



The socio-economic perspective
Taking the European Data Economy to the next level:
Overcoming barriers faced in the data economy
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Overcoming barriers faced in the data economy

Purpose and scope

Purpose

- The research on barriers is expected to allow revising existing and making new **recommendations** with respect to
 - the promotion of data markets through the creation of appropriate, socio-economic framework conditions
 - the adaption of actors active in the data economy to the given socio-economic framework conditions
- Optimisations with respect to the framework conditions are essential for Europe to **keep pace** with the developments in other regions



<https://thoughttotheday.blogspot.co.at/2011.1/08/keeping-pace.html>

Scope

The focus of this part of the research is on **socio-economic barriers** that

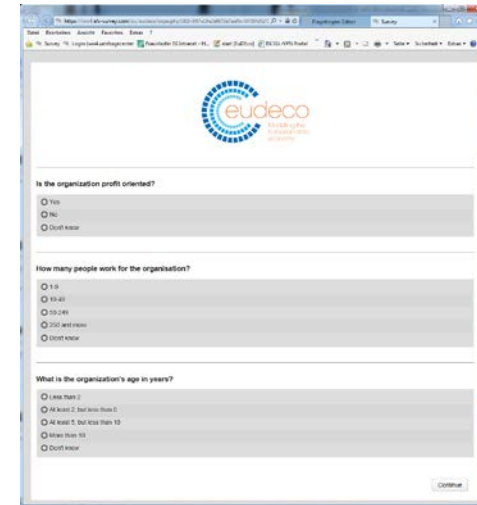
- keep data markets from becoming **self-sustainable**
- **hinder data reuse** in the context of big data

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Methodology

Data collection and analysis

- This research is mainly based on
 - a comprehensive **literature review**
 - selected parts of a broader **online survey**
- Moreover, the EuDEco **model**, insights from events and **previous work** were used
- The **categories of barriers** presented were derived inductively



The screenshot shows a web browser window displaying an online survey. The survey is titled 'eudeco' and has the following questions:

- Is the organization profit oriented?
 Yes
 No
 Don't know
- How many people work for the organisation?
 1-9
 10-49
 50-99
 100 and more
 Don't know
- What is the organisation's age in years?
 Less than 2
 At least 2, but less than 5
 At least 5, but less than 10
 More than 10
 Don't know

A 'Continue' button is visible at the bottom right of the form.

Survey sample

76 respondents from government bodies, companies and research institutions that participate in the **European data economy** as data providers, data intermediaries, data users and/or technology providers

Remarks

- **Barriers** or discouraging factors, and **drivers** or encouraging factors are often like two sides of the same coin
- The **survey** can be accessed at <https://ww4.efs-survey.com/uc/eudeco/>



