WORKSHOP ON SUSTAINABLE BUSINESS MODELS FOR NMCAS

Joint Workshop organised by EuroGeographics and EuroSDR

Recap from previous workshops

8 FEBRUARY 2024
AGENDA

- A perspective on sustainable business models for NMCAs, through a quick overlook on 3 previous workshops (2017 – 2023)
  - *Sustainable Open Data Business Models for NMCAs* – 18-19 September 2017 (Delft, The Netherlands)
  - *Sustainable Open Data Business Models for NMCAs* – 2-3 February 2022 (Online)
  - *Data ecosystems and Spatial Data Infrastructure* – 12-13 December 2023 (Copenhagen, Denmark)
SUSTAINABLE OPEN DATA BUSINESS MODELS WORKSHOP (2017)

- Co-organised by EuroSDR and TU Delft (Knowledge Centre Open Data)
- Delft (The Netherlands)
- 18 – 19 September 2017
- 20 attendees
- An “exploratory” workshop
  - Bridging research and operation
  - A survey ran in April 2017

Our research question

... to assess the effects of open data policies on the business model of National Mapping & Cadastral Agencies. This includes effects on the way the organisations are able to (re)finance their operational costs and to ensure long-term sustainability of their (open) data
SUSTAINABLE OPEN DATA BUSINESS MODELS WORKSHOP (2017)
AGENDA HIGHLIGHTS

- *From Data to Value*, 1 Keynote by Thorhildur Jetzek, Director R&D, Activity Stream, Iceland
- *Sustainable open data business models*, 1 research/academic insight by Bastiaan van Loenen, Knowledge Centre Open Data, TU Delft (The Netherlands)
- *Open data at NMCAs*, the results of the survey by Frederika Welle Donker, Knowledge Centre Open Data, TU Delft (The Netherlands)
- 0 presentation from NMCAs
- 4 breakout sessions and half-day discussion about challenges and possible strategies for NMCAs
Effects of open data

- Need for extra infrastructural investments to cope with extra data traffic and security measures
- Loss of revenue
- More feedback on data quality
- More requests for extra data, technical issues and advice!
- Efficiency gains
- Shift of role and position in information value chain
  - From data provider towards data enabler

For more in-depth case studies, see:

From Open data at NMCAs: Questionnaire EuroSDR: the results, Frederika Welle Donker’s presentation
SUSTAINABLE OPEN DATA BUSINESS MODELS WORKSHOP (2022)

- Co-organised by EuroSDR and EuroGeographics

  - online
  - 2 – 3 February 2022
  - 110 registered

- A “repetition” workshop
  - Online (Covid-19 period)
  - A more mature context
  - A survey ran in Autumn 2021
SUSTAINABLE OPEN DATA BUSINESS MODELS WORKSHOP (2022) AGENDA HIGHLIGHTS

- *The EU’s Open Data policy*, 1 Keynote by Jiri Pilar, EC DG for Communications Networks
- *A pathway towards a sustainable ecosystems* by Bastiaan van Loenen, and *Business models for open data (ecosystems)* by Frederika Welle Donker, Knowledge Centre Open Data, TU Delft, *Lessons from Open data in Italian municipalities* by Caterina Santoro, KU Leuven, 3 academic / research insights
- 7 feedback’s presentations by NMCAs (Denmark, France, Great Britain, Ireland, Poland, Spain, The Netherlands)
- 2 panel discussions (11 panellists- 8 from NMCAs, 2 from Academia and 1 from Industry): *Impact of Open data*, *insights from a mixture of organisations and perspectives* and *Business Models & Challenges*
SUSTAINABLE OPEN DATA BUSINESS MODELS WORKSHOP (2022)
MAIN OUTCOMES

WRAP UP

- There is a great enthusiasm for open data
- The trend is for opening more data
- There is a role for government funding open data models
- The two main bottlenecks for opening data are political and financial
- There are different journeys to opening data

- Key drivers are public good, societal benefits besides legal obligation
- Open data needs to be user driven
- Open data is an enabler for economic growth
- Open data is an opportunity for NMCAs
- Open data is increasingly becoming part of NMCAs mission (no longer a question for most)
DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023)

- Co-organised by SDFI, EuroSDR and DAFAGO
- Copenhagen
- 12 – 13 December 2023
- 30 attendees

- An “exploratory” and a feedback workshop
  - 25 years after the article by Ian Masser (KU Leuven): All shapes and sizes: The first generation of national spatial data infrastructures
  - Bridging research and operation
DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023) AGENDA HIGHLIGHTS 1/2

- **Beyond SDI - Evolution towards the Common European Green Deal Data Space**, by Alexander Kotsev, EC Joint Research Center (JRC)
- **Challenges and opportunities for SDI in the emerging and evolving geospatial ecosystem**, by Serena Coetzee, University of Pretoria (South Africa)
- **Data Spaces - EU's vision for alternative data exchange infrastructures**, by Lea Schick, Alexandra Institute (Denmark)
- **Navigating the Ecosystem Perspective to Maximise the Value of Open Government Data**, by María Elena López Reyes, Aalborg University (Denmark) and **Designing Sustainable Business Models for Open Data Intermediaries**, by Ashraf Shaharudin, TU Delft (The Netherlands), 2 research insights from ODECO initiative (Horizon 2020)
DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023) AGENDA HIGHLIGHTS 2/2

