Business models of NMCAs

Which adaptations will be required to ensure sustainable financing?

Frederika Welle Donker
f.m.welledonker@tudelft.nl

TUDelft

KENNISCENTRUM OPEN DATA http://www.kcopendata.eu

Overview

- Introduction to EuroSDR
- Outcomes of the April 2017 survey
- Conclusions

TUDelft

KENNISCENTRUM OPEN DATA http://www.kcopendata.eu

EuroSDR – Pan-European network for mapping agencies and academia

"EuroSDR is a not-for-profit organisation linking National Mapping and Cadastral Agencies with Research Institutes and Universities in Europe for the purpose of applied research in spatial data provision, management and delivery."

- 1953-2003 Organisation Européenne d'Etudes Photogrammétriques Experimentales (OEEPE)

TU Delft

KENNISCENTRUM OPEN DATA http://www.kcopendata.eu

3

2017 research projects

- Joep Crompvoets and Jantien Stoter, "Project Identifying the Economic Value of 3D Geoinformation"
- Roger Longhorn and Jade Georis-Creuseveau, "Project Marine Spatial Data Infrastructure"
- Bastiaan Van Loenen, Frederika Welle Donker and Joep Crompvoets, "Project Business Modelling for Open Data of NMCA data"
- Fabio Remondino, "Project Oblique Aerial Cameras"
- Bénédicte Bucher, "Project Historic Data"
- Bénédicte Bucher, "Project Benckmark on Software which can handle Heterogenous Data"

TU Delft

4

KNOWLEDGE CENTRE GEOINFORMATION GOVERNANCE

Aim of Business Modelling for Open Data of NMCA data project

Most European National Mapping & Cadastral Agencies (NMCAs) are self-funding agencies,

- i.e. required to generate sufficient income to cover a substantial part of their operating costs.

A shift from licenced data supply to open data supply

- loss of revenue in the short term
- may pose a risk to data quality.
- become more dependent on political will to cover (part of) operating costs

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

Research design of this project

An online survey of NMCAs in April 2017 to assess:

- Start of open data
- Type of funding in percentages
- Most popular open datasets
- Funding of open data
- Open data policies & licences
- Measures taken to ensure long-term sustainability of open data
- Motivation for open data
- Assessment of maturity level of open data
- Effects of open data to date
- Opinion / vision on future of open data
- Success factors of open data

Response rate of the online survey

- 577 persons received a link to online questionnaire
- 43 completed forms returned

17 forms by 15 EuroSDR member	26 forms by non-EuroSDR members
• 11 National Mapping / Cadastral Agencies (NMCAs)	• 10 NMCAs
• 2 State / Local Mapping / Cadastral Agencies (LMCAs)	• 4 LMCAs
• 2 Clearing Houses / Portals	• 2 Open Data public sector bodies
• 1 University	• 4 Universities
	• 3 Private Companies
	• 1 NGO
3 NMCAs returned form twice	• 1 anonymous entry

Geographical response

Country	No. of respondents
Belgium	3
Bolivia	1
Canada	1
Columbia	1
Croatia	2
Cyprus	1
Czech republic	2
Estonia	1
Finland	1
France	1
Germany	5
Ghana	1
Global	1
Great Britain (UK)	1

Country	No. of respondents
Hungary	1
Italy	2
Ireland	2
Lithuania	1
Netherlands	2
Niger	1
Northern Ireland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	2
Spain	3
Sweden	1
Switzerland	1
United States of America	1

Geographical response

27 European (N)MCAs of 43 total responses

Country	No. of respondents
Belgium	3
~~Bolivia~~	~~1~~
~~Canada~~	~~1~~
~~Columbia~~	~~1~~
Croatia	2
Cyprus	1
Czech republic	2
Estonia	1
Finland	1
France	1
Germany	5
~~Ghana~~	~~1~~
~~Global~~	~~1~~
Great Britain (UK)	1

1x Eurogeographics
1x Information Flanders
1x private company

Non-EuroSDR NMCA

1x federal MCA
3x state MCAs
1x university

Country	No. of respondents
Hungary	1
Italy	2
Ireland	2
Lithuania	1
Netherlands	2
~~Niger~~	~~1~~
Northern Ireland	1
Portugal	1
Romania	1
Slovakia	1
Slovenia	2
Spain	3
Sweden	1
Switzerland	1
~~United States of~~	