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Barriers

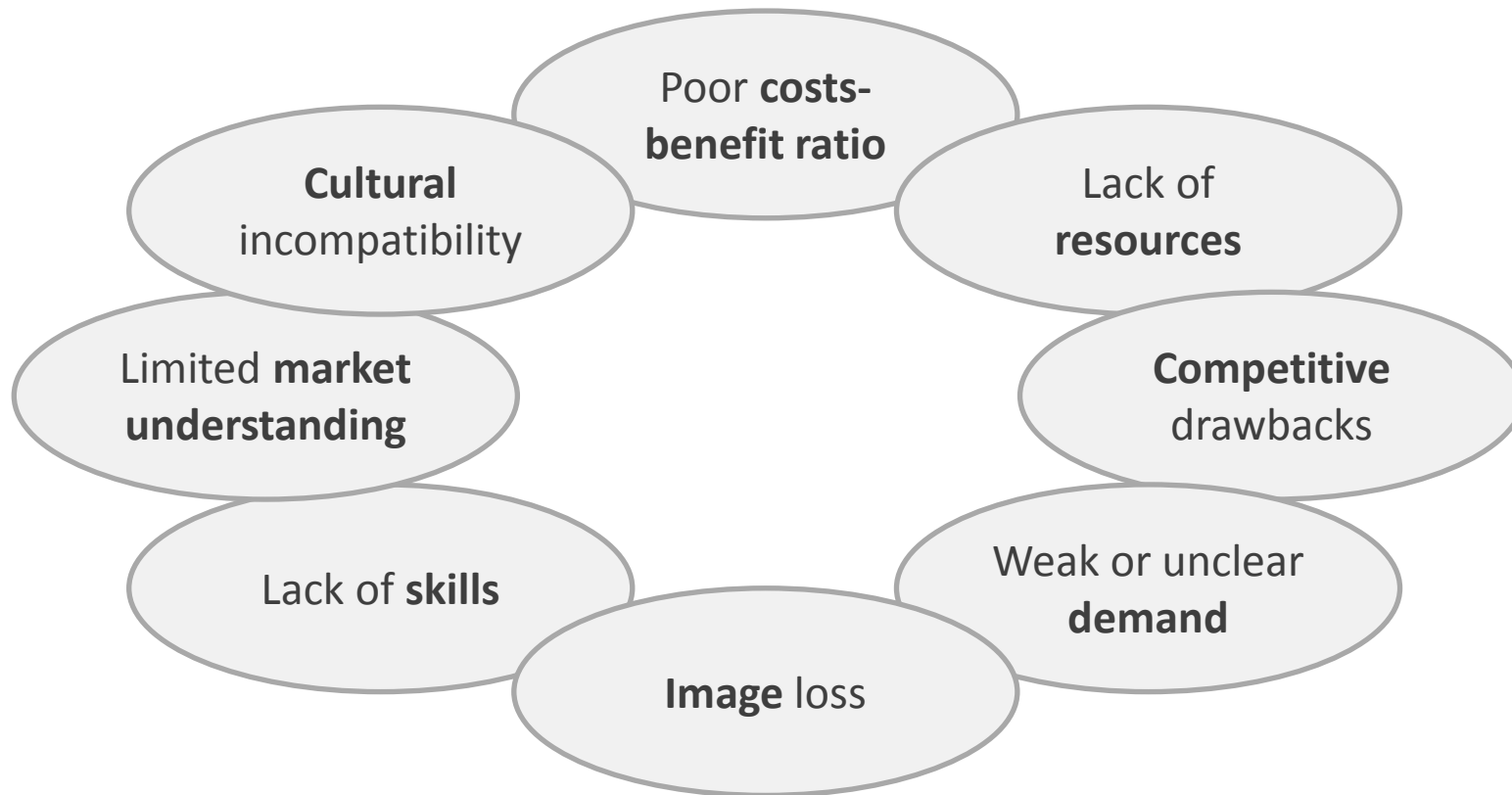


Key socio-economic
barriers

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Barriers

- Research led to the identification of **eight** categories of barriers
- Aspects that are **barriers** for some actors are **drivers** for others



Overcoming barriers faced in the data economy

Barriers – Poor cost-benefit ratio



What makes the ratio poor?

- A poor cost-benefit ratio is an issue for **all groups** of actors
- Significant **costs**
 - due to high fees charged by data providers and intermediaries
 - for collecting and managing data
 - for maintaining tools and services used
- Other activities are prioritised due to unclear economic **benefits**
- Convincing incentives are missing

Is the ratio poor for all actors?

- Some actors
 - consider it difficult to make a robust assessment
 - report a good cost-benefit ratio
- Data providers and intermediaries make substantial **profit** with data
- Data users mentioned that they could **reduce costs** by using third-party data
- Technology providers reported a **fair economic return** on their research and development efforts

What could be useful to improve the cost-benefit ratio?

- Clear **strategies**, concrete **incentives** and a higher level of **standardisation** as well as **guidelines**, **checklists** and **good practices** may affect the cost-benefit ratio positively
- **Information about the market** may lead to a more robust assessment of the ratio

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Barriers – Lack of resources



What resources are lacking?

- Lack of resources is an issue for **all groups** of actors
- Lacking resources include
 - financial resources
 - human resources
- **Budgets** are limited while **efforts** related to data reuse are high
- Available data often
 - is of low **quality**
 - has inadequate **content**
 - lacks **documentation**
 - has an incompatible **format**

Do all actors lack resources?

Some actors consider the efforts related to data reuse **manageable**

What could be useful to address the lack of resources?

Concrete **incentives**, access to **government data**, **partnerships**, **unitised technologies**, taking advantage of **platforms**, the use of **education and training offers** as well as the promotion of **workforce and student mobility** may be useful

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Barriers – Competitive drawbacks



What affects competitiveness negatively?

- Competitive drawbacks are mainly an issue for **data providers** but also for **data users**
- Data providers fear foregoing **advantages** or being **embarrassed**
- Data users fear making decisions based on data
 - that is also **accessible** to their competitors
 - they do not have under their **control**

Is the data economy very competitive?

- Technology providers face **strong competition**
- There are many **similar tools and services** on the market

Do all actors face competitive drawbacks?

Actors see possible image gains, learning opportunities, performance improvements, new business opportunities, stronger cooperation and the opportunity to become innovation leader

What could be useful to avoid competitive drawbacks?

