Business Models of Open Data Intermediaries

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Content

1. Motivation
2. Who are open data intermediaries?
3. What is a business model?
4. Methods

Focus of the discussion

5. Envisioning value propositions of open data intermediaries

6. Devising value creation of open data intermediaries

Paper A: interviews with public agencies

7. Exploring value capture for open data intermediaries

Paper B: Esri's case study

8. Survey

Paper A

1. Motivation

Potential values of
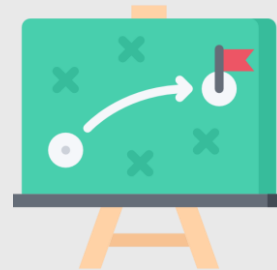open data

Shortcomings in open
data ecosystems

Importance of open data
intermediaries (ODInt)

Business models of ODInt
are under-researched &
underdeveloped

Objective

Research & development of
business models of ODInt

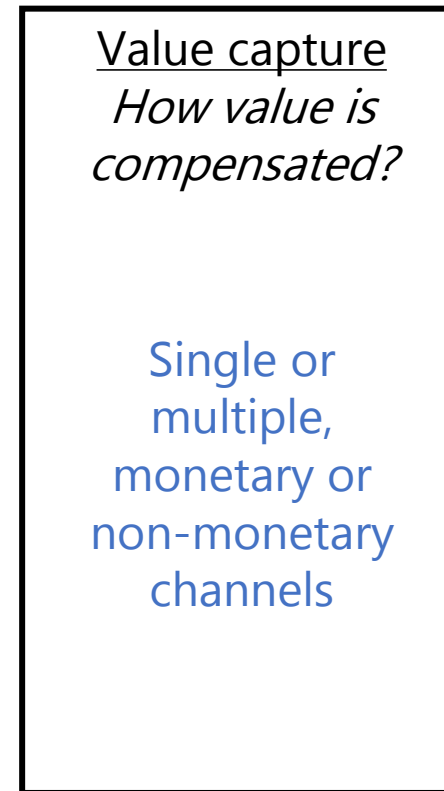ODInt contributing to
sustainable open data
ecosystems

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2. Who are open data intermediaries?

Third-party actors who **provide specialized resources and capabilities** to (i) **enhance the supply, flow, and/or use of open data** and/or (ii) **strengthen the relationships among various open data stakeholders**

Examples

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3. What is a business model?

Value proposition	Value creation	Value capture
What value is offered?	*How value is delivered?*	*How value is compensated?*
Problems ↓ Opportunities	Organisational types ↓ Activities & resources	Single or multiple, monetary or non-monetary channels

Summarised by Afuah (2018), Andreini & Bettinelli (2017), Voigt et al. (2017)

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4. Methods
-- Paper A: Envisioning Contributions and Types of Open Data Intermediaries

Research questions:

1. What are the shortcomings in open data ecosystems?

2. What are the potential contributions of open data intermediaries?

3. What are the potential types of open data intermediaries?

Methods:

- Data collection: Semi-structured interviews with 8 public agencies in Denmark, Germany, Netherlands, and Spain (SDFI, BKG, Berlin, Kadaster, Geonovum, CNIG, Red.es, Madrid)

- Data coding: Inductive

- Data analysis: Building connections between shortcomings, and potential contributions & types of open data intermediaries

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4. Methods
-- Paper B: Leveraging Open Data: How Intermediary Facilitates Innovation in Ecosystem

Research questions:

