OECD Digital Government Studies

Open Government Data Review of Poland

UNLOCKING THE VALUE OF GOVERNMENT DATA

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Foreword

Poland is seeking to strengthen its strategic approach to the design and implementation of open government data (OGD) policies and initiatives to deliver the economic, social and good governance benefits. These policies can foster a more open and innovative public administration and create more opportunities for citizens and businesses. To support these efforts, the government of Poland invited the OECD to conduct an *Open Government Data Review* in 2015.

The Review's recommendations are the result of intensive interactions with and among government officials, national stakeholders, the OECD Secretariat, and peers from OECD countries. Findings are also based on a survey administered across public sector institutions within the Polish administration. The Review was discussed during the OECD Expert Group Meeting on open government data in April 2015, when representatives of 26 member and partner countries endorsed the policy recommendations.

The central message of the Review is the importance of moving from compliance-driven efforts towards a more proactive release of data, sustained by a stronger focus on value creation and a common vision and sense of ownership across the administration, at all levels of government. The Review offers a roadmap for improving the impact of OGD policies. This entails defining a common narrative, establishing the necessary governance and institutional frameworks, nurturing and engaging key actors, and taking steps to ensure that data is re-used to create value. In this way, Poland can leverage the full potential of OGD to further promote a citizen-driven, efficient and effective government.

The Review offers recommendations for more effective implementation in line with international best practices and OECD standards. It provides insights for other countries seeking to improve OGD policies. The *OECD Open Government Data Review* is an important contribution to the ongoing international debate on how best to ensure that OGD efforts have the desired impact. This is the first review of this kind, and it supports the OECD work that resulted in the *OURdata* Index (Open, Useful and Re-usable Government Data Index). The Index measures data accessibility and data availability in the national data portal, and government's efforts to support data re-use.

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The *Open Government Data Review of Poland* was written by Barbara-Chiara Ubaldi, who heads the OECD's work on Digital Government and Open Government Data, and Arthur Mickoleit, digital government policy analyst. Strategic directions were provided by Edwin Lau, Head of the Public Sector Reform Division, and Luiz de Mello, Deputy Director of the Public Governance and Territorial Development Directorate. Jennifer Allain edited the manuscript and Lia Beyeler prepared the manuscript for publication.

This review benefited from the valuable experience and orientation by two national peer reviewers: Aura Cifuentes of Etalab at the French Prime Minister's Secretariat-General for Modernisation of Public Action and Arie Scheer from the Dutch Ministry of the Interior and Kingdom Relations.

The review team wishes to acknowledge the great contributions made by the numerous Polish stakeholders during interviews and in answering the OECD survey carried out as part of the review process. Many of these stakeholders were present during the review's public launch event on 26 May 2015 in Warsaw, Poland.

Finally, this review would not have been possible without the great commitment and support of the Polish Ministry of Administration and Digitisation. We are particularly thankful to the Undersecretary of State Jurand Drop, the Director of the Information Society Department Groń Maciej, Senior Specialists Barbara Szymańska and Renata Palen, and former Minister Michał Boni.

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Executive summary

The Polish government's ambitions for open government data (OGD) are the result of at least three concurrent dynamics over the last few years: a) political vision and leadership from the top of the Polish administration; b) opportunities and pressure arising from EU-related policy developments; and c) advocacy by civil society, encouraged by the positive advances of a few local government authorities opening up their datasets for public re-use. Despite individual steps, efforts so far have largely been sequential and benefitted little from involvement of non-government actors. This has left a vacuum in advancing an OGD agenda whose objectives and potential impacts would be shared and understood by all actors. As a result, Poland currently trails the OECD's *OURdata* Index on open, useful, and re-usable government data.

However, today's leading OECD countries in the area of OGD were some years ago in a similar position to Poland. The *Open Government Data Review of Poland* examines the efforts made by the government to date and proposes actions to improve access, re-use and value creation of government data. The review refers to the experiences in leading OECD countries and it utilises the OECD methodology for analysing OGD initiatives and the *OECD Recommendation of the Council on Digital Government Strategies.*

The Review's recommendations focus on the conditions required to maintain high-level political attention and on the actions needed to encourage key actors to discuss open data across sectors; to advise on the prioritisation of data release, policy design and implementation; and to re-use data for value generation. The recommendations underline the importance of setting up a governance framework with a clear chain of responsibility for public data management (i.e. from data production to collection, sharing, use and release).

OGD governance and "infrastructure" are pivotal concepts that are still missing in many OECD countries. They are *sine qua non* conditions to manage the risks associated with increasingly data-driven administrations, and to balance risks and potential of OGD in a systemic way to ensure that risks do not hinder potential benefits.

Poland is now putting an OGD framework in place to support coherent and sustainable efforts across the administration that would achieve the desired impacts. The continuity and sustainability of OGD policies require not only a central "push" to make things happen, but also the co-ordination and buy-in of the larger public administration – a cultural shift among civil servants. A critical component is to stimulate the emergence of an "ecosystem" composed of related and co-operating stakeholders. Such ecosystems have played a key role in creating value from OGD in leading OECD countries.

In particular, the Review highlights that the Polish government should:

- **Engage communities and foster the development of a dynamic open government data ecosystem.** The government should focus on upgrading the national open government data portal (CRIP), transforming it from a simple data

repository into a platform for stimulating public engagement, collaboration and data re-use. The adoption of a more stringent set of standards and guidelines on data formats, data quality and metadata, together with clarity on licensing and re-use conditions, can sustain re-use and give domestic actors greater long-term certainty. The government could consider creating and managing communities of data re-users, making use of local government experiences and placing a stronger focus on raising awareness and building relevant capacities both within the administration and across society. These actions would stimulate a more demand-driven approach to open data, help empower a future generation of innovators inside and outside the public sector, and generate understanding and support for common goals across government. Gathering user feedback is important to demonstrate the relevance of OGD for government, economy and society, and thus sustain political and public support for OGD. Equally relevant in stimulating the development of the OGD ecosystem is to monitor actors' involvement in data re-use and the subsequent impact.

- **Stimulate ambition in the public sector in order to move from compliance-driven efforts towards a common vision and ownership.** A stable legal basis for open government data is necessary but insufficient. It has to be complemented by persuasion and illustration of the benefits of OGD for the wider administration. Too few government institutions and their leaders believe that opening up their datasets can create additional value. A more persuasive vision is needed that clearly articulates common goals and expectations and helps create collective commitment. This would help Poland move away from a context in which commitment is primarily based on compliance with laws and decrees. A detailed action plan could help set specific objectives, list relevant datasets for value generation, set timelines for their release, and establish governance and co-ordination mechanisms. Such a plan has to engage institutional and non-institutional actors, including by crowd-sourcing ideas, in order to create a common sense of ownership and to clearly identify barriers and challenges. Implementation of the second EU Public Sector Information (PSI) Directive can be an important catalyst to use OGD to increase transparency, improve citizen engagement and create new economic opportunities.

- **Formulate a common narrative and promote national "champions" to stimulate proactive data release across government.** More effective implementation of OGD policies depends on the ability of the Polish administration to move towards a more proactive release of data. Implementation should focus on clarifying user needs and public administration objectives in order to determine what data should be released and when. Domestic "champions" can help wider parts of the administration understand the benefits and surmount the challenges of opening up government data and can harvest synergies within and across levels of government. Stronger OGD governance can clarify responsibilities, ensure support and leadership from the top political level and facilitate co-ordination in implementing a shared agenda. The Government could establish a task force or unit, adequately staffed and with a clear mandate, to sustain the development of the OGD strategy, supervise co-ordination and implementation across government, and foster the OGD "ecosystem".

Poland's government committed to an ambitious OGD agenda as part of its public sector reform strategy. The administration now needs to follow strategic recommendations to design and implement the agenda in order to deliver the expected economic, social and good governance benefits. It cannot do that alone but depends on open and constructive exchanges with citizens, businesses and other stakeholders to generate innovation and support public sector reform.

Assessment and recommendations

Recognisable efforts are an important start

The *Open Government Data Review of Poland* was undertaken by the OECD to analyse the progress and challenges of open government data in the Polish national context. Based on the OECD methodology laid out in the working paper "Open government data: Towards empirical analysis of open government data initiatives", the country reviews recommend proposals for action that help countries improve their open government data (OGD) efforts.

The recommendations take into account the current open government data context in Poland and focus on specific priority areas for the government. In the case of Poland, the overall priority is the establishment of an OGD "infrastructure" to support coherent and sustainable efforts across the administration which will lead to the desired impacts: creation of an ecosystem of related and co-operating stakeholders; establishment of a supportive governance framework; and the development of the necessary skills and culture among civil servants.

The Polish government's ambitions and strategy on OGD are the result of at least three concurrent dynamics over the last few years: 1) political vision and leadership from the top of the Polish administration; 2) opportunities and pressure arising from EU-related policy developments; 3) advocacy by civil society, encouraged by the positive advances of a few local government authorities opening up their datasets for public re-use:

- Political vision is demonstrated in the national "Efficient State Strategy" of 2012, which is part of the National Development Strategy 2020. The National Development Strategy 2020 puts open government and open government data on the government's agenda with the aim of facilitating citizen participation, improving the quality of policy outcomes and creating new economic opportunities. The political vision has been further underlined by the creation of the Ministry of Administration and Digitisation (MAC) as the steward of digital government transformation. Leadership by the first Minister for Administration and Digitisation was instrumental in driving the wider open government agenda through digitisation.
- In terms of the EU context, the first Public Sector Information (PSI) Directive was issued in 2003 but its implementation in Poland was heavily delayed (Poland, along with Italy and Sweden, was subject to infringement proceedings launched by the European Commission). In 2011, the government amended the 2001 Law on Access to Public Information to comply with the PSI Directive and issued further decrees to implement the directive. Late implementation gave the Polish government the opportunity to adjust the implementation provisions to cater to new demands related to OGD, e.g. launching a dedicated portal for open government data (the Central Repository for Public Information, CRIP). Major opportunities and challenges now arise with the revised PSI Directive which is to be implemented in 2015. Moreover, substantial funding will be allocated to open government data projects as part of the

EU's Digital Agenda 2020 and its national implementation programme "Digital Poland Operational Programme" for the period 2014-20.

