Introduction

The international Eureka network, which links as many cycles as possible, creates intersections that significantly simplify the implementation of circular processes. To achieve this, we need to think about and discuss a systemic approach, the right data economy, the people who will implement this and the necessary technologies.
In order to incorporate the diverse global requirements and objectives, it is necessary to discuss them in an international process with experts from the Eureka member countries and to derive research needs and recommendations for action for policy-makers. From July 1, 2024 to June 30, 2025, Canada and Germany co-chair Eureka. As part of this the vision of circular value creation will be further developed. Individual areas of the vision, so-called vision clusters, will be discussed in several design thinking workshops in order to create the basis for an economic, social and ecological realisation of the vision – research needs and political recommendations are the results in each case. The results will be summarized and leading to an Eureka Call in June 2025.

The following workshop documentation summarizes the results for **#dataecosystems.**

Workshop set up

#dataecosystems

Location: World Conference Center Bonn

Date: 07.03.2025

Process: 3-Phase Design Thinking process with a focus on

1. developing a common understanding for the challenge;

2. empathizing with users via pre-scheduled video conferences;

3. defining specific needs regarding the challenge.

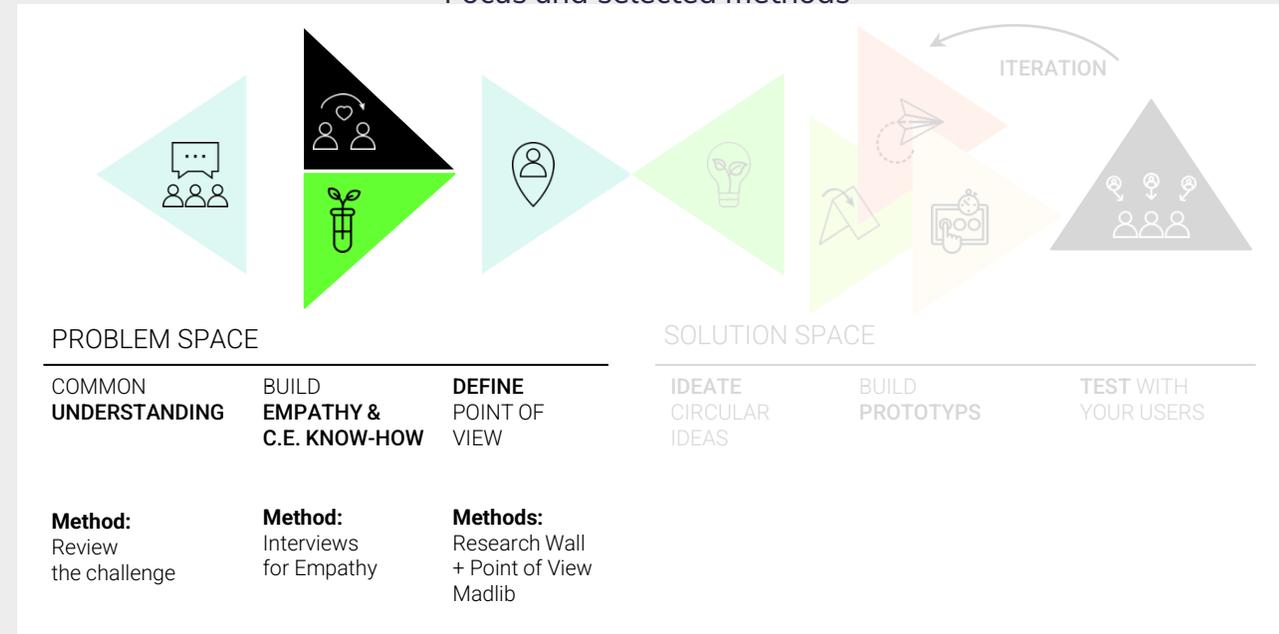

DESIGN THINKING PROCESS
Focus and selected methods

ITERATION

PROBLEM SPACE

COMMON **UNDERSTANDING**	BUILD **EMPATHY & C.E. KNOW-HOW**	**DEFINE** POINT OF VIEW
Method: Review the challenge	**Method:** Interviews for Empathy	**Methods:** Research Wall + Point of View Madlib

SOLUTION SPACE

IDEATE CIRCULAR IDEAS	BUILD **PROTOTYPS**	**TEST** WITH YOUR USERS

Challenge sentence

The subject matter experts focused on the following challenge sentence:

"Identify the requirements data ecosystems must meet for participating companies and countries within value creation networks to enable business models for a circular economy.