1. What is the business model of Esri?

2. What lessons can be drawn from Esri's business model?
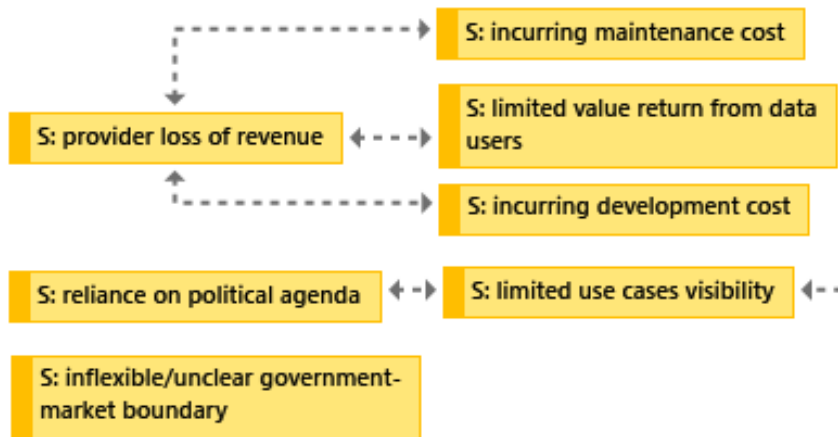
Methods:

- Case study

- Data collection: Semi-structured interviews with Esri Inc. (US) and Esri distributors in Germany, Netherlands, Spain, UK, & Denmark and publicly available sources

- Data coding: Inductive

- Data analysis: Identifying value proposition, value creation, and value capture of Esri's open data intermediation
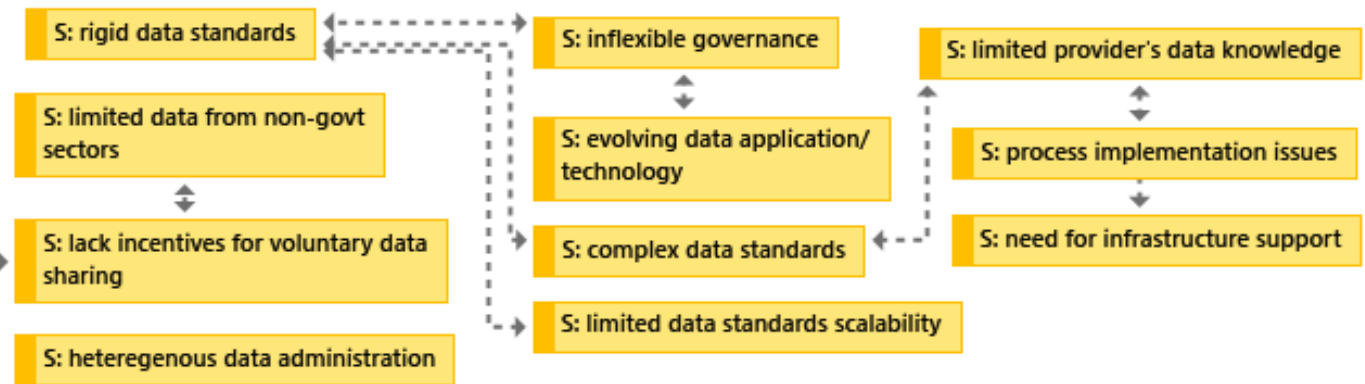
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-- Shortcomings in open data ecosystems

Paper A

Financial shortcomings

- S: incurring maintenance cost
- S: provider loss of revenue
- S: limited value return from data users
- S: incurring development cost
- S: reliance on political agenda
- S: limited use cases visibility
- S: inflexible/unclear government-market boundary

Open data supply shortcomings

- S: rigid data standards
- S: inflexible governance
- S: limited provider's data knowledge
- S: limited data from non-govt sectors
- S: evolving data application/technology
- S: process implementation issues
- S: lack incentives for voluntary data sharing
- S: complex data standards
- S: need for infrastructure support
- S: limited data standards scalability
- S: heteregenous data administration

Interoperability shortcomings

- S: different open data licenses
- S: overlooked non-govt data
- S: incomplete picture of data ecosystem(s)
- S: privacy concern
- S: siloed domains
- S: segmented data platforms
- S: different metadata standards
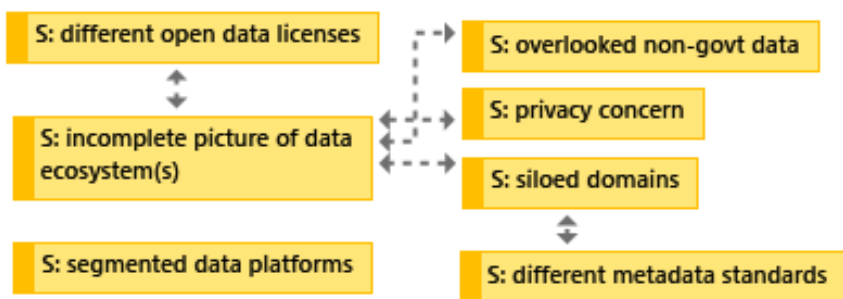
Open data reuse shortcomings