- Polish non-governmental organisations (NGOs) and advocacy groups have been very vocal in issuing demands for greater public sector transparency – including better access to public sector information and data. Non-government actors have been particularly encouraged by the open data dynamics of a few Polish cities, e.g. Poznan, Katowice, Warsaw, Gdansk, Szczecin. These factors contribute to the emergence of an ecosystem of actors that champion open government data, although that ecosystem is still very limited in breadth and depth when compared to leading OECD countries.

Nevertheless, political commitment to the OGD agenda seems to have ebbed recently. Early in its existence, the MAC took on a political leadership role for the open government and OGD agendas, persuading stakeholders within government of the benefits of OGD. However, the ministry's current efforts are primarily geared towards the implementation of policies, e.g. the establishment and operations of the CRIP, which leaves a political and leadership vacuum in advancing an agenda whose objectives are not necessarily shared or understood across the administration.

In fact, the OGD agenda in Poland today is mainly driven by legal compliance, rather than by the actual needs of the administration, society or the economy. This means that there is still a relatively wide gap between the ambitions for open government data articulated in strategic national and EU policy documents and the realities in the Polish public administration. The CRIP portal, for example, fulfils all legal requirements that are foreseen by national laws, but the contents offered so far generally fall short of the expectations of potential re-users across society.

There is a lack of more proactive and bold attitudes towards OGD in large parts of the administration. There are of course individual institutions that recognise the added value of opening up data for public re-use and that have a strong track record of using empirical evidence to craft policy proposals. This includes individual ministries, e.g. Ministry of Economy or Ministry of Health, as well as specialised agencies, such as the Central Statistical Office. Overall, these institutions constitute a minority within a public administration that is still hesitant to open up government data, foster its re-use by non-government communities, and use OGD as a tool to improve the quality of public policies and services.

Interviews with relevant actors, supported by desk research and analysis, confirm that the communities of government data re-users in Poland remain relatively small and their visibility as potential partners for value creation from government data is not very high. It is understandable that in a context where little relevant open government data is available, the incentives for NGOs or the business community to engage in this field are low. And even where relevant data might be available, the central administration has made little effort to raise awareness or otherwise stimulate re-use.

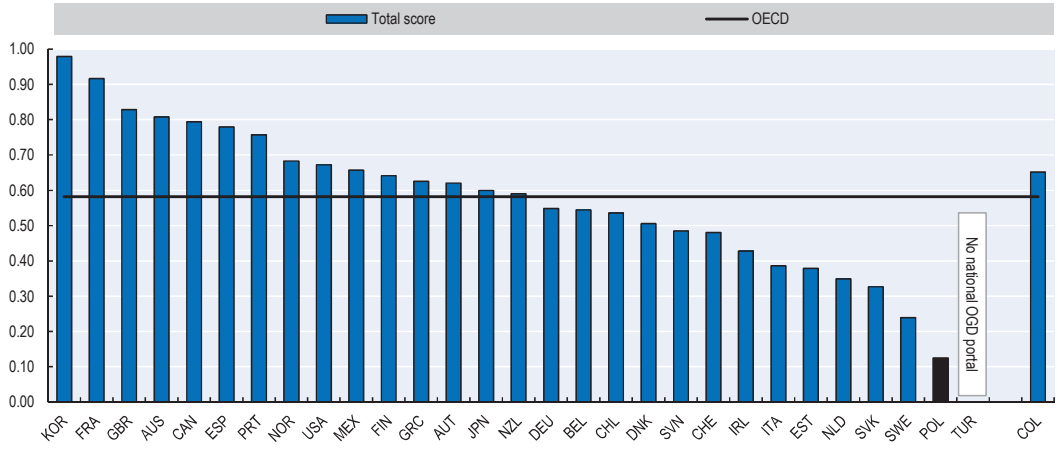
There is thus a need to more actively build and stimulate an ecosystem of related actors and institutions. Hackathons and similar data re-use events do take place in Poland, however, mostly in the private sector. The challenge – and an opportunity at the same time – for the Polish government lies in more actively leveraging such existing business communities.

All in all, open government data in Poland today is at a very early stage of development. Compared to other OECD countries, Poland ranks very low in effective government support for the development of OGD (see OECD, 2015). The reasons for this

are: 1) the relatively low availability of useful content, i.e. basic datasets determined by the G8 Charter on Open Data; 2) the relatively low level of accessibility of data on the national CRIP portal due to inconvenient formats, lack of good tools and functionalities; 3) little proactive government support to foster innovative re-use and stakeholder engagement in this area.

Figure 0.1. **OECD *OURdata* Index: Open, Useful, Re-Usable government data (2014)**

Composite index from 0 (lowest) to 1 (highest)



Note: This index is a "pilot" version.

Source: OECD (2015), *Government at a Glance 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/gov_glance-2015-en.

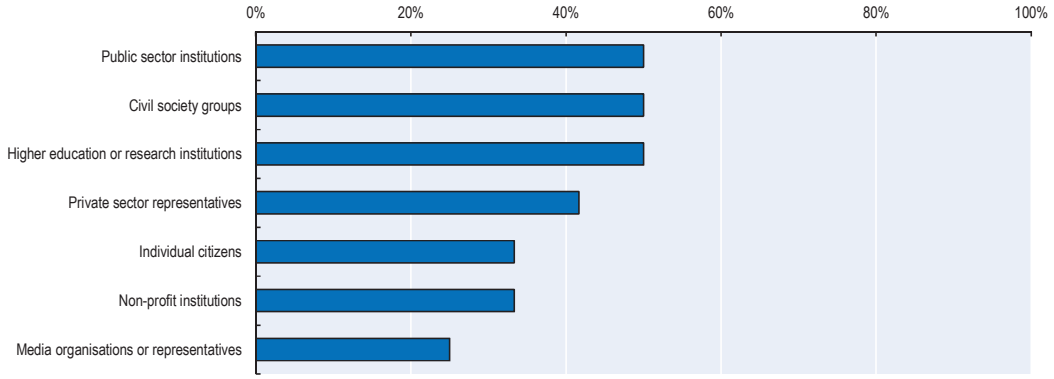
Leading OECD countries faced similar issues during the early steps of implementing national OGD strategies. Learning from those countries, Poland could overcome most of the issues mentioned above and make greater progress on the national open government data agenda. The government is willing and capable to do so – a recent illustration is the May 2015 upgrade to the CRIP portal, which greatly improves the design and facilitates access to government data.

Further improvements on the "supply side" will be necessary to reinvigorate political ambition and leadership around a common open government data agenda, and to build a common narrative and commitment that would favour more proactive behaviour across the administration. To ensure, however, that such measures have a lasting impact, the government needs to accelerate efforts to better understand and stimulate the "demand side" – which means to create an ecosystem for OGD and foster community dynamics.

Engaging communities and fostering the development of a dynamic open government data ecosystem in Poland

Leading OECD countries recognised early on the need to work across government boundaries and with stakeholders to reap benefits on open government data investments. In Poland that kind of cultural shift towards cross-boundary co-operation and collaboration needs to accelerate. Many public sector institutions (at the central level), for example, still only rarely consult specific user groups on their data needs and data re-use opportunities (Figure 0.2).

Figure 0.2. **Share of central government institutions that consult with specific user groups on the data they would like to access**



Source: OECD (2014), "OECD Survey on Open Government Data in Poland". Survey administered across the Polish public administration in 2014 as part of this review.

Lack of more systematic engagement is a strategic mistake given that intermediate actors are often the ones that best understand the realities "on the ground" and can therefore better evaluate the data needs that would allow for more effective policy formulation and implementation. Moreover, intermediate actors are also those that can add substantial economic value to open government data. Better conditions and incentives are especially important to stimulate the re-use of public sector data by small and medium-sized enterprises (SMEs) into innovative products and services.

International practices for building an ecosystem for OGD are not transferable one-to-one and need to be adapted to the local context. Three common areas of action are nevertheless evident and should constitute areas for the Polish government to focus on: 1) creation of the right framework conditions and enablers to allow better access, use and re-use of government data; 2) building and management of communities that can re-use government data in meaningful and value-adding ways; 3) using well-designed instruments such as data portals, hackathons and awards to further stimulate collaboration between the public sector and third parties. These lines of action need to be complemented with greater efforts to monitor the take-up and re-use of government data. Only then can the government build sustained support for open government data.

Barring a few exceptions, e.g. individual municipal governments, the Polish state administration has made little systematic effort to better understand the needs of data re-users. At the same time, only a few NGOs appear to show the willingness or capacity to engage in collaborative efforts around open government data, which is partly due to a lack of interest or awareness of the potential in this area. More intense outreach by government to different actors would create mutual benefits: for the public administration, a better understanding of data that societal actors can use to create value; for non-government actors a way to enhance capacity in using data as a tool to influence government policy making.

The involvement of the private sector should also be strengthened. Large enterprises have been successful in accessing and reusing public sector data in various ways to deliver innovative services and products, but SMEs could benefit from increased government attention to raise their interest and awareness for open government data. Moreover, the media and journalists are key intermediaries that need to be activated for

the development of a well-functioning open government data ecosystem. They can tell interesting stories based on government data and can play an instrumental role in increasing public trust in government data. Current efforts are not enough to engage the media as partners for open government data re-use.