unknown

2x universities

Non-NMCA gov't agencies

Non-EuroSDR Cadastre

Non-EuroSDR NMCA

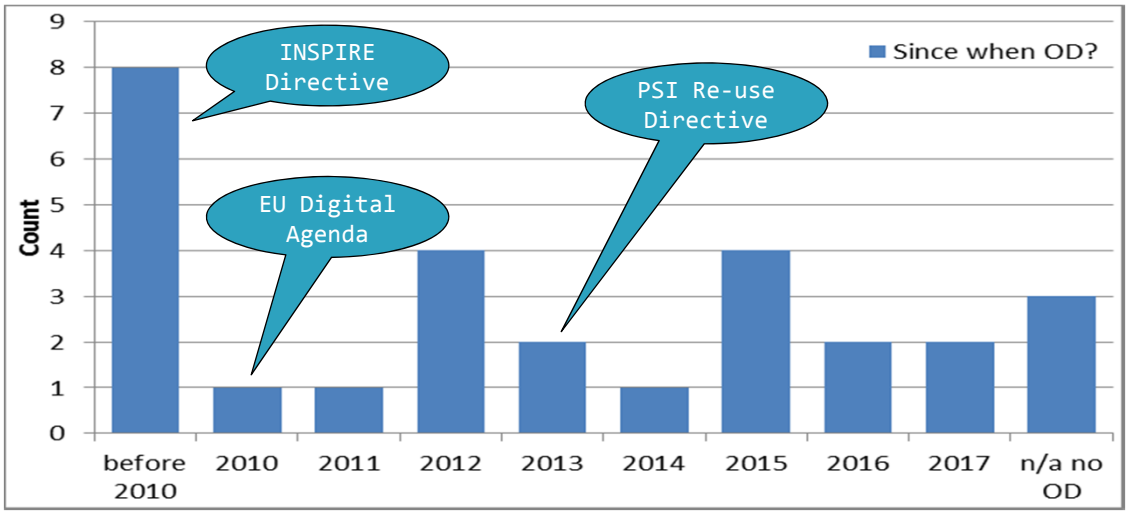
15 out of 18 NMCA EuroSDR members responded = 83%

Inclusion criteria

Only completed forms of:

- 17 forms of 15 European-based Mapping and Cadastral Agencies
  - 2 Cadastral agencies
  - 6 State / Local Mapping and Cadastral Agencies
- The Clearing Houses
  - Information Flanders
  - Eurogeographics
- Open Data public sector bodies
  - Ireland Environmental Protection Agency
  - Ireland Office of Public Works

Year when open data supply started



Who were the early adopters?

Country	Name organisation
Croatia	State Geodetic Department
Estonia	Estonian Land Board
France	IGN
Ireland	Dept. of Public Works
Lithuania	State Enterprise Centre of Registers
Portugal	Direção-Geral do Território
Spain	National Geographic Institute - Nat. Geographic Information Centre (IGN-CNIG)
Catalunya	Institut Cartogràfic | Geològic de Catalunya
Great Britain	Ordnance Survey

Breakdown of funding for operational costs

9 organisations financed for 90-100% by central government before open data and 10 organisations for 100% after open data

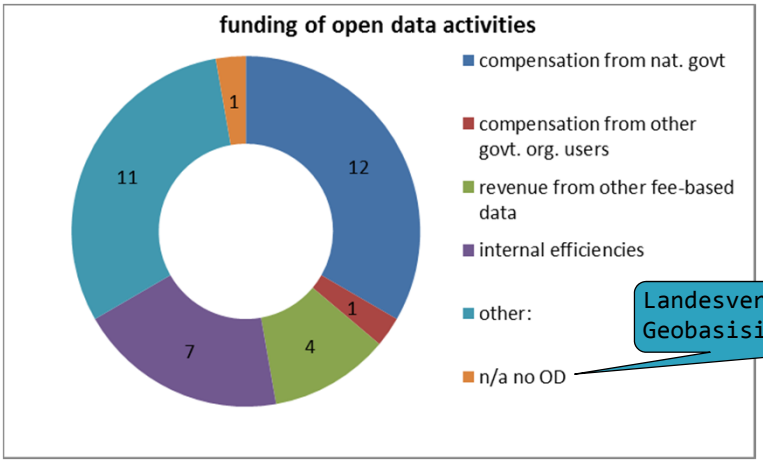
- Information Flanders
- Estonian Land Board
- Germany Bundesamt für Kartographie und Geodaesie
- Ireland Environmental Protection Agency
- Romania National Agency for Cadastre and Land Registration
- Geodesy, Cartography and Cadastre Authority of the Slovak Republic
- Czech office for Surveying, Mapping and Cadastres (90-100% before OD, and 90-100% after)
- Surveying and Mapping Authority of the Republic of Slovenia (98% before OD and 100% after)