- S: limited feedback from lay users
- S: constraints in multistakeholder engagement
- S: limited users' data knowledge
- S: lack understanding of users' needs
- S: power imbalances around data
- S: complex technical threshold for non-specialist user
- S: requiring viable business model

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-- Potential contributions of open data intermediaries

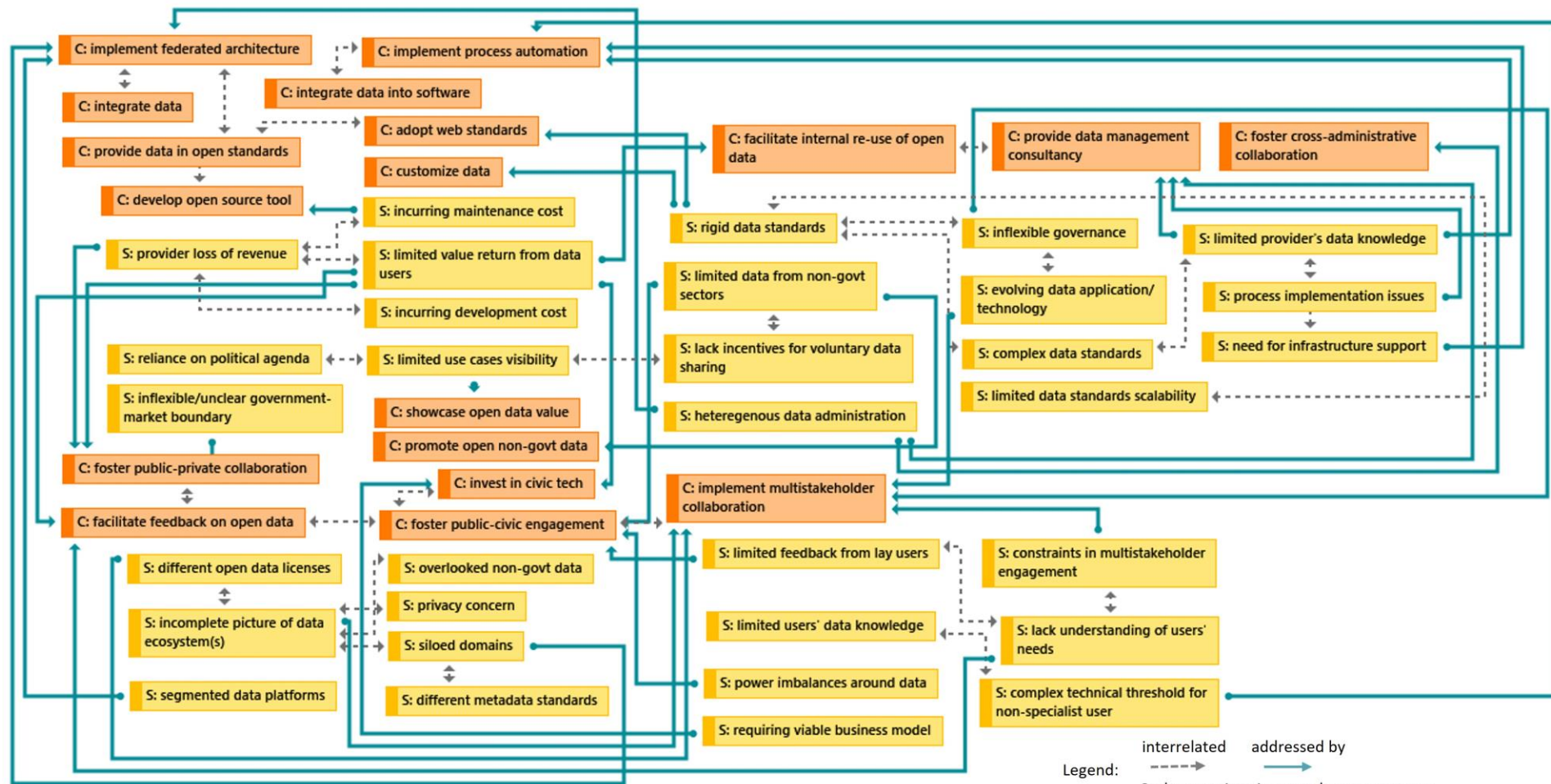Technical contributions
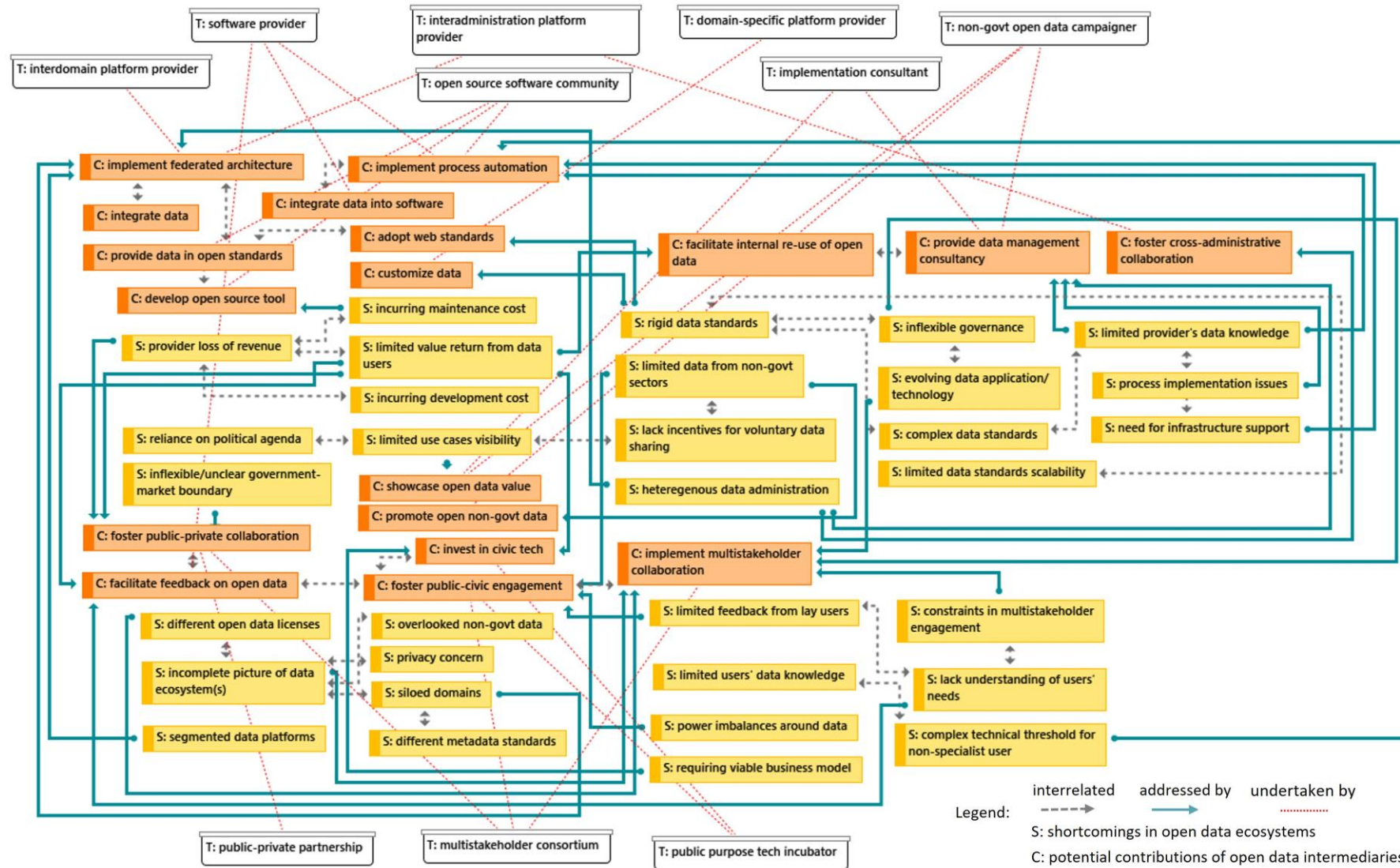
Process-oriented contributions