How should these ecosystems be designed to establish (international) circular value creation networks within the next 10 years?

Define Point of View

Outcome: Research Wall (Overview)
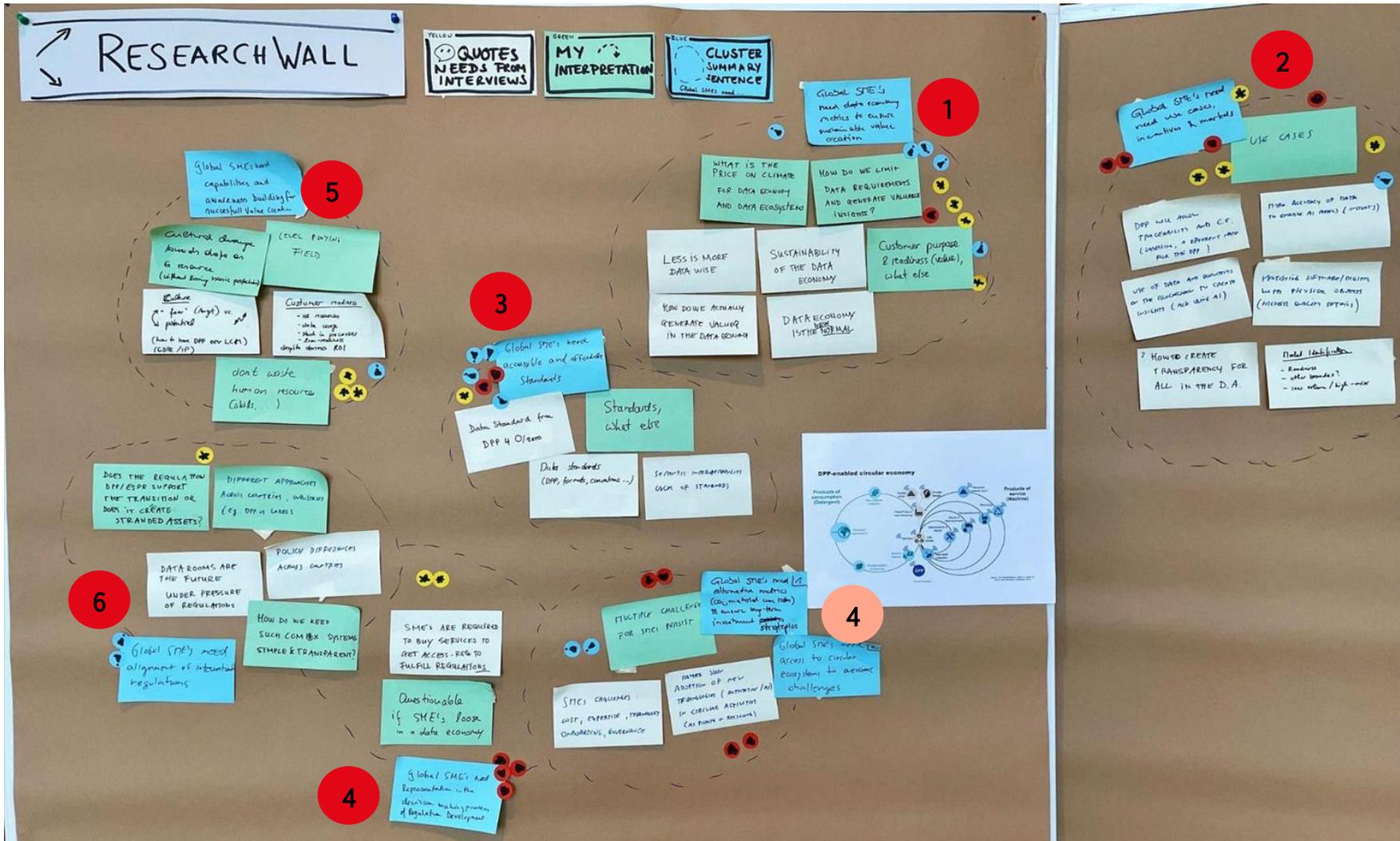
Research Wall 1 | 6