Measures encouraging **fair competition**, the use of **data sharing agreement**, the systematic application of **standards**, achieving **certifications** and taking **security measures** may be useful

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Barriers – Weak or unclear demand



What makes demand weak or unclear?

- Weak or unclear demand is particularly relevant for **technology providers** and **data intermediaries**
- Technology providers need to offer tools and service that
 - are not only **generic** but also able to meet **specific** needs
 - cope with **distrust** and fear of **vendor lock-in**
- Data intermediaries cannot resell **specific data** many times

Is the demand weak or unclear for all actors?

- Data providers and some data intermediaries see considerable outside demand for the **data** they make available
- Some technology providers see a strong demand for **individual solutions**
- The availability of **concrete use cases** at the customers' side is essential

What could be useful to address weak or unclear demand?

Information about the market and one-to-one professional relationships may lead to a more robust assessment of the demand

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Barriers – Image loss



What could lead to an image loss?

- Image loss is mainly an issue for **data providers**
- An image loss may be the result if data is made available
 - that should have been kept **confidential** for regulatory reasons
 - that provides **insights** into the operations of an organisation that are not flawless

Do all actors fear image loss?

- Some actors mentioned **image gains** in relation to data reuse
- Data users and data intermediaries can benefit from **publicity** and **recognition** if their data is reused
- Data users can be recognized as **innovation leaders**, if they successfully combine own data with third-party data
- Technology providers might be considered as the **facilitator** of new business opportunities

What could be useful to avoid image loss?

Clear **strategies**, measures **encouraging fair competition**, one-to-one **professional relationships**, **certifications** and adequate **security measures** may reduce the fear of suffering image loss

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Barriers – Lack of skills



What skills are missing?

- Lack of skills is an issue for **all groups** of actors but data providers
- Data intermediaries, data users and technology providers lack **internal** technical knowledge
- Additionally, technology providers are also confronted with a lack of skills **at their customers**
- Lack of skills together with improper **technical infrastructure** makes rolling out tools and services difficult and costly

Do all actors lack skills?

- Some actors reported **learning opportunities** and **stronger cooperation** in relation to data reuse
 - Data providers see the chance to gain **new technical skills** and to get their data validated
 - Technology providers embrace the chance to gain **domain expertise** by maintaining a close contact with their customers
- The relevance of **data literacy** has been increasing over the last years

What could be useful to address lack of skills?

- **Partnerships** may result in a better utilisation of available qualified workforce
- The systematic application of **standards** may lead to lower demands
- The use of **education and training offers** may result in a better qualified workforce

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Barriers – Limited market understanding



What limits market understanding?

- Limited market understanding is mainly an issue for **data intermediaries** and **technology providers**
- It is difficult for data intermediaries to estimate the **market potential** of certain offers or specialisations
- Technology providers face
 - difficulties when trying to define concrete **business plans**
 - strong **competition** in their field

Do all actors face a limited market understanding?

Actors see new business opportunities in relation with data reuse

What could be useful improve market understanding?

Information about the market, a knowledge base, monitoring of the market, partnerships and monitoring of education and training offers may lead to a better market understanding

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Barriers – Cultural incompatibility



What leads to cultural incompatibility?

- Cultural incompatibility is mainly an issue for **data providers** and **data users**
- Data users face
 - a **general** data sharing **paranoia**
 - difficulties when implementing procedural and behavioural **changes**
- Data providers are confronted with
 - a lack of procedural **flexibility**
 - **general fear** of technology and technological changes

Do all actors face cultural incompatibility?

Actors acknowledge that **embracing change** is critical to

- become an **innovation leader**
- to stay ahead of the **competition**

What could be useful address cultural incompatibility?

Information about the market, **data literacy**, **informal learning**, public **organisation policies**, **transparent decisions**, **certifications** and adequate **security measures** may lead to the reduction of culture-based paranoia and fear

Overcoming barriers faced in the data economy

Barriers



Requirements and
solution approaches

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Requirements and solution approaches



- Research led to the identification of **25 solution approaches**
- The collection of approaches is extensive but **not exhaustive**



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Requirements and solution approaches