The Polish government should consider the following recommendations:

- Evolve the national open government data portal (CRIP) from its current function of being a data repository towards becoming an actual platform that stimulates public engagement, collaboration and open government data re-use in Poland. Doing so will require technical fixes (e.g. improving search and ranking, giving access via application programming interfaces, or APIs), but it also requires using the platform as a means to build communities of interested actors. The Polish government has made efforts to improve the technical aspects of the CRIP through continuous improvement. It can make more progress on the community-building efforts by learning from the French experience: the French national open data portal has become a dynamic platform where government and non-government actors collaborate around data sources, re-use applications and new services.
- Establish a more stringent set of standards and guidelines on data formats, data quality and metadata. These are still very heterogeneous across the administration and often do not meet internationally used open government data requirements. Enforcement will be facilitated if these standards are developed and provided in a manner that makes it easy to integrate them, e.g. through well-designed handbooks and hands-on guidelines.
- Clarify licensing and re-use conditions. Government data on the CRIP or in other sources is often provided without explicit mention of conditionality, which creates uncertainty among re-users. The government should consider adapting permissive and internationally recognised licensing conditions in order to give domestic actors greater long-term certainty. Use of licenses that require the attribution of sources can make it easier for the government to monitor the actual re-use of datasets.
- Explore and manage communities of data re-users. The Polish government has taken a very supply-based approach to open government data by publishing datasets based on availability and feasibility. These should now make way to an approach where demand-side factors are integrated at all times. User feedback and user groups are important for demonstrating the relevance of open government data for government, the economy and society – and thus to sustain political and public support for the OGD agenda. Examples such as the United Kingdom's Open Data User Group or the French "DataConnexions" show how continuous exchange between government, civil society, academia, the media and businesses of all sizes fosters greater co-operation and helps to establish partnerships for continuous release and re-use of data. Collaboration is essential to stimulate data-driven creativity and innovation that leads to the generation of greater and more inclusive economic and social benefits.
- Establish a panel of businesses that are already using public sector information, or that might do so in the future. This is critical to recognise and illustrate the new business opportunities that can emerge when public sector data is proactively opened up. For example, a few years ago the Spanish government started monitoring a panel of several hundred companies that re-use public sector data. The government uses the data to estimate economic and employment impacts, as well as to gage the satisfaction of the business sector with the government's implementation of open government data. A different mechanism with similar ambition is the United Kingdom's establishment of

the Open Data Institute, which aims to foster the re-use of data for economic and social purposes, and to monitor impacts in those areas.

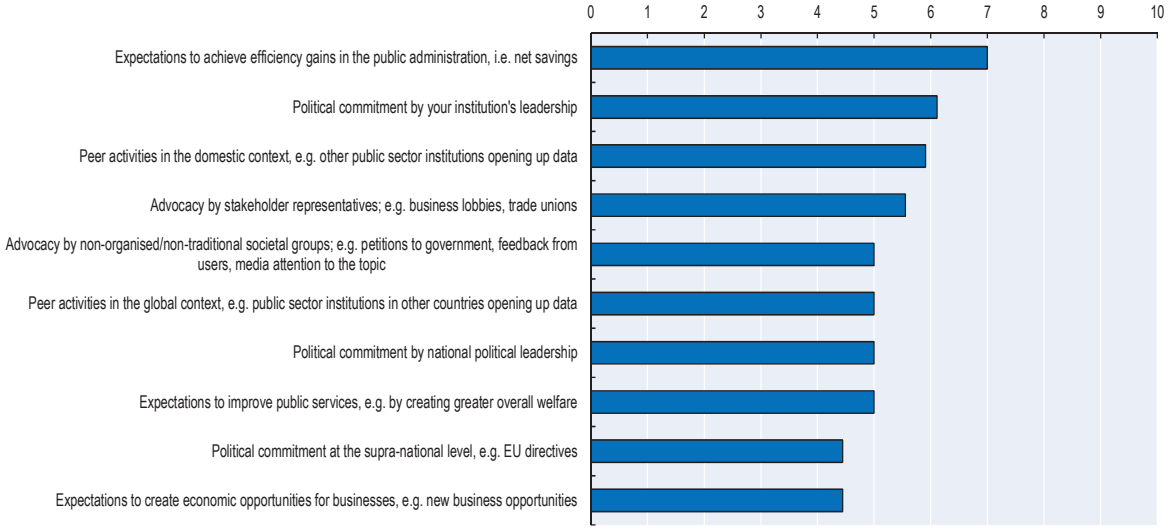
- Leverage local government experiences for the national OGD agenda. It is critical to include the existing experiences made at sub-national levels into central government efforts of ecosystem development. Several Polish municipalities have initiated actions that can serve as blueprints and illustrations of what can be achieved with open government data when the public sector maintains feedback loops with external actors.
- Generate understanding and support for the open government data agenda across government. Contests, awards and hackathons take place at local levels of government in Poland but not yet at the central level. These can be a good way to showcase the potential of open government data. However, to achieve lasting impact, they should not be designed as one-off events but rather be part of a larger strategy which tackles a specific policy challenge. Contests can be designed to use data as part of solving a specific challenge, e.g. on how to compare and improve the performance of public hospitals in the country. Collaborative exploration of public sector data in this and other areas is helping OECD governments generate better understanding of the challenges, and come up with innovative approaches in addressing them.
- Further stimulate supply-side dynamics. The Polish government could consider introducing awards and similar ways of recognising public administration actors that have been particularly proactive in publishing open, useful and re-usable datasets. This facilitates building intrinsic motivation and ambitions within the administration.
- Focus on raising awareness and building capacities both within the administration and across society. The creation of open data literacy and the fostering of an OGD culture within the administration and society is pivotal to create a critical mass of data re-users which is needed to produce value. This can be achieved by providing training programmes, tools and guidelines designed to ensure that public sector employees are capable of using open data effectively for improved policy-making processes.
- Empower a future generation of innovators inside and outside governments. Training and fellowship programmes, partnerships with academic institutions, financial support for social entrepreneurs and start-ups are all means that can help create an environment conducive for innovations built on OGD.

Creating ambition: From compliance-driven efforts towards common vision and ownership

Developing a common vision and ownership is important to synchronize expectations and perceptions of OGD across the administration, to favour economies of scale and to capture synergies. It seems that large parts of the Polish administration do not have a clear understanding of the potential benefits of OGD. This is illustrated by the fact that most central government institutions in Poland today are driven by expectations for savings (e.g. to reduce the time spent on answering requests to access public information), by leadership commitment or by peer pressure (Figure 0.3). Only a few institutions re-use and value creation with the belief that their data can improve the quality of public services or stimulate economic activity.

Figure 0.3. **Ranking of driving factors for opening up data in the central administration**

Average ranking across the central government; from 0 (weak) to 10 (strong)



Note: Based on responses to the question "From your institution's point of view how strong are the following individual driving factors for opening up data held by your institution?"

Source: OECD (2014), "OECD Survey of Government Institutions in Poland", OECD, Paris.

A commonly shared ambition for opening up public sector data should incite individual institutions to share data more openly with each other, to use data when crafting policies and to co-operate with external actors. This does, however, require more than a legal framework and compliant institutions. It requires a shift of organisational cultures that can only happen if individual institutions are part of the agenda for intrinsic reasons instead of feeling obliged to fulfil a mandate.

A common vision for OGD should therefore determine common goals and expectations – for instance in terms of the resulting impacts on government transparency and the quality of public services. The vision could form the basis for a more detailed roadmap with proposed milestones and indicators to measure progress. The Polish government should in detail consider the following recommendations:

- **Focus on creating collective commitment towards the OGD agenda across the public sector and around common objectives.** This implies moving away from a context in which commitment is primarily built on compliance to laws and decrees. While creating a stable legal basis is important, this must be complemented by effective means of persuasion and illustration of the benefits of OGD for wider parts of the administration. Too few government institutions and their leaders believe that opening up their datasets can create value by stimulating economic activity, improving public service quality and enabling more informed decisions. This calls for a more persuasive vision, which clearly articulates the expected goals and benefits – not necessarily in terms of numbers, but also in terms of illustrative examples. For instance, OECD governments have adopted open data policies (e.g. Mexico, the Netherlands) and/or common open data action plans (e.g. Canada, Germany) inclusive of objectives, milestones and criteria for monitoring progress. The development of an action plan could engage institutional and non-institutional actors in an effort to crowdsource ideas

and create a common sense of ownership – similar to the way the German federal government is currently proceeding. This should result in an action plan for Poland that determines specific objectives, lists relevant datasets for re-use, and sets governance mechanisms and timelines for their release.

- **Identify cross-cutting barriers that pose a challenge to OGD implementation.** Existing laws might require revision in order to balance the needs for statistical anonymity with the needs to monitor the effectiveness of public service delivery. For example, it is currently impossible to compare performance criteria of hospitals across the country. Another issue, interoperability, bears great importance for the capacity of the state to share and utilise data as an asset in policy making and service delivery.
- **Utilise the implementation process of the second EU PSI Directive to underline the importance of open government data as a vector for greater transparency, citizen engagement and new economic opportunities.**

Creating a common narrative to stimulate proactive data release across government

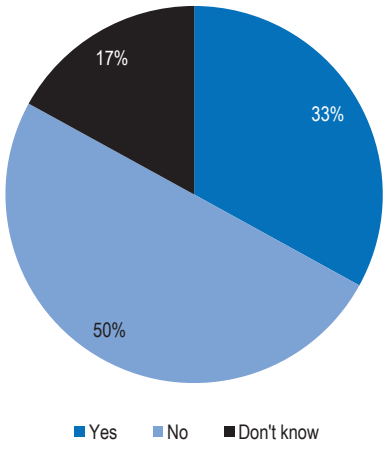
Constructive leadership and effective governance models are necessary to persuade senior leaders in ministries and agencies of the importance of data for their activities. This can include formal mechanisms as well as informal networks to promote good practices, raise the visibility of OGD "champions" in the administration (including at sub-national levels of government) and identify common barriers.

Good examples of evidence-based policy formulation, implementation and monitoring exist in the Polish administration. But they currently constitute singular islands of capacity within an otherwise very bureaucratic context in which the re-use of empirical evidence by third parties is limited. Even within the public administration, individual institutions face hurdles to access and re-use other institutions' datasets to inform their policy choices in critical areas such as healthcare or education.

The relatively low recognition of the importance of data is illustrated by the finding that just around one-third of Polish public sector institutions have a strategy or policy to make better use of data (Figure 0.4). This is reflected in the behaviour of agencies whose efforts are mostly driven by legal compliance and which remain hesitant in opening up datasets. These challenges must be read alongside the wider context of digital government in Poland, where individual institutions tend to act in silos and therefore display very heterogeneous levels of digitisation.[1] In such a context, the effectiveness of adding another layer of formal co-ordination mechanisms cannot be guaranteed unless these mechanisms are accompanied by strong persuasive elements that lead to voluntary buy-in by individual ministries, and to some executive power to enforce implementation when necessary.

More effective implementation of OGD policies depends on whether the Polish administration can make the shift towards a more proactive release of data. This will not happen through compliance with laws alone. Implementation actions should therefore focus on clarifying user needs and public administration objectives to drive data release. The Polish government should consider the following recommendations:

Figure 0.4. **Share of Polish national government institutions that have an official strategy or policy to make better use of data**



Source: OECD (2014), "OECD Survey of Government Institutions in Poland", OECD, Paris.