Breakdown of funding of operational costs

- 5 organisations received between 60-90% of funding from national government before open data, and this percentage remains more or less stable after open data
  - Except Spain (IGN-CNIG) (from 66% before OD, and 58% after. After OD more income from tailor-made products and international projects)

- Other sources of income:
  - Specific taxes (Croatia - 10%)
  - Registration fees (4 organisations between 6-100%)
  - Fee-based data (8 organisations between 6-60%)
  - Other sources (3 organisations between 4-15%)
  - Membership fees (Eurogeographics – 70%)

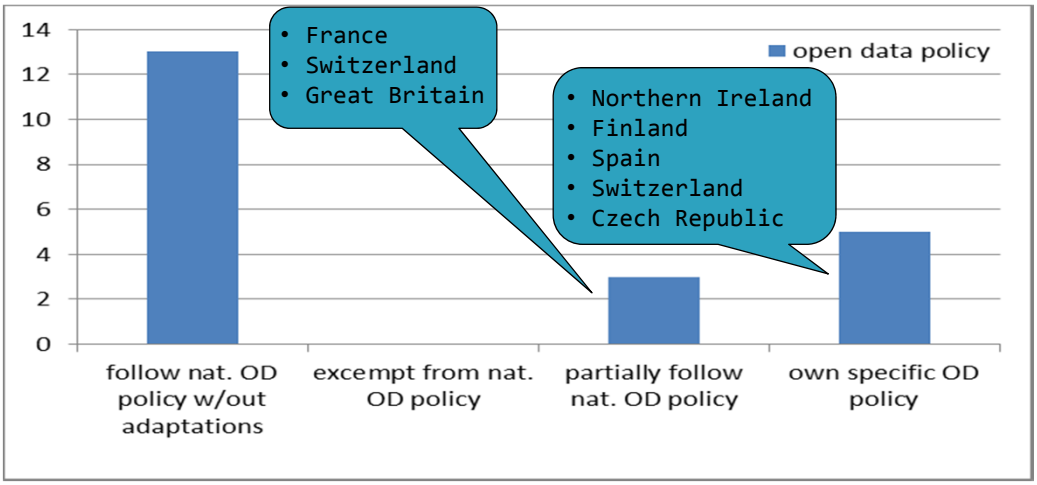
Funding of open data activities



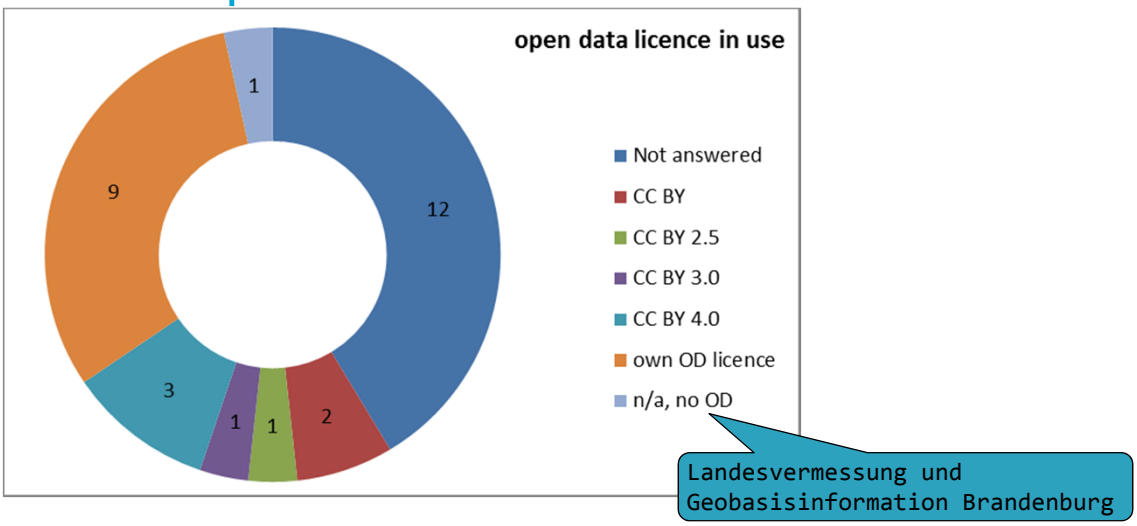
'*other*' included "commercial projects", "international projects", "sale of large-scale data when small-scale are available as open data", and answers that were already available as a selectable option

