock-in:
Using platforms to connect manufacturing companies leads to data monopolies and fragmentation.



3. Lack of trust:
Manufacturers want to remain in control over sensitive data, and without trust they are sceptical to share it.

Solution offered by SCNS



Smart Connected Supplier Network (SCSN) enables the manufacturing industry to share data across company borders via a data standard and allows for quicker, easier and more controlled data exchanges.

Participants (non-exhaustive)

Service Providers (7)



Connectors (10)



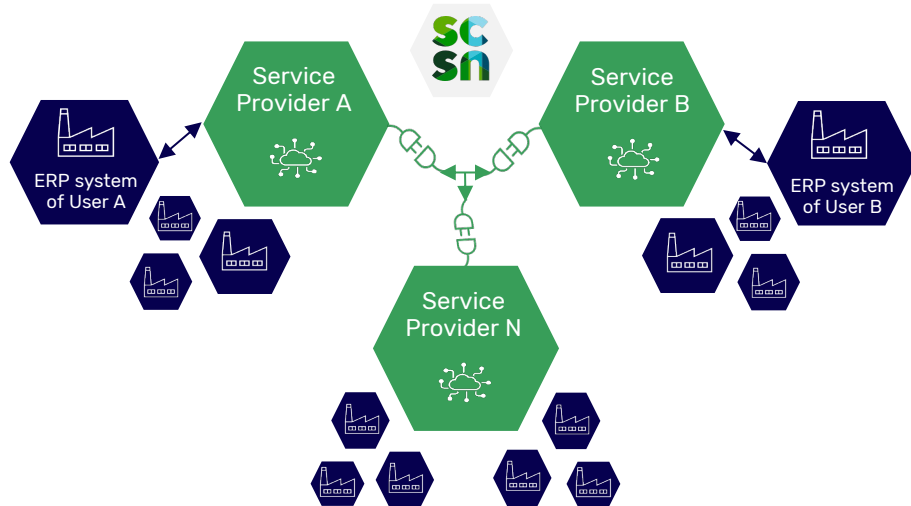
Manufacturing companies (300+)






SCSN helps manufacturers to share data in a scalable and trustworthy way without facing big platform lock-ins

How data sharing was set up (interaction model)

Simplified



Legend:

-  IDS connector from corresponding Service Provider
-  Custom language (IT System and Service Provider dependent)
-  Interaction in SCSN language according to IDS standards

How SCSN addresses challenges



1. Scalability barrier: is solved by SCSN data standard allowing various service providers to connect their users



2. Platform lock-in: is solved by SCSN data space design, where any party can share data in a decentral way, without relying on one platform



3. Lack of trust: trust for sharing data is ensured through agreements & digital identity procedures (IAA)

Involved roles



Service Providers (SPs) – onboard and connect users to the SCSN network, and enable data sharing via IDS connectors



Users – companies in the manufacturing supply chain that make data requests and share data with one another



SCSN – plays a supporting role to enable Service Providers and Users in the ecosystem. Note, SCSN doesn't have access to the data being shared.

The SCSN case teaches us that a clear view on the business challenge is key when developing a data sharing use case

3 key-learnings from the SCSN use case



Start with a business challenge: this helps scoping the use case



Know what data you need: this helps defining complexity and stakeholders involved



Know the benefits for all stakeholders: this helps to create buy-in from all the parties needed to make the use case work

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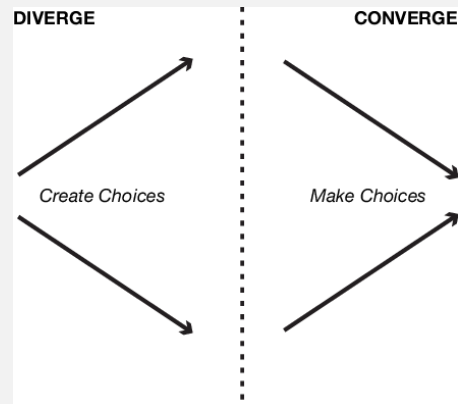
In the remainder of the Workshop 1 we work towards data sharing use cases in the context of your own business