- **Strengthen the governance of OGD.** There is a need to clarify responsibilities, ensure top political level and leadership support, and to facilitate co-ordination of the implementation of a shared agenda that is not only driven by the EU PSI Directive. In order to ensure the right level of political support and engagement, several OECD countries have created OGD co-ordination functions within the centre of government (e.g. France, Mexico, the United Kingdom, the United States), and others at line ministries with support from their top political level (e.g. Denmark, New Zealand).
- **Establish a task force or unit that is adequately staffed and has a clear mandate.** The task force or unit should lead the development of the OGD strategy and policy, supervise the co-ordination of implementation across government, and foster the establishment of the OGD ecosystem. This could include tasks related to reaching out to data users to improve service delivery, drive revenue growth, encourage third-party innovation, etc. The best location for this task force within the Polish government would currently be the Ministry of Administration and Digitisation.
- **Promote domestic champions.** A national vision for OGD cannot be shaped exclusively on international examples. The Polish administration already has institutions that champion open government data in their particular fields. These institutions, along with re-users of their data, can be leveraged to make wider parts of the administration understand the benefits and surmount the challenges in opening up government data. This can, for example, be achieved through awards and other means to raise visibility.
- **Promote sharing of experiences and creation of synergies within and across levels of government.** OGD champions also exist at local levels of government and several Polish municipalities have relevant experiences to share. It is important to enable the sharing of experiences among state actors regardless of where they are located within the state structure.

Note

1. See Ubaldi (2013).

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Chapter 1.

Building a common and coherent strategy for open government data in Poland

This chapter provides an overview of the Polish context for open government data. It describes the actors and conditions that led to the current state of OGD in Poland, highlighting the need to move from compliance orientation towards a whole-of-government commitment to the open government data agenda. The chapter emphasises the need for charismatic leadership and stronger community involvement as core elements to sustain commitment and buy-in across government.

Introduction

Out of 30 countries surveyed by the OECD, 25 have a dedicated comprehensive strategy on open government data (OGD) at the national or federal level (OECD, 2015b). By making their data available, easily accessible and re-usable by citizens and businesses, governments can improve accountability and transparency, create new business opportunities and better inform both citizen engagement and their own decision making. In this context, Poland's main priorities for open government data are (in hierarchical order; OECD, 2014):

1. to increase government openness
2. to increase government transparency
3. to deliver public services more efficiently and more effectively
4. to facilitate public participation in policy debates
5. to facilitate public engagement in decision making and policy cycles.

Drivers for the formulation of needs and opportunities for open government data in Poland

Today's OGD strategy of the Polish government is the result of at least three concurrent dynamics over the past years: 1) political vision and leadership from the top of the Polish administration; 2) opportunities and pressure arising from EU-related policy developments; 3) advocacy by civil society, encouraged by positive advances of a few local government authorities opening up their datasets for public re-use.

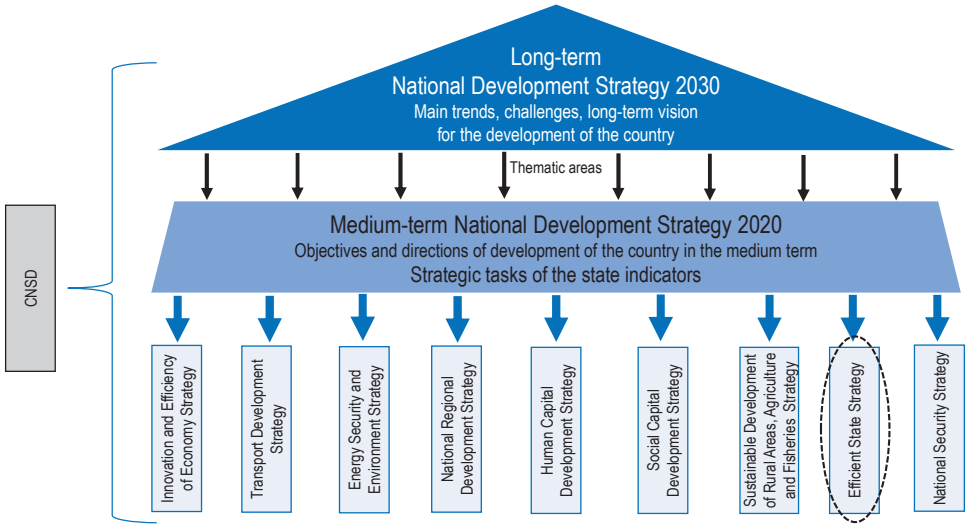
Political vision within the Polish administration was manifested very strongly by the then Minister of Administration and Digitisation, Michal Boni. Currently a member of the European Parliament, Minister Boni was a key figure in the establishment of the Ministry of Administration and Digitisation (*Ministerstwo Administracji i Cyfryzacji*, MAC) – a merger of different functional areas from the Ministry of Interior and Administration and the Ministry of Infrastructure (cf. Annex A in OECD, 2013). During this time, the Polish government revised parts of its long-term development agenda, including in the area of digital government.

The "Efficient State Strategy" – which is a component of the National Development Strategy 2020 (Figure 1.1) – defines an efficient state as being "transparent, friendly, supportive and participative" (Council of Ministers, 2012). The strategy's first objective is to open up government (Council of Ministers, 2013), which refers to opening up public sector resources, including data, as well as opening up governance processes for greater citizen involvement. It sets the specific target of creating a central platform for sharing public sector data within the administration and with the wider public. The strategy also cites the need to achieve more harmonised use of digital technologies across the administration.

Preceding the creation of the MAC and formulation of the Efficient State Strategy was the establishment of a "Board of Strategic Advisors" to the then Prime Minister of Poland, Donald Tusk. The Board was headed by Minister Boni and included individuals from academia and civil society. During its existence from 2008 to 2011, the Board issued several high-profile reports, one of which, the "Poland 2030 Report", became a strategic instrument for the definition of national priorities under the Efficient State

Strategy, establishment of the MAC and putting open government data on the government's agenda.[1]

Figure 1.1. **Efficient State Strategy as part of the National Development Strategy 2020**



Source: Council of Ministers (2012), *National Development Strategy 2020*, attachment to Resolution No. 157 of the Council of Ministers, 25 September.

Besides domestic developments, the EU's influence on open government data in Poland cannot be neglected. The EU Digital Agenda 2020 foresees support and funding for the sharing of public sector information, and this link between domestic and EU affairs is explicitly made in the Polish Efficient State Strategy. In concrete terms, the "Digital Poland" Operational Programme will disburse over EUR 2 billion of EU Structural Funds between 2014 and 2020 (Ministry of Infrastructure and Development, 2014). The programme's two major focus areas are high-speed Internet development and the promotion of digital and open government.

Also influential over the past years was the fact that Poland was lagging behind its fellow EU member countries in the implementation of the Public Sector Information (PSI) Directive (2003/98/EC). The PSI Directive entered into force in 2003 and was supposed to be implemented in 2005. Its main aim was to enable economic re-use of public sector information.[2] Poland was relatively late in the implementation of the PSI Directive and at some point even faced legal proceedings at the European Court of Justice (as did Italy and Sweden; see European Commission, 2008; 2009). In 2011, the national Law on Access to Public Information, which had existed since 2001, was amended to comply with the PSI Directive. The amendments lay out provisions for the re-use of public sector information and make specific mention of a central repository to facilitate public re-use of government-held data.[3] The amended law was further detailed by two decrees in 2014 – one issued by the Council of Ministers (No. 361, 20 March), and the other issued by the Minister of Administration and Digitisation (No. 491, 16 April). The former sets general standards about the forms and formats in which data should be made public via a central repository; the latter explicitly defines a Central Repository for Public Information (*Centralne Repozytorium Informacji Publicznej*, CRIP) as the state's web-based platform to publish data, and it explicitly lists the institutions and datasets that have to be made available on that portal.

The next step for Poland is now to transpose the revisions made to the EU's PSI Directive in 2013 into national law. The new Directive includes more detailed provisions on the publication of specific datasets as well as references to specific formats, i.e. mandating the use of more open and machine-readable formats for better re-use. The revisions need to be implemented in 2015.

Finally, civil society has been another driving force behind open government data in Poland – although not to the same extent as in some other OECD countries, especially France, the United Kingdom or the United States. Polish non-governmental organisations (NGOs) and advocacy groups have been very vocal in issuing demands for greater transparency of the public sector, including through demands for stronger commitment to implementation of the PSI Directive (cf. DIP, 2013). Moreover, the national "Open Government Coalition" unites several NGOs in the aim of pressuring Poland to apply for membership in the Open Government Partnership. The coalition sees access to public sector information and availability of open government data as critical elements in making the administration more transparent and accessible (Batory Foundation, 2014).

A number of NGOs already use and re-use data from the public sector and other sources to raise public awareness about issues of public interest. There is, for example, analysis of invalid votes cast in national elections carried out by MojaPolis[4] or the ePaństwo Foundation's "_mojePaństwo" suite of web services to access information on public sector activities.[5] MojaPolis also provides visualisations of public sector data that are on par with visualisations by NGOs in other countries.[6] Overall, however, these efforts remain very limited in their scope and impact – largely due to the difficulties NGOs continue to face in accessing relevant public sector data (see Chapter 3).

Civil society actors have been encouraged by some OGD dynamics at local levels of the Polish state administration. The city of Poznan started to generate interest in the re-use of its public data as early as 2011 when the city organised its first public data hackathon. Today, Poznan operates an open beta version of an application programming interface (API) for municipal data access.[7] The city of Katowice created a Medialab in 2012 to promote the use, re-use and exchange of data around municipal issues, with a focus on culture and urbanisation.[8] The capital city of Warsaw also experiments with hackathons, APIs, etc. to stimulate re-use of public sector data.[9]

At the face of it, civil society dynamics around OGD in Poland are not that different from those in other countries. But it must be noted that the examples mentioned so far are not necessarily representative of a wider trend. Major challenges remain regarding co-operation and mutual learning: one the one hand, large parts of the Polish administration, including most municipal governments, appear very reserved when it comes to fostering re-use of public data by NGOs or other outside actors; on the other hand, few NGOs seem to have the capacities and tools that would allow them to showcase the great benefits the public sector and society at large could obtain from granting more open access to government data (see Chapter 4). This results in an overall relatively rudimentary state of open government data, yet one with potential to make progress in the near future.

