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# 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

# SUSTAINABLE OPEN DATA BUSINESS MODELS WORKSHOP (2017)

## MAIN OUTCOMES

### 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:

Welle Donker, F. & B. van Loenen (2016). *Sustainable business models for public sector open data providers*. JeDEM Journal of eDemocracy & Open Government 8(1) p. 28-61, <http://www.jedem.org/index.php/jedem/article/view/390>



The survey report


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

Day 1 Open data policies & Impact 13:00 – 17:30 (CET)	
Chair of Day 1 - Léa Bodossian, EuroGeographics	
13:00	Welcome from EuroGeographics and EuroSDR <i>Léa Bodossian, EuroGeographics</i> <i>Joep Crampvoets, EuroSDR</i>
13:10	Presentation of results on Open Data Questionnaire Q&A in slido <i>Frederic Cantat, EuroSDR</i>
13:30	<b>Presentations - Open data regulations/policies</b> The EU's open data policy in 2022 <i>Jiri Pilar, DG CONNECT</i> A pathway towards a sustainable open data ecosystem <i>Bastiaan van Loenen, Delft University</i> Q&A in slido
14:10	<i>Coffee/Comfort break</i>
14:40	<b>Presentations – Impact Open data (on the organisation)</b> Experience from IGN France <i>Clément Godin, IGN France</i> Impact Open data (on the organisation) Experience from SDFE Denmark <i>Peter Knudsen, SDFE Denmark</i> Q&A in slido
15:20	<b>Facilitated discussion using slido polls and feedback</b> <i>Discussion facilitators:</i> - <i>Carol Agius, EuroGeographics</i> - <i>Joep Crampvoets, EuroSDR</i>
16:20	<i>Comfort break</i>
16:35	<b>Panel Discussion impact of Open data, Insights from a mixture of organisations and perspectives</b> - an interactive question/comment session using slido Q&A/polls Panel facilitator: <i>Angela Baker, EuroGeographics</i> <i>Panellists:</i> - <i>Veronika Kúsová, Czech Office for Surveying, Mapping and Cadastre</i> - <i>Susanne Dräyer Relling, swisstopo</i> - <i>Jani Kylmäaho, National Land Survey of Finland</i> - <i>Zeljko Bacic, University of Zagreb</i>
17:25	Close Day 1 <i>Léa Bodossian, EuroGeographics</i>



Join at  
**slido.com**  
**#WSODBM2022**

 #OpenData  
#OpenData4NMCAs

# SUSTAINABLE OPEN DATA BUSINESS MODELS WORKSHOP (2022)

## AGENDA HIGHLIGHTS

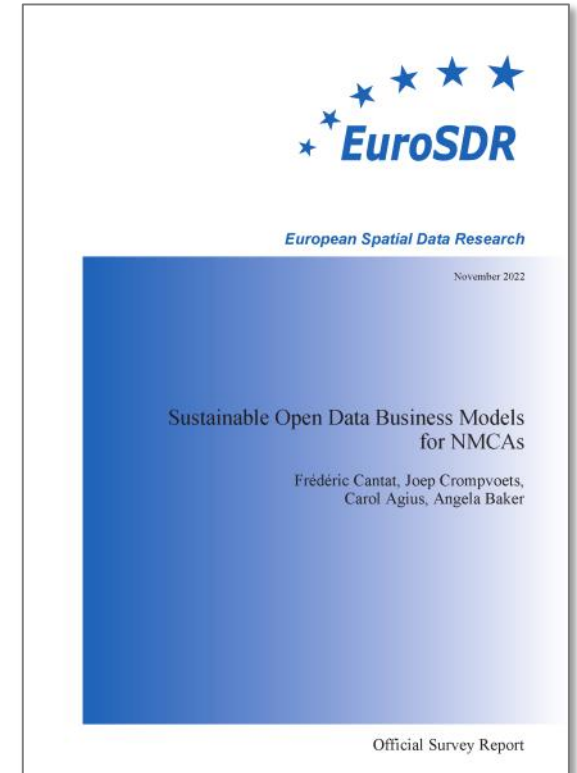
- *The EU's Open Data policy*, **1** Keynote by Jiri Pilar, EC DG for Communications Networks
- *A pathway towards a sustainable ecosystems* by Bastiaan van Loenen, and *Business models for open data (ecosystems)* by Frederika Welle Donker, Knowledge Centre Open Data, TU Delft, *Lessons from Open data 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)



[The survey report](#)



# 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*, **1** Keynote by Alexander Kotsev, EC Joint Research Center (JRC)
- *Challenges and opportunities for SDI in the emerging and evolving geospatial ecosystem*, **1** Keynote by Serena Coetzee, University of Pretoria (South Africa)
- *Data Spaces - EU's vision for alternative data exchange infrastructures*, **1** Keynote 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 NMCA's, 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

# DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023)

## MAIN OUTCOMES 1/5

### 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*

# DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023)

## MAIN OUTCOMES 2/5

### 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**]

The geospatial [data] ecosystem is part of the larger [data] digital ecosystem

'living' actors  
'non-living' information and technologies

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,*

# DATA ECOSYSTEMS AND SPATIAL DATA INFRASTRUCTURE WORKSHOP (2023)

## MAIN OUTCOMES 5/5

### 6. Devising value creation of open data intermediaries -- Potential types of open data intermediaries

Paper A

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



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 955569.



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### 7. Exploring value capture of open data intermediaries

Paper B

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



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 955569.



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





# 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)

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Recap from previous workshops – **Thank you for your attention!**

8 FEBRUARY 2024