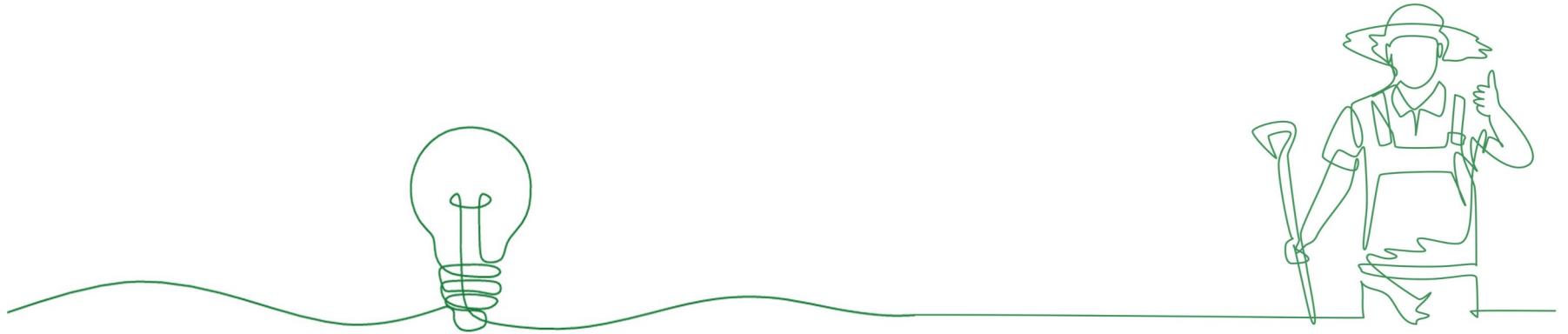
Preparation for the ideation brainstorm:

- 1. WHAT:** In this part of the workshop we will conduct an ideation brainstorm
- 2. WHY:** The goal of the brainstorm is to arrive at a data sharing use case for your business
- 3. HOW:** We'll start understanding your current challenges, then we'll work towards data sharing use cases. You will be guided through the brainstorm in sequential exercises using the diamond model with diverging and converging stages for ideation.
- 4. Regarding materials:** Please find booklets, notes and writing supplies on your table. We are going to utilise those in the brainstorm

Ideation Diamond:



We'll practice ideation with the example of a farmer John Doe before we start with the main part of the brainstorm



The example solution for John Doe exercise



Given situation and challenge:

Situation: John Doe has a farm with smart machinery (drones, irrigation systems) to maintain fields. He works with two parties - a supplier of the smart machinery, and a supplier of chemicals for irrigation.

Challenge: John Doe faces the overgrowth of potato weeds leading to costly maintenance of fields, and reduced crops.

Example Solution for John Doe:

What data to be shared:

- Data from smart machinery: field size, soil quality, seasonal growth data of weeds & crops

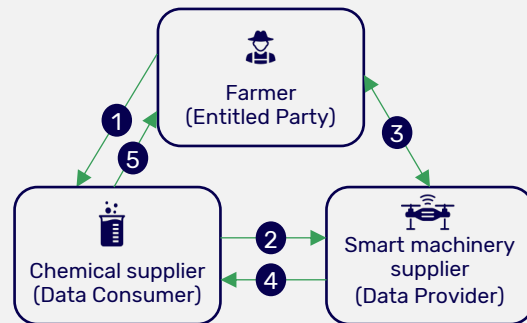
With whom:

- The supplier of smart machinery
- The chemical supplier for irrigation

Result - how challenge is tackled:

- By sharing data with SP of machinery and supplier of chemicals, Farmer can optimise seasonal field irrigation to deal with weeds effectively, and save costs by ordering exact amount of chemicals needed

Simplified Interaction model:



Steps:

- 1 The farmer requests its chemical supplier to provide advice on chemical use based on data from the smart machinery
- 2 The chemical supplier request data from the smart machinery supplier
- 3 The smart machinery supplier asks for and gets permission from the farmer to share data with the chemical supplier
- 4 The smart machinery supplier shares data with the chemical supplier
- 5 The chemical supplier provides advice on chemical use to the farmer, based on smart machinery data

Agenda

	<i>Time</i>	<i>Facilitator(s)</i>	<i>Remarks</i>
1. Welcome & Introduction	15 min	Ruben	Plenary
2. EU & NL data sharing developments and CoE-DSC role	30 min	Ruben	Plenary
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	<i>Total: 240 min</i>		

Main brainstorm: going from (1) challenge recognition to (2) finding data sharing solutions and (3) informed use case choice

PART 1.