The current state of open government data in Poland

At the central government level, implementation of the EU's PSI Directive for the first time transformed political commitment to open government data into tangible action. The 2011 amendment of the Law on Access to Public Information outlines the conditions

for re-use of public sector data and foresees the establishment of an online central repository. The said repository was eventually launched in 2014 at https://danepubliczne.gov.pl, following a ministerial decree that explicitly lists each ministry and agency along with the datasets that institution has to provide on the national portal. The following institutions are the top providers, measured by the number of individual datasets available on the portal (in brackets, last accessed May 2015):

- Ministry of Science and Higher Education (24)
- Social Insurance (21)
- Ministry of Agriculture and Rural Development (17)
- Ministry of Infrastructure and Development (17)
- Ministry of Administration and Digitization (17)
- Ministry of Finance (16)
- Office of Electronic Communications (14)
- Ministry of Education (12)
- Ministry of Labour and Social Policy (12).

The list of institutions and datasets mandated by the decree were largely compiled on the basis of feasibility. Most of the datasets published on the CRIP had been publicly available before, e.g. on websites of the respective institution, although not all of them in open formats. Integrating those datasets into the CRIP in some instances meant improving accessibility, e.g. by switching from publication of PDFs to formats that can be automatically processed. While this effort of centrally compiling, publishing and improving some datasets is generally recognised as an important first step by Polish data re-use communities, it is also clear that it falls short of expectations – not just those of civil society but also those the government set itself, e.g. to make data available that is conducive to innovation and growth.

A major point of criticism over the current portal is the lack of data that is both relevant and easy to re-use. Content selection is further discussed below and in Chapters 3 and 4. Ease of re-use, however, is more of a technical issue that largely revolves around formats: while some data are available in structured and machine-readable formats (CSVs or proprietary formats like Excel files), others are only available as PDF, Word documents or other formats that are hard to process in an automated way.

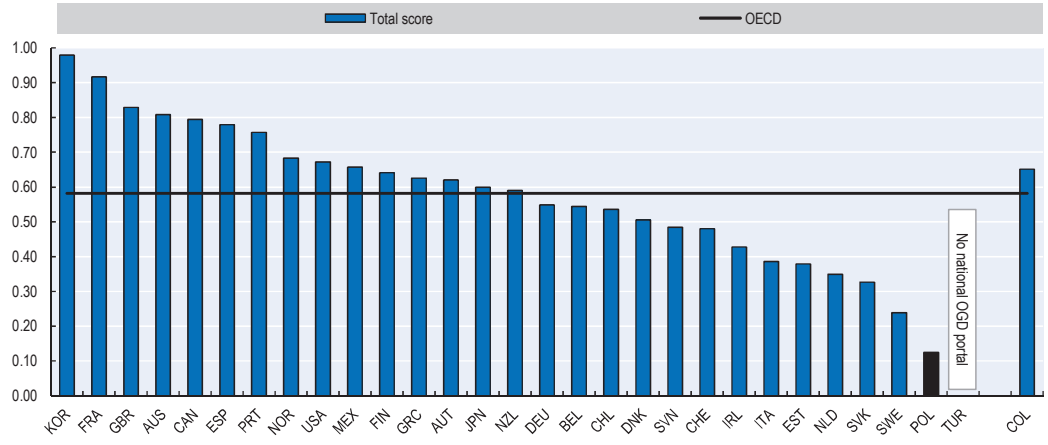
The CRIP underwent a major update in May 2015, which addressed some issues regarding ease of data re-use. The public API was improved to allow more direct automated access to datasets, e.g. from within third-party web applications. More metadata has been made available, e.g. on the frequencies of publication, formats and relationships of different datasets. Possibilities for user interaction were added or improved, e.g. users can provide ratings of the quality of datasets and they can suggest new datasets for publication. While those are important developments, the CRIP's impact on government data re-use will remain limited by the availability of machine-readable data (i.e. not PDFs) and of course the nature of the actual data.

More than a matter of form, the limited re-use today is a matter of content. In its current state the Polish national OGD portal ranks rather low in OECD comparison, to a large degree because some of the datasets governments internationally consider useful are

not available (Figure 1.2). The Polish administration was a late mover on OGD, so there are reasons to believe it will in the near future be able to benefit from lessons learnt both nationally (including at local levels) and internationally in order to drive supply and demand for open government data. This will require sustained political commitment. But generating coherent government action and stimulating demand does not happen by decree alone; it will require genuine work within government to open up (see Chapter 2) and dedicated resources to stakeholder engagement (see Chapter 3).

Figure 1.2. **OECD *OURdata* Index: Open, Useful, Re-Usable Data (2014)**

Composite index from 0 (lowest) to 1 (highest)



Source: OECD (2015b), *Government at a Glance 2015*, OECD Publishing, Paris, http://dx.doi.org/10.1787/gov_glance-2015-en.

Greater progress on OGD will benefit from integrating existing good practices in Poland, e.g. at sub-national level where some front-runners exist. These include the previously mentioned cities of Poznan, Katowice and Warsaw. But cities like Gdansk and Szczecin also see increasing value in opening up their datasets for public re-use. Most importantly they illustrate how the public sector can interact with NGOs, businesses and other partners to drive demand and promote re-use of public sector data.

The challenge of sustaining commitment to open government data

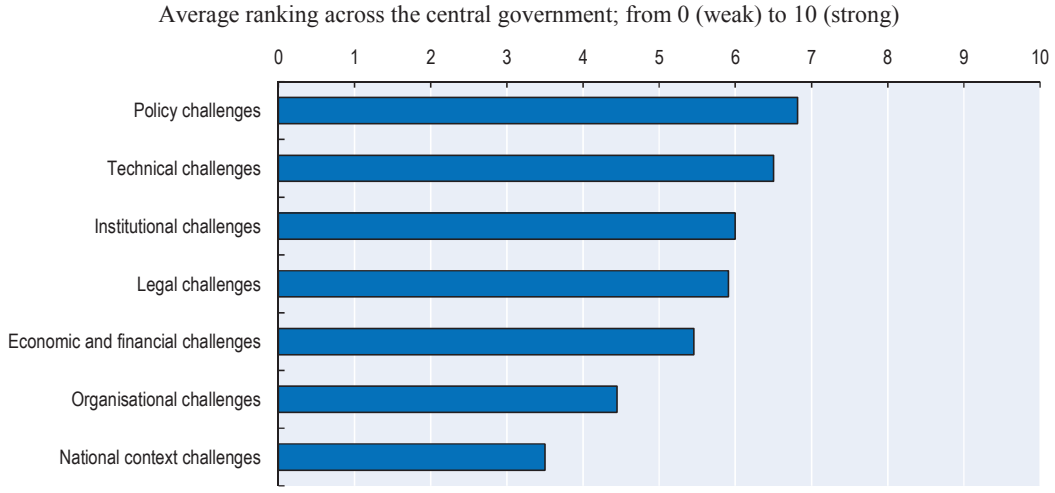
In terms of strategic directions, three major issues stand in the immediate way of reaping greater benefits from OGD in Poland: 1) a palpable reduction of political support and leadership for OGD at the central government; 2) lack of commitment and coherence across the public administration; 3) a focus that is heavily tilted towards supply-side measures and thereby misses out on the importance of measures to stimulate the demand and re-use of open government data.

Since 2011, the national government has taken some steps on its OGD agenda. Many OECD governments started in a similar fashion, by building a portal, posting some datasets and improving gradually from there on. Leading OECD countries have scaled initial dynamics and almost across the board strengthened political commitment to open government data. In Poland, however, there is a strong impression that political commitment towards OGD has somewhat declined in the more recent past. While projects and initiatives continue, the political leadership at ministries does not seem to

consider the value of public sector data as a means to create a more open government and to create new economic opportunities. Some new impetus can be expected from transposal of the revised EU PSI Directive into national legislation, which should occur in 2015. It is evident though that the Directive only sets minimum standards for release of public sector information and that leading European countries in the area of open government data – France, the United Kingdom and Spain – markedly surpass those standards.

Thus, there is a need in Poland to move from compliance orientation towards a whole-of-government commitment to the OGD agenda. The greatest barriers perceived by individual ministries and agencies are policy challenges – just ahead of technical challenges – which points to the need for persuasion and leadership in overcoming those challenges (Figure 1.3). Addressing policy challenges requires articulating more clearly the broader vision for OGD, the ways in which OGD relates to the needs and priorities of individual ministries and agencies. Only then will there be true commitment by ministers and senior government officials to embed the central government's OGD agenda into their own institutions' agendas.

Figure 1.3. **A hierarchy of challenges perceived across the Polish central government, 2014**



Note: Based on responses to the question "From your institution's point of view how important are the following challenges for opening up data held by your institution?"

Source: OECD (2014), "OECD Survey on Open Government Data in Poland". Survey administered across the Polish public administration in 2014 as part of this review.

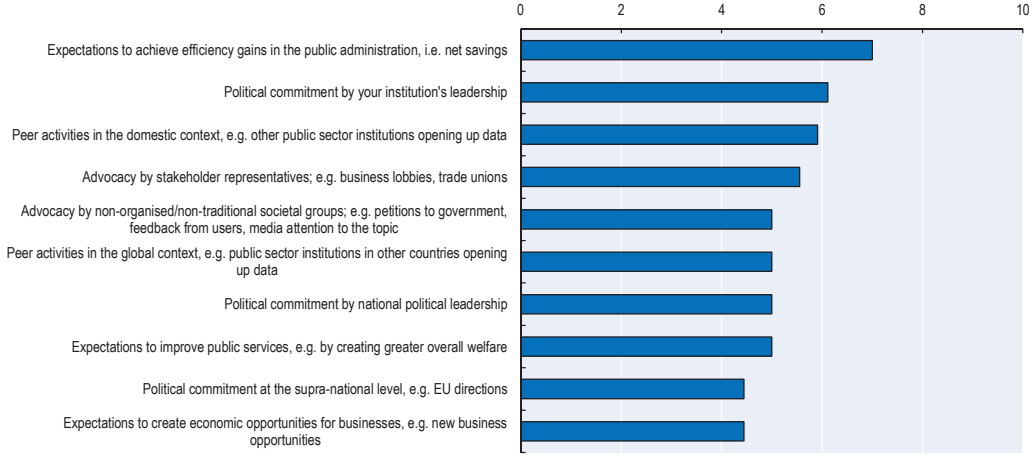
Bolder leadership will have to become part of the persuasion effort. A visionary, and probably charismatic, leader with political backing is needed to generate wider buy-in across government. Indeed, several OECD countries have chosen charismatic and experienced technology leaders with private sector experience to lead or at least support the cultural change needed to open up government datasets more proactively, e.g. France or the United States. This includes recent nominations of chief data officers with very ambitious mandates (see Chapter 2).