Relational contributions

5. Envisioning value propositions of open data intermediaries

-- Potential contributions of open data intermediaries

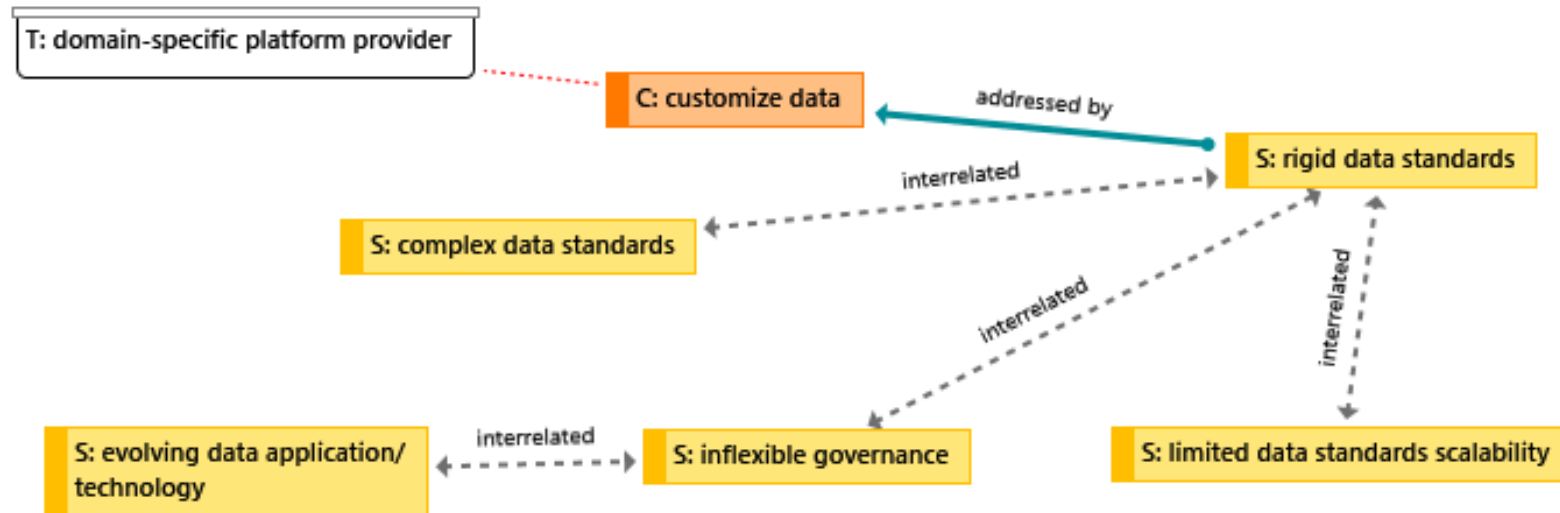| Process-oriented contributions	Technical contributions	Relational contributions
Provide data management consultancy	Implement federated architecture	Foster public-private collaboration
Foster cross-administrative collaboration	Integrate data	Foster public-civic engagement
Facilitate internal re-use of open data	Provide data in open standards	Implement multistakeholder collaboration
	Adopt web standards	Facilitate feedback on open data
	Customise data	Invest in civic technology
	Implement process automation	Showcase open data value
	Integrate data into software	Promote open non-government data
	Develop open-source tool	

3. Domain-specific platform provider

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-- Potential types of open data intermediaries

1. Inter-administration data platforms

2. Inter-domain data platforms

3. Domain-specific data platforms

4. Implementation consultants

5. Software provider

6. Open-source software communities

7. Non-government open data campaigners

8. Public-private partnerships

9. Civic tech incubators

10. Multi-stakeholder consortiums

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7. Exploring value capture of open data intermediaries

Example of Esri's value propositions and value capture

	Value Capture				
	Cross-subsidies	Nonmonetary marketing	Freemium	Consulting services	Learning by doing
Value Proposition — Software system that in itself an (open) geodata platform	X		X		X
Software system for data providers to create and disseminate open data	X				
Special projects related to open data		X			X
Consulting services to open data providers and users				X	X

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8. Survey

Envisioning contributions and types of open data intermediaries

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Thank you for your attention