Landesvermessung und Geobasisinformation Brandenburg

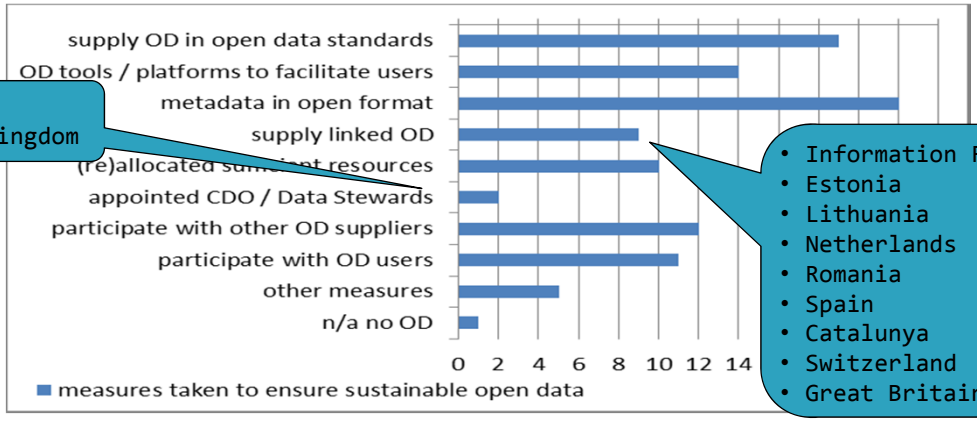
Follow national Open Data policy or formulated own version?



Which Open Data Licence?



Measures taken to ensure open data availability in the long term

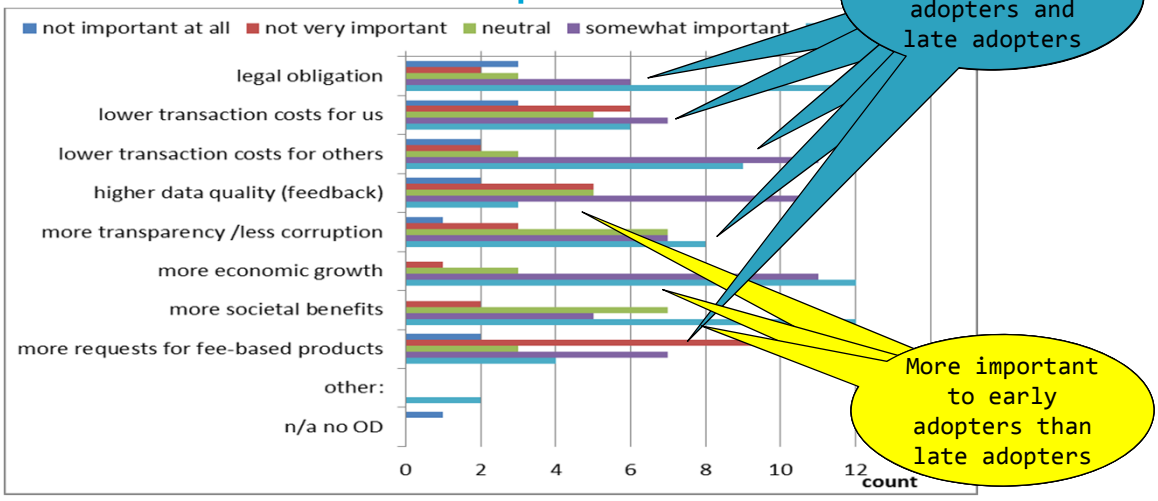


- Romania
- United Kingdom

- Information Flanders
- Estonia
- Lithuania
- Netherlands
- Romania
- Spain
- Catalunya
- Switzerland
- Great Britain

- *'other measures'* included "participation in hackathons", "innovation programmes", "INSPIRE requirements", and "follow national guidelines"