Recognising challenges in your business



40 min

PART 2.

Brainstorming solutions



40 min

PART 3.

Rating & choosing the use case best to pursue



15 min

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Recap of what was covered in Workshop 1

1



Participants gained knowledge of data sharing developments in EU & the Netherlands and understand the role of CoE-DSC

2



Participants discovered value of data sharing in practice through CoE-DSC use cases

3



Participants found data sharing opportunities for their own use cases through an interactive brainstorm & become aware of next steps



Defining Data Sharing value for SMEs: Data Sharing Bootcamp – Workshop 2

Agenda

	<i>Time</i>	<i>Remarks</i>
1. Welcome & Introduction	15 min	Plenary
<i>Part 1: Use Case Playbook</i>		
2. Challenge statement & formulated use case (recap)	20 min	Activity
3. Building an interaction model (roles & interactions)	40 min	Activity
Break 10 min		
<i>Part 2: Use case Blueprint</i>		
4. Introduction to BLOFT	10 min	Plenary
5. Initial work with BLOFT elements:		Activity
• Fee structures	30 min	
• Rules & regulations	30 min	
Break: 10 min		
• Governance	30 min	
6. Closing & next steps	15 min	Plenary
Total: 210 min		

At the end of Workshop 2 participants will achieve 3 goals:

1



Get familiar with using tools of CoE-DSC to bring insights back to your organisation and help you support use case creation in the future together with colleagues and/or other stakeholders

2



Gain understanding of how an interaction model & the BLOFT framework are useful for detailing and shaping data sharing use cases

3



Have a detailed use case in terms of: (1) an interaction model with roles, responsibilities and interaction steps, (2) explored fee-structures, (3) rules & regulations, and governance

CoE DSC developed a toolkit to aid initiatives realise data sharing use cases from exploration to implementation in a scalable way

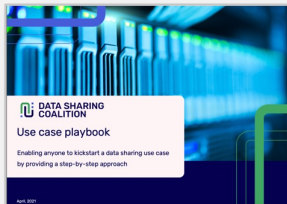


Phase 1: Explore

Result: A clearly scoped use case and an analysis of the value potential

Involved party: Any organisation with an idea for data sharing use cases

Used Tool: [Use Case Playbook](#)

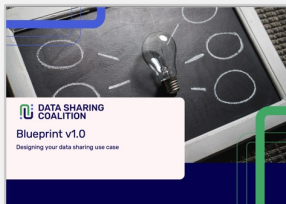


Phase 2: Design

Result: Overview of all relevant topics in a high-level use case design including considerations for future scalability

Involved parties: All stakeholders involved in the use case

Used tool: [Use Case Blueprint](#)



Phase 3: Implement

Result: Detailed requirements on how agreements should be implemented to achieve the use case pilot

Involved parties: All stakeholders involved in the use case

Used tool: [Use Case Implementation Guide](#)