The common vision and buy-in will come as expectations and perceptions of OGD are increasingly synchronised across the administration. At the moment there are some disparities between ambitions laid out in the act and decrees, as well as in strategy

documents developed by the MAC (e.g. the Efficient State Strategy), which clearly accentuate the aims of stimulating re-use of public sector data for greater openness and for the creation of socio-economic benefits; and large parts of the administration that do not seem to share this vision, but are rather driven by expectations for savings (e.g. to reduce the time spent on answering requests to access public information), by leadership commitment or by peer pressure (Figure 1.4). Only few institutions prioritise re-use and value creation, i.e. believe their data can improve the quality of public services or stimulate economic activity (Figure 1.4).

Figure 1.4. **Perceived importance of driving factors for open government data by central government institutions**

Average ranking; from 0 (weak) to 10 (strong)



Note: Based on responses to the question "From your institution's point of view how strong are the following individual driving factors for opening up data held by your institution?"

Source: OECD (2014), "OECD Survey on Open Government Data in Poland". Survey administered across the Polish public administration in 2014 as part of this review.

Considering this situation, it seems important to create and promote "champions" of open data across the administration. Good examples of sharing public sector data and using data to improve the quality of public services do exist in Poland. The Head Office of Geodesy and Cartography (GUGiK) has, similar to practices in other countries, opened up access to a number of its cartographic services and data. Individual ministries, e.g. healthcare, have built strong internal expertise in using data to support formulation and implementation of policies. The national tax administration uses its data sources intensively to identify tax irregularities such as errors and fraud. Finally, the national statistical office has been a long-time producer and provider of statistical data in a variety of policy areas – their experiences in engaging communities of re-users can be further leveraged. Engaging these institutions in a dialogue with other ministries could lead to partnerships and exchanges of practices that advance the open government agenda.

What is largely missing is greater visibility of such cases of purposeful re-use of public sector data, both within and beyond the administration. Greater visibility leads to better understanding of potential benefits. This would, in turn, encourage institutions to make useful datasets available for public re-use in a more proactive and accessible manner.

An area with great re-use potential is the national police. It holds many interesting and important datasets that relate to issues people care about, e.g. crime rates, road accidents, public safety.[10] It is planned to publish some police data via the CRIP in the near future in re-usable format (i.e. Excel sheet or CSV). So far, however, raw data can only be obtained in cumbersome ways, e.g. by scraping the police website, downloading PDFs or issuing requests for access to public information. Even the quite informative aggregate data on daily incidents is only provided as a web-based table, without an easy or automated way to access more detailed information in a machine-readable way that third parties could re-use.[11]

Proactive data publication by law enforcement agencies in other countries provides examples of very useful and compelling cases for re-use. Data from the French Ministry of Interior was, for example, used by a national newspaper to map all accidents across the country with detailed information on the type of accident, material damage, injured people, fatalities.[12] This re-use generated a more informed and very profound public debate about the state of road traffic accidents, and about the trends, patterns and reasons behind the data.

Some of the challenges in identifying and spreading good practices across the Polish administration are linked to the wider challenge of coherent digitisation. The 2013 OECD *Public Governance Review of Poland* found that ministries continue to largely develop technology applications within their own domain and with little effective co-ordination taking place (OECD, 2013). Interoperability between government information systems is, for example, not very advanced, which hinders more proactive opening up of public sector datasets – but it also keeps the public sector from making better use of data as an input to decision and policy making. There are different reasons for that – technical, legal and historical – but most of all it is a matter of making co-ordinated development of information systems a political priority. Even a country like Finland, which has been a long-standing leader in digital government, is today feeling the negative impacts on government agility from a structural lack of interoperability across government information systems (OECD, 2015a).

Co-ordinated governance is all the more important as the Polish government will disburse millions of euros on OGD via the Digital Poland Operational Programme (OP). In allocating those funds, the public administration of course complies with needs on selection, reporting and monitoring – e.g. by closely studying the business plans of individual projects. This alone will, however, not guarantee that the funds and projects will promote open government data re-use in ways that support national policy priorities, such as reducing corruption, stimulating small and medium-sized enterprises, improving the state of healthcare and education, fostering sustainable development. To its credit, the Polish government involved societal actors in the development of the Digital Poland OP. But it is not clear at this point if those same actors will also be involved in monitoring and evaluating the purpose orientation of public funds disbursed on OGD over the coming years.

Conclusion

The Polish government has undertaken a first set of important steps to promote the publication, access and re-use of government data. These steps include the transposal of the EU's PSI Directive into national legislation, establishment of laws and regulations that determine specific datasets to be opened up and the conditions applied, and creation of a national OGD portal – the CRIP.

Nevertheless, this chapter also shows that a sequential and supply-oriented approach to OGD still predominates in Poland. The ministerial decree which led to the establishment of the national portal and the selection of datasets was largely developed by the administration alone, with little involvement from non-government re-users around the design or content of initial versions of the portal (e.g. consultation on datasets to be published). Although a public consultation process was put in place, little feedback was received – which points to a lot of room for government to pursue a more iterative approach of mutual learning on priorities and challenges.

OECD country experiences show that stimulating demand for open government data is a complex undertaking that involves co-operation, iterations, trial and error. The Polish administration is generally quite aware of this – the Polish National Development Plan 2020 in that respect explicitly states the need by government to move from "administering funds to managing actual development". It is important that this approach also becomes determinant for the OGD agenda through more effective leadership and governance (see Chapter 2), stronger commitment to community engagement (see Chapter 3) and greater focus on value-creating activities in this area (see Chapter 4).

Notes

1. Information on the Board of Strategic Advisors can be found on its outdated website: http://zds.kprm.gov.pl/en/poland-2030-report (last accessed 23 March 2015).
2. See: http://ec.europa.eu/digital-agenda/en/european-legislation-reuse-public-sector-information (last accessed 23 March 2015).
3. More on Poland's implementation of the first PSI Directive is available at: https://ec.europa.eu/digital-agenda/en/news/implementation-psi-directive-poland (last accessed 23 March 2015).
4. www.mojapolis.pl/pointers/map/1697.
5. http://mojepanstwo.pl.
6. See, for example, www.mojapolis.pl/media/medialibrary/2014/06/mojapolis_5.mp4.
7. www.poznan.pl/api.
8. http://medialabkatowice.eu/en.
9. See: http://api.um.warszawa.pl.
10. See: http://statystyka.policja.pl.
11. www.policja.pl/pol/form/1,dok.html.
12. See: http://rue89.nouvelobs.com/2014/06/25/carte-presque-tous-les-accidents-route-2012-253113.

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OECD (2013), *Poland: Implementing Strategic-State Capability*, OECD Public Governance Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264201811-en.

Chapter 2.

Establishing effective governance for Poland's national open government data strategy

This chapter examines the governance framework and institutional arrangements supporting open government data (OGD) implementation and the current capacity to steer strategy setting and implementation effectively in Poland. It emphasises the importance to create a collective commitment to the OGD agenda across the public sector and around common objectives. This requires a shift of organisational cultures that can only happen if individual institutions share a common vision and co-ordinate as partners for a common agenda instead of feeling obliged to fulfil a legal obligation.

Introduction

As open government data (OGD) programmes and policies continue to expand, the supporting governance frameworks are becoming more complex and sophisticated. An adequate governance framework underpins the impact of OGD initiatives. It is indeed essential to ensure co-ordination among institutions within and across levels of government, and beyond national frontiers, as well as to foster interactions among the different actors of the OGD ecosystem.

Given the complexity and cross-cutting nature of public sector data, governments need to establish the appropriate governance framework and institutional structures. Tasking a government body – often the centre of government (e.g. the Prime Minister's Office) – with championing, co-ordinating and providing support for and leadership of OGD initiatives and programmes has been seen as a way to bring the various stakeholders on board. The person chosen to lead such an institution also plays a key role in creating the new mind-set required across the administration.

In the OGD realm, the distinctions between professional, politician, practitioner, civil servant, expert, consumer and citizen are blurring dramatically. These roles are still important but the relationships between them are changing, and any individual may play several roles at the same time. In relation to government, this means that many stakeholders can and are becoming involved in areas of competence that were previously the preserve of the public sector or of specific agencies alone. Instead of always being the sole actor, the public sector is increasingly becoming just one player in a new form of open-source governance in which it may often only play the role of arbiter, co-ordinator, funder and regulator for the activities of others in delivering public value through the use of public sector information and data (Ubaldi, 2013).

As a result, the changing landscape requires a governance framework that:

- supports the adoption and execution of an overall vision aligning different actions and sector initiatives to common strategic objectives
- enables the required changes in the legal and regulatory environment
- creates the proper infrastructure which allows access, sharing and re-use of data
- increases the value of data as public good (e.g. fosters understanding of users' demand to increase the availability and accessibility of high-value datasets)
- spurs value creation and impact (e.g. sustains institutional co-ordination and public engagement to increase re-use)
- ensures stability and continuity
- secures the co-operation of public administration officials to publish data regularly and to integrate open data in their corporate strategy
- promotes a country on the international level
- gains the necessary intellectual/human resources and financial resources
- ensures broad communication of efforts and results.

General trends across OECD countries go in the direction of establishing clearer governance frameworks with the objective to clarify responsibilities, capture actors' interests and respond to their demands (e.g. through the establishment of advisory

groups); facilitate data availability, accessibility and re-use; and finally to ensure the right level of visionary leadership and institutional co-ordination.

This chapter reviews the governance framework and institutional arrangements supporting OGD implementation in Poland and makes reference to practices and examples from OECD countries.

Governance framework models

Data governance involves understanding and advising on the appropriate data governance and personal data management policies which departments should implement, advancing policies that ensure data is consistently and properly handled across services, improving data security and efficiency through minimising the amount of "rework" needed across government. Despite all the good initiatives underway to improve government's use of data, many countries have lacked the central co-ordination needed to move the data agenda forward. Much of the work so far has been delivered as distinct projects, and there is a general need to align efforts so that organisations are as effective as possible in using public data for the benefit of citizens and businesses.