Written version

Color Code:
Quotes/ Key insights from interviews + Individual interpretations of subject matter experts → Cluster Summary sentence: **Global SMEs need...**

1

Theme: Data economy metrics

Quotes/ needs from interviews

- Less is more - data wise
- Sustainability of the data economy
- How do we actually generate value in the data economy
- Data economy is the new normal

Individual interpretations of subject matter experts

- What is the price on climate for data economy and data ecosystems?
- How do we limit data requirements and generate valuable insights?
- Customer purpose and readiness (Value) - What else?

→ Concluding summary sentence: Global SMEs need data economy metrics to ensure sustainable value

Research Wall 2 | 6

Written version

2

Theme: Use cases, incentives & markets for data ecosystems

Quotes/ needs from interviews

- DDP will allow traceability and CE (labelling, a different name for the DDP)

- More accuracy of data to enable AI models (insights)

- Use of data (and ...) on the blockchain to create insights (also using AI)

- Matching Software/digital with physical (Higher ... Details)

- How to create transparency for all in the D.A.

- Market identification: readiness, other brands, low volume - high mix

Individual interpretations of subject matter experts

- Use cases

→ Concluding summary sentence: Global SMEs need use cases, incentives and markets.

Research Wall 3 | 6

Written version

Color Code:
Quotes/ Key insights from interviews + Individual interpretations of subject matter experts → Cluster Summary sentence: **Global SMEs need...**

3

Theme: Standards for data ecosystems

Quotes/ needs from interviews

- Data standards from DDP 4 O/Zero
- Data standards (DDP, formats, conversion)
- Semantic interoperability - lack of standards

Individual interpretations of subject matter experts

- Standards - what else

→ Concluding summary sentence: Global SMEs need accessible and affordable standards.

Research Wall 4 | 6

Written version

4

Theme: Standards for data ecosystems

Quotes/ needs from interviews

- SMEs are required to buy services to get access - ... to fulfil regulations

Individual interpretations of subject matter experts

- Questionable if SMEs loose in data economy

→ Concluding summary sentence: Global SMEs need representation in decision making process of regulation development.

Written version

Color Code:
Quotes/ Key insights from interviews + Individual interpretations of subject matter experts → Cluster Summary sentence: **Global SMEs need...**

Theme: Multiple challenges for SMEs

4

Quotes/ needs from interviews

- SMEs challenges: cost, expertise, technology, onboarding, governance
- Rather slow adoption of new technologies (automatisation, AI) in circular activities

Individual interpretations of subject matter experts

- Multiple challenges for SMEs persist

→ Concluding summary sentence:

1. Global SMEs need alternative metrics (CO2, Material, ...) to ensure long-term investment strategies.
2. Global SMEs need access to circular ecosystems to overcome challenges.

Research Wall 5 | 6

Written version

5

Theme: Organisational skills for circular dataecosystems

Quotes/ needs from interviews

- Culture: Fear ("Angst") vs. Potential (how to have DDP over LCM (GDPR/IP)

- Customer readiness (HR resources, data usage, stuck in processes, lean readiness) despite obvious ROI

Individual interpretations of subject matter experts

- cultural change - ... data as a resource (without loosing basic ...)

- Level playing field

- Don't waste human resources (skills..)

→ Concluding summary sentence: Global SMEs need capabilities and awareness building for successful value creation.