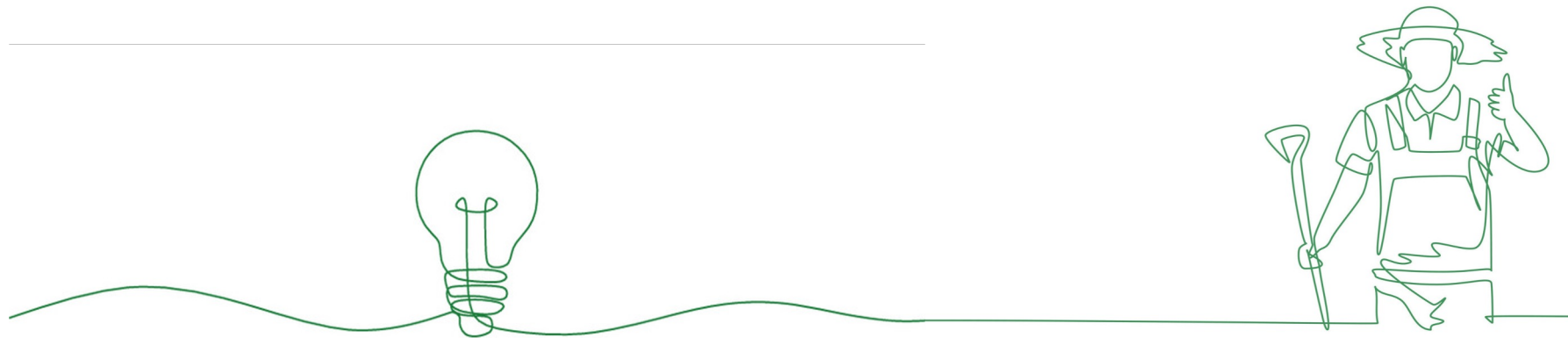


Source: Data Sharing Coalition analysis, [Resources](#)

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Today we go back to the example of a farmer John Doe to help in the brainstorm

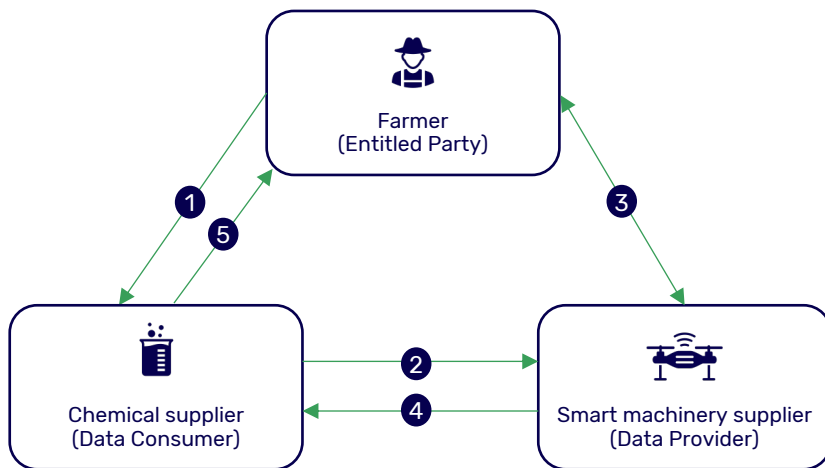


Situation: John Doe has a farm, with smart machinery (drones, irrigation systems) to maintain fields. He works with two parties - a supplier of the smart machinery, and a supplier of chemicals for irrigation.

Challenge: John Doe faces the overgrowth of potato weeds leading to costly maintenance of fields, and reduced crops.

An interaction model is an intuitive and universal representation of a data sharing flow used to kick-start a use case design stage

Example of an interaction model



Purpose of using an interaction model

An intuitive depiction of abstract concepts:

- ✓ Allows to visualise the parties involved and interactions between them
- ✓ Provides a clear overview of how data sharing is arranged to generate value

A universality of representation:

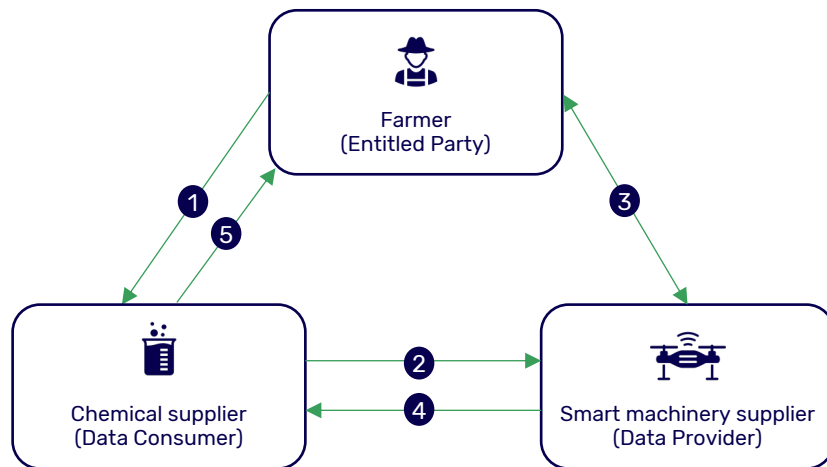
- ✓ A simplified representation allows to adjust the model to any data sharing context (e.g. any industry)

An opener for the use case design stage:

- ✓ Helps to shape and design elements needed to facilitate the use case (e.g. agreements, fees, operational set up, etc.)