Motivation for open data

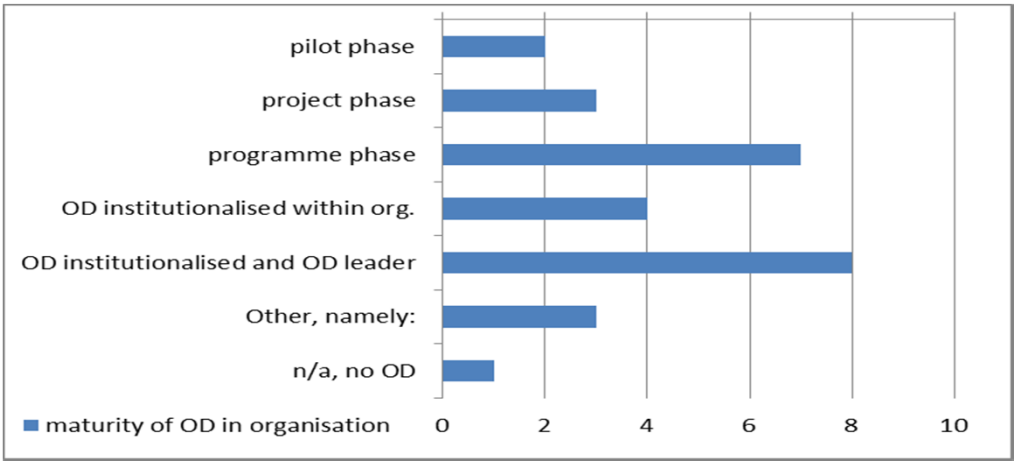


No difference between early adopters and late adopters

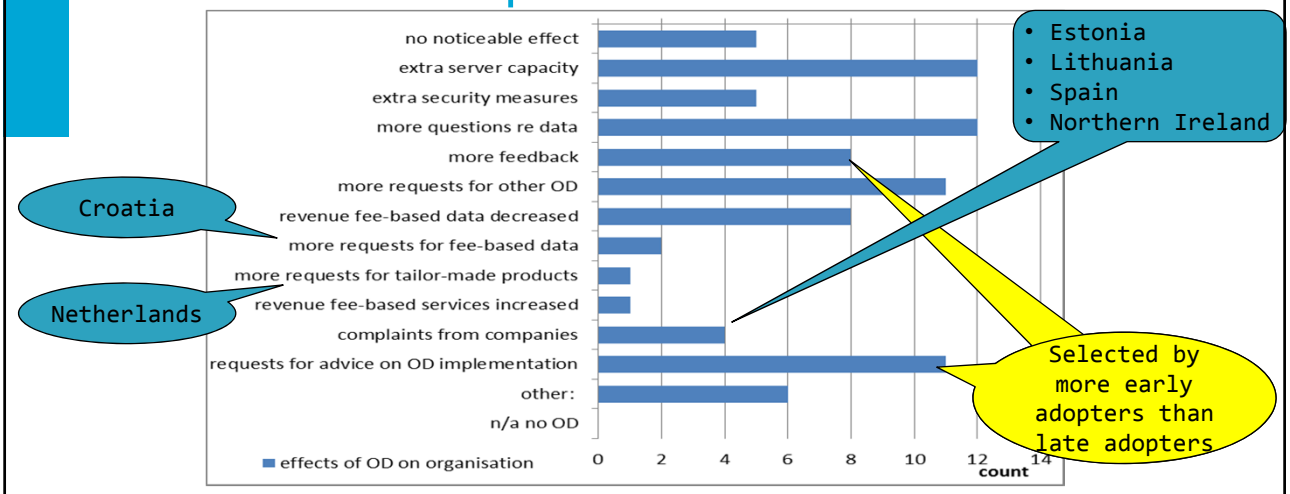
More important to early adopters than late adopters

- *'other'* included "positive contribution to education / research" and "promotion of other products and services"

Level of Open Data maturity



Effects of open data on the NMCA



'other' included "increased data traffic", "less information about who is using the data and for what", "contact with new types of users" and "seen to be a partner in data rather than a supplier"

Preliminary conclusions from survey

- Open data predates Digital Agenda for Europe 2010
  - INSPIRE Directive appears to have a distinct influence
- Nearly all NMCAs receive some extra funding / compensation
  - Ranges from 5% to 100%
- Open data supply has had little effect on breakdown of funding
  - Most NMCAs depend on other sources of income
- Open data activities mainly financed by:
  - Sale of other data products / services
  - Internal efficiency gains

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

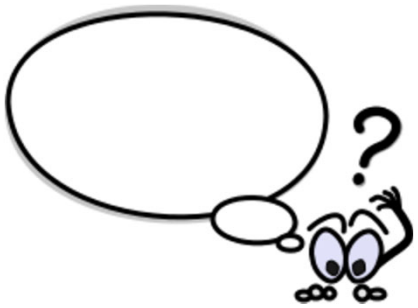
For more in-depth case studies, see:

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. 25-61 http://www.jedem.org/index.php/jedem/article/view/390

Open Data future

- Open Data is here to stay even for self-funding agencies
  - But not without sustainable (co-)funding!
  - Positive business cases for (continuous) political support
  - More cooperation between data suppliers and users
  - Funding!

Questions?



Welle Donker, F. M., J. Crompvoets and B. Van Loenen (2017). Adapting National Mapping & Cadastral Agencies business models to open data supply: the survey results. Leuven, EuroSDR. Official Publication no. 67: 36, http://kcopendata.eu/wp-content/uploads/2017/12/2017_EuroSDR-Pub67_NMCAs_BusinesModels_OD.pdf

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