A common vision for OGD should clarify common goals and expected results – for instance in terms of increased efficiency, higher transparency, improved quality of public services. The vision could also embed main milestones and propose indicators to measure progress. Having such a vision would help gear efforts towards shared objectives, set expected benefits, monitor achievements at the institutional level and exploit potential synergies.

Poland

The Polish government's ambitions and strategy on open government data are the result of at least three concurrent dynamics over the past years: 1) political vision and leadership from the top of the Polish administration; 2) opportunities and pressure arising from EU-related policy developments; 3) advocacy by civil society, encouraged by positive advances of a few local government authorities opening up their datasets for public re-use.

The Polish vision is manifested in the national "Efficient State Strategy" of 2012 (*Strategia Sprawne Panstwo*), which is part of the national long-term development strategy 2030. Additionally, the National Integrated Informatisation Programme includes goals concerning the exploitation of public sector information (see Chapter 1 for more information).

The political vision has been further supported by the creation of the Ministry of Administration and Digitisation (MAC) as the steward of digital government transformation and main co-ordinator of open government and OGD agendas. The leadership of the first Minister for Administration and Digitisation was instrumental in driving the wider open government agenda through digitisation. Whereas there was notable political commitment to the OGD agenda over a period of time, it seems to have ebbed in the more recent past. The ministry's current efforts are indeed much more geared towards the implementation of the European Union's revised Public Sector Information (PSI) Directive to be completed by 2015 which includes also the update of the Central Repository of Public Information launched in May 2015. This leaves a vacuum of political efforts and leadership that are still necessary in Poland to advance an agenda whose objectives are not yet shared or understood by large parts of the administration.

In fact, the OGD agenda in Poland today is mainly driven by legal compliance, rather than actual needs of the administration, the society or the economy. This means that a relatively wide gap still exists between the ambitions for open government data articulated in strategic national and EU policy documents and the realities in the Polish public administration. The Central Repository for Public Information (CRIP) portal, for example, fulfils all legal requirements that are foreseen by national laws, but it falls short of expectations by civil society actors, and it is not currently utilised to stimulate participation and foster co-ordination across the public sector.

There is a lack of more proactive and bold attitudes towards OGD in large parts of the administration. In Poland it seems that large parts of the administration do not have a clear understanding of the potential of OGD. Individual institutions at the national level do not prioritise re-use and value creation, but are rather driven by expectations for savings (e.g. to reduce the time spent on answering requests to access public information), by leadership commitment or by peer pressure.

Even though some formal co-ordination does take place, there is still a major issue for co-ordinating the political mandate for driving OGD of the MAC and the actual monetary allocation function for EU Structural Funds for OGD disbursed by Ministry of Infrastructure and Development.

There are few individual institutions that recognise the added value of opening up data for public re-use and that have a strong track record of using empirical evidence to craft policy proposals. This includes individual ministries, e.g. Ministry of Economy or Ministry of Health, as well as specialised agencies, such as the Central Statistical Office. Overall these institutions still constitute a minority within a public administration that is only hesitantly opening up government data, fostering re-use by non-government communities and using OGD as a tool to improve the quality of public policies and services. The relatively low recognition of the importance of data is illustrated by the fact that just around one-third of public sector institutions have a strategy or policy to make better use of data.

These challenges must be read alongside the wider context of digital government in Poland, where individual institutions tend to act in silos and therefore display very heterogeneous levels of digitisation (see OECD, 2013). In such a context, the effectiveness of another layer of formal co-ordination mechanisms cannot be ascertained, unless they are accompanied by either executive powers to enforce implementation or by strong persuasive elements that lead to more organic buy-in of individual ministries.

A commonly shared ambition towards opening up public sector data would incite individual institutions to share data more openly amongst each other, to use data when crafting policies and to co-operate with external actors. This does, however, require more than a legal framework and compliant institutions. It requires a shift of organisational cultures that can only happen if individual institutions are part of the agenda instead of feeling obliged to fulfil a mandate.

Given this context, the Polish government should focus on creating collective commitment to the OGD agenda across the public sector and around common objectives. This implies moving away from a context in which commitment is primarily built on compliance to laws and decrees. It calls for a more persuasive vision, which clearly articulates the expected benefits – not necessarily in terms of numbers, but also in terms of illustrative examples. OECD governments have, for instance, adopted open data policies (e.g. Mexico, the Netherlands) and/or common open data action plans

(e.g. Canada, Germany) inclusive of objectives, milestones and criteria for monitoring progress. Constructive leadership and effective governance models are necessary to persuade senior leaders of individual ministries and agencies of the importance of data for their activities. This can include formal mechanisms as well as informal networks to promote good practices, raise the visibility of front runners (including at sub-national levels of government) and identify common barriers.

More effective implementation depends on whether the Polish administration can make the shift towards more proactive release of data by the public sector. This will not happen through compliance with laws alone. Implementation actions should therefore focus on clarifying user needs and public administration objectives to drive data release.

Strengthening the governance of OGD to clarify responsibilities, ensure top political level and leadership support, and facilitate co-ordination across the administration is an important policy option. Finally, a captivating vision cannot be shaped exclusively around foreign examples. This is why the Polish government should consider promoting domestic champions. The Department of Analysis and Strategy within the Ministry of Health provides a good example of an actor within the administration that could play a key role as champion/partner to support the creation of a common vision and agenda for OGD across the administration.

These institutions, along with the re-users of their data, can be leveraged to make wider parts of the administration understand the benefits of and surmount challenges in opening up government data. This can, for example, be achieved through awards and other means to raise visibility.

Governance frameworks and leadership in OECD countries

In order to ensure the right level of political support and engagement several OECD countries have located OGD co-ordination functions within the centre of government (e.g. France, Mexico, the United Kingdom, the United States). Others with the responsibilities at line ministry level have ensured support from their top political level (e.g. Denmark, New Zealand).

The governance structure for OGD in **France** includes the Etalab established in 2011, and which is since 2012 under the Prime Minister's Office within the General Secretariat-for the Modernisation of Public Action (Secrétariat general pour la modernisation de l'action publique, SGMAP). Openness and data are considered by France two critical levers of the public sector modernisation agenda, and of its digital transformation. In alignment with this approach, Etalab has a mandate covering open government and data science in order to integrate open government, OGD and a data-driven public sector agenda. Etalab was initially created in 2011, with the mission of co-ordinating and implementing the national open data policy. In 2013, Etalab launched a new version of the www.data.gouv.fr platform, which was the first government platform opened to contribution by all citizens (see Chapter 3 for more information on how to better use open government data portals). By doing so, by interacting with all government agencies, with innovators and civil society representatives, by entering into a dialogue around data, it naturally opened up to the larger "open government" agenda, which covers transparency, participation and collaboration.

Additionally, following the example of an increasing number of companies and big cities, with the adoption of the Prime Minister's official Decree no. 2014-1050 on

16 September 2014,[1] the French government created the position of chief data officer (CDO or in French, *administrateur général des données*, AGD) at the national level. The CDO works under the authority of the Prime Minister, as part of the SGMAP. She/he is in charge of working on the accessibility and interoperability of data, of ushering government into data-driven strategies, and of disseminating the culture of data and data sciences with the administration. This governance and institutional framework is a critical enabler of the French OGD core strategy where all elements are seen as connected and data is conceived as a cornerstone of governments' digital transformation.

Similarly to France, the **United States** has set a vision (embodied in a policy), created the conditions (e.g. adoption of an executive order) and established a governance framework to support the execution. The Open Data Executive Order signed by President Obama in May 2013[2] is accompanied by the Open Data Policy released by the Office of Management and Budget and the Office of Science and Technology Policy that implements the order. They require that, going forward, newly generated government data shall be made freely available in open, machine-readable formats, while appropriately safeguarding privacy, confidentiality and security. This requirement is expected to help the federal government achieve the goal of making previously inaccessible or unmanageable data easily available to entrepreneurs, innovators, researchers and others who can use those data to generate new products and services, build businesses and create jobs. These actions have been important manifestations of the leadership and of the Obama administration's long-standing commitment to releasing and leveraging data in support of enhanced transparency and accountability, improved government services and a stronger economy. They build on actions such as the Open Government Directive, the Digital Government Strategy and the Open Data Initiatives project, which is bringing the benefits of open data to a wide range of domains including health, energy, education, public safety, finance and global development.

The US government has also established a governance framework to ensure implementation leading to results and impact. The United States' OGD governance framework includes the following responsibilities:

- The Policy Team under the Chief Information Officer is responsible for OGD policy and oversight.
- The Office of Science and Technology Policy has the responsibility to build on President Obama's Executive Order on Open Data and foster open data across government, through a number of open data initiatives aimed at scaling up open data efforts across the health, energy, education, finance, public safety and global development sectors. A chief data scientist has been named recently and is under the OSTP..
- The team responsible for data.gov at the US General Services Administration is responsible for data distribution, for helping agencies in opening up data, for running and populating the portal and focusing on value creation. It also works with the states and academic institutions.

There are examples across OECD countries where the governance framework is not as structured as in the cases previously described in this chapter. Stand-alone organisational set up mandated with the responsibility to define and co-ordinate the implementation of the OGD agenda was not created. The OGD is part of the same department responsible for open government. This is the case of the **Netherlands**, for instance, where the development of the OGD agenda and the co-ordination of its

implementation are under the responsibility of the Citizenship and Information Management Unit within the Ministry of the Interior and Kingdom Relations, which also has the responsibility for open government, digital government, participation, etc. Another relevant example is **Denmark**, where OGD is under the responsibility of the Agency for Digitisation within the Ministry of Finance, which is responsible for the definition and co-ordination of the implementation of the overall public sector digitisation strategy.

In other cases like in **New Zealand**, the approach for OGD co-ordination is built around the idea of alignment and dispersed responsibilities. A very small New Zealand Open Government Information and Data Secretariat was created within an existing department. It leads programme of guidance and advice to assist government agencies to adopt the open data policy. The Open Government Information and Data Secretariat is hosted at Land Information New Zealand, and works with government agencies across the New Zealand state sector. It has been strongly supported by the top political leadership.

The OGD programme in New Zealand is governed by the Open Government Data Chief Executives Governance Group which sets the programme's strategic direction and monitors its progress. It is overseen by the Open Government Data Steering Group whose members are executive managers from government departments holding key public datasets that the public wishes to re-use.