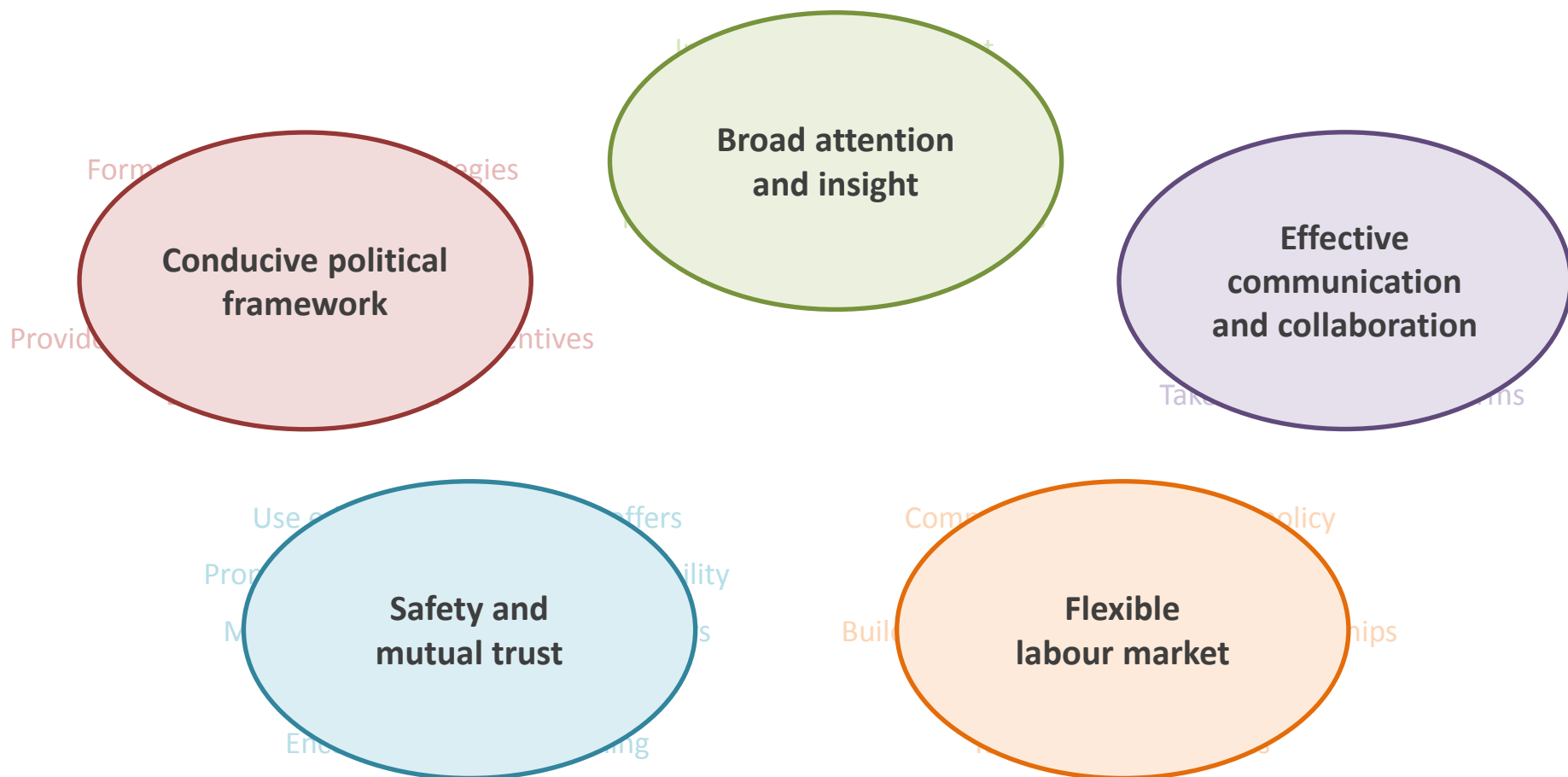
- The solution approaches contribute to the achievement of **five requirements**
- Each approach contributes to the achievement of **more than one requirement**



Overcoming barriers faced in the data economy

Requirements and solution approaches

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Overcoming barriers faced in the data economy

Requirements and solution approaches



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	Cost-benefit ratio	Resources	Competition	Demand	Image	Skills	Market understanding	Culture
Conducive political framework	X	X	X		X			
Broad attention and insight	X			X			X	X
Effective communication and collaboration		X	X			X	X	
Flexible labour market		X				X	X	X
Safety and mutual trust			X	X	X			X

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Questions and answers



Questions
and answers

Are there any additional
socio-economic barriers?

Do you have doubts with respect
to any of the presented barriers?

Are some of the barriers more
relevant than others?

To what extent do you agree with the proposed solution approaches?

What are the most relevant solution approaches in your opinion?

Do the requirements provide a useful link between barriers and solution approaches?