In John Doe example, the data flows between chemical supplier and smart machinery supplier with permission from the farmer

John Doe interaction model



Description of interaction steps

- 1 The farmer requests its chemical supplier to provide advice on chemical use based on data from the smart machinery
- 2 The chemical supplier request data from the smart machinery supplier
- 3 The smart machinery supplier requests and gets permission from the farmer to share data with the chemical supplier
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Agreements on the BLOFT topics are needed to make data accessible

Value creation is availability, accessibility and applicability

Applicability

"Making data sharing valuable"



Use case 1



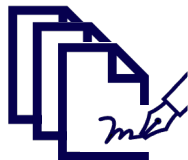
Use case 2



Use case n

Accessibility

"Making data sharing viable"



Agreements on Business, Legal, Operational, Functional and Technical (BLOFT) levels to enable data access

Availability

"Making data sharing possible"



Data source 1



Data source 2



Data source n

Today's focus is how to make data accessible

Covered in WS 1:

Example: John Doe's chemical provider uses data from machinery to provide insights & advice on chemical use






To cover today:

BLOFT goes over what agreements are needed to realise trusted data sharing: Business, Legal, Operational, Functional, Technical

Covered in WS 1:

Example: for John Doe data sources are smart machinery sensors

BLOFT is a generic framework of 5 dimensions allowing to design a blueprint for a scalable data sharing use case

5 BLOFT Dimensions		Elements covered per dimension
1	 Business	Strategic planning, roles & responsibilities of parties, value model (e.g. pricing, fees)
2	 Legal	Relevant rules & regulation, contracting and liability procedures
3	 Operational	Governance, control mechanisms for incident, risk and change management
4	 Functional	Data services descriptions & tooling, privacy features, UX design
5	 Technical	Protocols & standards, security & information management (fraud, audit trails)

Non-exhaustive

Key takeaways from BLOFT

- ✓ **Various considerations are needed to kick off a use case** arranging data sharing is not only about data standards & tech solutions
- ✓ **Generic & extensive at the same time:** the framework is applicable in any context (e.g. sector, industry)
- ✓ **Interrelated elements aid 'bulletproofing' your blueprint:** well thought design reduces risks (e.g. operational control connected to legal procedures for liability)
- ✓ **Fosters scalability by design:** ensures long-term approach for growth and change

Today you'll work with BLOFT elements in practice to arrive at a basic blueprint for your use case

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Today's brainstorm will introduce you to working with BLOFT elements to arrive at a basic blueprint for your use case

PART 1.

**Considering
fee-structures**

B



30 min

PART 2.

**Recognising applicable
rules & regulations**

L



30 min

PART 3.

**Designing
governance**

OFT



30 min

DISCLAIMERS:

- This brainstorm is meant to scratch the surface and imitate processes and considerations when designing a data sharing use case
- Each part takes a lot of considerations, negotiations & involvement of experts from external stakeholder groups and their internal departments (e.g. legal, IT, financial)

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2



Gain understanding of how interaction model & BLOFT framework are useful for detailing and shaping the data sharing use cases

3



Have a better shaped use case in terms of: (1) an interaction model with roles, their responsibilities and interaction steps, (2) explored fee-structures, rules & regulations, and governance

To get your organisation or initiative started, check out the CoE DSC toolkit to develop data sharing use cases in a scalable way



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Result: A clearly scoped use case and an analysis of the value potential

Involved party: Any organisation with an idea for data sharing use cases

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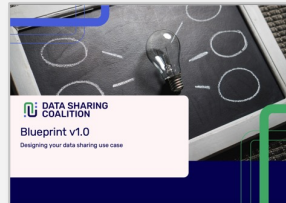


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End of CoE-DSC Data Sharing Bootcamp materials