- 7 feedbacks presentations from NMCAs, associations and private companies
- 3 break-out sessions:
  - Topic 1: Moving from spatial data infrastructure (SDI) to data ecosystems
  - Topic 2: Value creation for all stakeholders - from supplier driven to demand driven
  - Topic 3: Development of data ecosystems – new business and financial models
INSPIRE – the benefits

- Change of mind set towards open data and data sharing
- Improved efficiencies on the national level
- Enabler of open source technology
- Impact on standardisation
- A health community

INSPIRE - where we fall short

- Provider/public sector centrism
- Hardcoding of technical aspects in legislation
- Overly complex specifications
- Strong influence of specific standards
- Custom extensions
- Parallel implementations
- No evidence of who is using what and why

From Alexander Kotsev's presentation: *Beyond SDI - Evolution towards the Common European Green Deal Data Space*
Our vision

• Data sharing is **not a goal in itself**. To remain fit for purpose, INSPIRE should support data-driven decision-making and innovation.

• To be sustainable, INSPIRE should **‘blend in’ with the broader ecosystem** of spatial and non-spatial data, infrastructures, technologies and policies.

• This will mean **opening up to a broader community** of implementers and users and to a wider range of applications and use cases.

• Making the INSPIRE framework more **flexible and agile** will significantly lower the entry level to the sharing and utilisation of data.

• Technical **approaches need to be simplified** by reusing well-adopted standards and technologies.

Discussion – governance

• Data governance should become more inclusive
  • From FAIR to CARE (Collective Benefit, Authority to Control, Responsibility, Ethics)
  • Level playing field for smaller actors
  • New actors should participate
    • Prominent role of data altruism and data intermediaries
    • Communities of users and early adopters

From Alexander Kotsev’s presentation: *Beyond SDI - Evolution towards the Common European Green Deal Data Space*
DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023)
MAIN OUTCOMES 3/5

Data infrastructures

Metaphor for a physical infrastructure

- Emerged in the 1980s/1990s
  - As a result of the move from paper to digital data
  - Started with centralized control, evolved to be more distributed bottom-up infrastructures

- Spatial data infrastructure
  - technology, policies, standards, and human resources
  - to acquire, process store, distribute, and improve utilization of geospatial data

Data ecosystems

Metaphor for a natural ecosystem

- Emerged in the 2010s
  - As a result of proliferation and commodification of data

- Geospatial [data] ecosystem
  - a community of actors [data providers and users]
  - [in conjunction with] the geospatial information and technologies in their environment
  - interact [as a system]

From Serena Coetzee’s presentation: Challenges and opportunities for spatial data infrastructures in the emerging and evolving geospatial ecosystem,
DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023)
MAIN OUTCOMES 4/5

Data ecosystems are shaped by actors

Abundance and nature of communities of actors
Adaptive and dynamic networks between actors

- Open communities

vs

- Geospatial-only communities
  - “Only we can do this”

Professional bodies can be a barrier to open communities

Conclusion

- In the beginning, it was necessary to build data infrastructures

- Now, data ecosystems are emerging
  Infrastructures must adapt to ecosystems
  - that are dynamic, self-organize
  - where actors collaborate, some as keystone actors
  - that are shaped by actors
  - that can provide a variety of data and services

- Consumption does not deplete the data!

From Serena Coetzee’s presentation: Challenges and opportunities for spatial data infrastructures in the emerging and evolving geospatial ecosystem,
6. Devising value creation of open data intermediaries

- 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

From Ashraf Shaharudin’s presentation: Designing Sustainable Business Models for Open Data Intermediaries

7. Exploring value capture of open data intermediaries

Example of Esri’s value propositions and value capture

<table>
<thead>
<tr>
<th>Value Proposition</th>
<th>Cross-subsidies</th>
<th>Nonmonetary marketing</th>
<th>Freemium</th>
<th>Consulting services</th>
<th>Learning by doing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software system that in itself an (open) geodata platform</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Software system for data providers to create and disseminate open data</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special projects related to open data</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consulting services to open data providers and users</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
REFERENCES

- EuroSDR / Knowledge Centre Open (TU Delft)’s Workshop on Sustainable Open Data Business Models for NMCAs [presentations](#) (18-19 September 2022)
- Sustainable Open Data Business Models for NMCAs - Official Survey [Report](#) (EuroSDR, November 2022)
- EuroGeographics / EuroSDR’s Workshop on Sustainable Open Data Business Models for NMCAs [presentations](#) (2-3 February 2022)
- *ODECO at the Data Ecosystems and Spatial Data Infrastructure workshop*, [article](#) by Maria Elena Lopez Reyes (Aalborg University), Ashraf Shaharudin (TU Delft) Bastiaan van Loenen (TU Delft) and Birger Larsen (Aalborg University)
- To be coming: Data Ecosystems and Spatial Data Infrastructure workshop presentations (online)
WORKSHOP ON SUSTAINABLE BUSINESS MODELS FOR NMCAS

Joint Workshop organised by EuroGeographics and EuroSDR

Recap from previous workshops – Thank you for your attention!

8 FEBRUARY 2024