Research Wall 6 | 6

Written version

6

Theme: Alignment of policies, regulations and standards across countries and industries

Quotes/ needs from interviews

- Data rooms are the future under pressure of regulations

- Policy differences across countries

Individual interpretations of subject matter experts

- Does the regulation DDP, ESPR support the transitionor does it create stranded assets?

- Different approaches across countries and industries (e.g. DDP vs. labels)

- How do we keep such complex systems simple & transparent?

→ Concluding summary sentence: Global SMEs need alignment of international regulations.

Define Point of View

Outcome: Point of View (POV) Madlib

POV: Insight of data service providers

Heleen (54), Managing Director @ Data Service Provider

NEEDS EU wide data standards

IN ORDER TO meet the requirements of DDP regulations, to create value for participants (SMEs) for a circular data economy.

POV: Insight of SME with remanufacturing/repair business model

John Doe (30), operations manager of a circular economy operator (e.g. remanufacturing or repair)

NEEDS standards (accessible and affordable)

BECAUSE product data needs to be transferable along the life cycle to make circular value creation viable X industries + X boarders.

POV: Insight of SME with remanufacturing/repair business model

John Doeling (30), financial manager of a circular economy operator (e.g. remanufacturing or repair)

NEEDS data economy metrics

IN ORDER TO ensure sustainable value creation, i.e. to execute reman. or repair services and measure the success of the process.

Final recommendation on **#circulartechnologies** of subject matter experts
Outcome: Point of View (POV) Madlib

Subject Matter Expert: Scientist

RECOMMENDS to include all actors of the Circular Economy

BECAUSE data is scattered and sometimes even non-existent/on paper/not collected.

Subject Matter Expert: Consultant

RECOMMENDS bringing/thinking together data + real ecosystems

IN ORDER TO foster the twin transformation and facilitate collaboration toward concrete, discrete and shared circular challenges.

Subject Matter Expert: CEO

RECOMMENDS a structured approach to generic data standard for life cycle (assessment) + TCO and structure digital data in DDP

IN ORDER TO facilitate producer (ownership) through aligned data "sets" of "in use" products along the value chain to enable urban mining beyond recycling.

- structured data templates
- standard generic data "Ökobilanz"
- TCO → EPR
- documentation of "in use products" → DPPc

Subject Matter Expert: Scientist

RECOMMENDS the establishment of clear incentive mechanisms and governance frameworks

IN ORDER TO encourage data sharing and create trustworthy and value-generating data flows that drive circular business models

Subject Matter Expert: Scientist

RECOMMENDS to quantify the economic and environmental potential value in business ecosystems

IN ORDER TO enable a design to value approach for the new technologies, thus enabling a development road with a positive perspective

Σ eureka
Germany|Canada

CHAIR 2024-2025

Ideation

What are the top 5 requirements - data ecosystems must meet - to enable circular business models across national borders?

(1) Inclusive Stakeholder participation
- Fair access to data by all actors
- Life Cycle maintenance or replenishment or update by multiple actors
- Standardised data and (infra)structure including data (..) and standards
- SME- inclusive participating process creation for DPP 4.0
- Multi-stakeholder integrative standard development

(2) Transparent & balanced orchestration of the ecosystem
- data richness about product compositions and materials
- data ecosystems as a (global) commons
- identify common data structures and templates across industries (BiP driven)

(3) Transparent value metrics and data standards
- ensure security, trust and truth
- standard metrics: make the value add of "circular" measurable
- social & environmental impact

Ideation

What are the top 5 requirements - data ecosystems must meet - to enable circular business models across national borders?

(4) **Communicate!!**
- data interoperability and accuracy
- communicate and create massive awareness about the need to digitise and generate value add data
- common understanding of data economy culture

(5) **Pragmatic circularity regulation**
- physical infrastructure that serves as foundation for data (...) collection and reverse logistics
- viable use case blueprints for early stage and maturing markets
- consistency + lean focus
- documentation of existing solutions to avoid duplications
- Data overload vs. data need consideration

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