Each government department has selected a member of its executive management team to act as its data champion and drive adoption of the open data policy within its department and report on its progress annually to the Secretariat. These data champions meet six times a month with the Secretariat to discuss progress and any issues they are encountering.

The Secretariat has prepared extensive advice to assist agencies as they implement the three key open data policies approved by Cabinet: New Zealand Government Open Access and Licensing framework (NZGOAL), 2010; Declaration on Open and Transparent Government, 2011; and the New Zealand Data and Information Management Principles, 2011.

The emerging role of the chief data officer

Many OECD countries are establishing a chief data officer/scientist position at the central government level. As this phenomenon becomes more widespread, the question that remains to be addressed concerns to what extent the CDO position overlaps or complements that of the chief information officer (CIO). Normally, the role of the CIO is to manage the public sector's (or an agency's) use of technology to fulfil its mission. From this perspective there is almost always an overlap between data and technology, because technology is used to produce, store and transmit data. In other ways, it is different. The CIO should be data-informed, but modern CIOs responsible for designing and co-ordinating the implementation of Digital Government Strategies[3] are tasked with a mandate that is broader within an organisation than gathering, managing, publishing or analysing data. At the level of national government and agencies, CIOs are juggling multiple responsibilities beyond data warehousing, from security to data centres.

Inside or outside of the public sector, the CDO can also help other executives and managers by bridging internal silos. In this sense the CDO performs an interface role complementary to the CIO and the CTO by helping organisations capitalise on data.

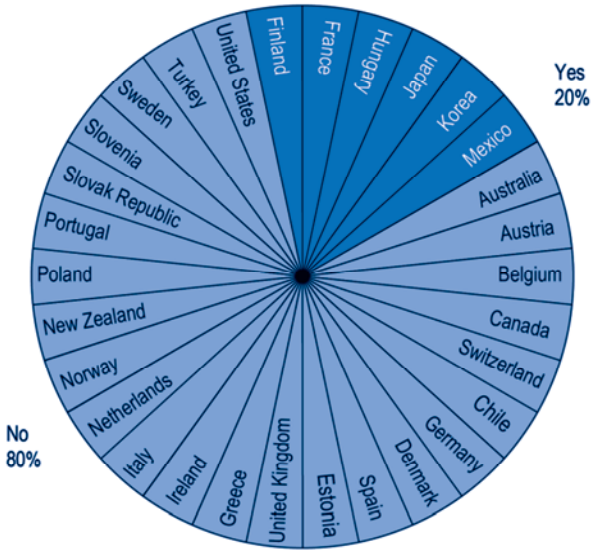
There is some potential overlap in responsibilities for creating data infrastructure and applying data science that need to be defined, depending on the organisational structure, skills and experience of the different officers. CDOs are shaping one of the newest roles in governance to fit the needs of their organisations.

Chief data officer: For a visionary and compelling leadership/managing data as a strategic asset

The chief data officer (CDO) plays the crucial role of a visionary and compelling leader. The rise of CDOs in the 21st century reflects the central role that data now plays in every facet of society. CDOs are entrusted not just with managing information but going one layer deeper in the knowledge generation and management process to raw data creation, collection, storage, sharing and analysis.[4]

In an increasing number of organisations, a CDO's position is established with the expectation that he/she collaborates with the CIO tasked with managing the digital government strategies and IT infrastructure at a government agency so as to ensure that data are available for organisational needs and to support strategic decisions.

Figure 2.1. **Existence of a chief data officer**



Source: 2014 OECD Survey on Open Government Data.

In the public sector, CDOs are making data a public asset, releasing data for job creation, applying data to policy formulation and using predictive analytics to spot trends. The first chief data scientist in the United States is focusing on precision medicine, data products and ethics. The establishment of the CDS/CDO position within the Chief Technology Officer's office at the Office of Management and Budget in line with the emergence of chief data officers at major agencies and departments within the federal government appears as a sign of intention to continue to execute on President Obama's open data vision and his 2013 Executive Order.

The CDO is expected to add value, not to create new processes or bureaucratic hurdles and layers. Charged with helping agencies to improve organisational arrangements in order to better manage data as a strategic asset, they also play a key role

as "chief evangelists" for the agency's data increasing the feedback loops about where to focus agency data liberation efforts. Ultimately, the CDO is expected to make a measurable difference upon how an institution creates, stores, manages, uses and shares data – with a number of users inside and outside of government. The specific role of the CDO is determined by the overall OGD policy, but the primary function should be to organise and manage an organisation's use of data to fulfil its mission (i.e. to connect data to the organisation's mission).

Making it easier to find and use valuable government data to advance the public good, spur economic growth and improve good governance is the core essence of the CDO's mandate. Much of the work that people who are pioneering CDO positions in big bureaucracies do remains necessarily "remedial" in the sense that it focuses on where data is, what contracts govern it, how it can be used, what standards it's getting it out of legacy IT systems, etc. At the cutting edge are CDOs who inform policy and drive insights. Their mandate is not only to improve the cleaning and releasing of data for public use but to capture data insights in order to deliver improvements to performance and apply analytics to support governance, policy making and regulatory actions. **France**, the **United Kingdom** and the **United States** all provide excellent examples of this approach. It is nevertheless important to underline that as governments face the same sets of requirements around data, there are no requirements for a specific role of a CDO.

Box 2.1. **The role of chief data officer in selected OECD countries**

France

The state CDO will contribute to the quality of the data produced by the state, will facilitate its circulation among administrations, researchers, companies and citizens, and will be implicated in the creation of essential data. Furthermore, he/she will be in charge of stimulating the dissemination of new data-based decision methods within the administration: Big Data approaches, optimised allocation of public resources.

More specifically, the CDO is in charge of the co-ordination of administrative actions, with respect to inventories, governance, production, circulation and exploitation of data by administrations. He/she is also in charge of organising its circulation, while respecting the protection of privacy and secrets as defined by the law. Finally, he/she shall propose to the Prime Minister official guidelines for international negotiations concerning data policies.

The CDO may request that administrations provide an inventory of the data they produce, receive or collect. He/she shall produce an annual report for the Prime Minister on the inventory, governance, production, dissemination and use of data by administrations. Finally, he/she is authorised to conduct experimentations on the use of data, to reinforce the efficiency of public policies, to contribute to a better management of public spending and resources, and to improve the quality of public services provided to citizens.

United Kingdom

Following the launch of a set of principles designed to improve transparency in government contracts, the UK government appointed in March 2015 its first chief data officer. The set of principles lay out requirements for the release of information pertaining to dealings between government and its suppliers. They underpin the government's commitment to transparency across all departments, enabling taxpayers to see how their money is being spent. It is hoped that this transparency will, in turn, encourage more accountability in public sector spending and performance. Transparency is at the heart of the government's long-term economic plan and the intention is to secure that open data helps sharpen accountability, support economic growth and inform choice over public services.

Box 2.1. **The role of chief data officer in selected OECD countries** (*cont.*)

The potential rewards expected by the UK government are considerable in terms of smarter, more responsive and more cost-effective public services. Hence, with this move the UK government aims to more closely link the transparency and openness agenda with public sector performance.

The CDO will be held alongside the position as head of the Government Digital Service at the Cabinet Office. The idea is that the CDO will continue to spearhead the government's digital revolution by taking the United Kingdom's world-leading approach to open data even further, while strengthening data analysis skills in the UK civil service. The CDO is expected to champion the government's approach to open data access and use, and the use of data to better inform decisions across the public sector. In his role, the CDO will need to strike a balance between open data and inspiring confidence in the general public in how government uses their data.

The state CDO is responsible for:

- transforming the management and use of data within government, by setting standards and principles and opening up data flows across government (i.e. overseeing the definition and enforcement of a new government data standard)
- championing open data, and opening up existing government data wherever possible
- driving the use of data as a tool for taking decisions in government.

United States

In February 2015, the White House named the first Deputy Chief Technology Officer for Data Policy and Chief Data Scientist (CDS) in the Office of Science and Technology Policy. The CDS will:

- help shape policies and practices to help the United States remain a leader in technology and innovation
- foster partnerships to help responsibly maximise the nation's return on its investment in data
- help to recruit and retain the best minds in data science to join it in serving the public
- provide data science leadership on the administration's momentum on open data and data science.

The CDS is also expected to work on the administration's Precision Medicine Initiative, which focuses on utilising advances in data and healthcare to provide clinicians with new tools, knowledge and therapies to select which treatments will work best for which patients, while protecting patients' privacy. As part of the Chief Technology Officer's team, the CDS works with colleagues across government, including the Chief Information Officer and US Digital Service.

Sources: www.etalab.gouv.fr/the-government-creates-and-shapes-the-role-of-its-chief-data-officer-cdo; www.whitehouse.gov/blog/2015/02/18/white-house-names-dr-dj-patil-first-us-chief-data-scientist; http://www.cio.co.uk/news/data-management/mike-bracken-made-government-chief-data-officer-3605381/

Governing is advocating for policies and processes that support information management, quality and stewardship. Engagement is connecting data producers with consumers to identify areas where they are doing well and where they can improve,

celebrating successes through events like datapaloozas, and engaging around difficult problems through data jams and competitions. Enabling is diversifying the toolsets one has to acquire, store, process, analyse and apply data, and helping an agency more effectively accomplish its mission by extracting value from its data, other government data and other sources.

In government agencies, the organisational culture can have as much influence on how data is collected, shared and used as technology limitations. CDOs are responsible for pushing the organisational culture around data and data management and for ensuring the alignment of the data strategy to the business, and a data governance framework across an organisation.

Data officers also are responsible for ensuring that people inside of an organisation can find what they need. Improving internal information retrieval rates has frequently been cited as a primary return on investment for open data initiatives. According to the McKinsey Global Institute, government workers spend an average of 19% of their workdays looking for information. Additionally, a CDO must understand the different internal and external audiences for the data and provide them with the right formats and data products, and engage with the broader data community, including discussions about data sharing and open data.

The CDO should be responsible for or take a lead role in ensuring data security to ensure confidentiality and privacy, and ensuring that external stakeholders understand that the organisation is treating data responsibly. Additionally, the CDO should be able to count on enough statutory authority and political buy-in to set standards for data. This can be a powerful forcing function for interoperability inside and outside of government and a bulwark against vendor lock-in.

One can envisage a model where the CDO operates in three critically important areas:

1. open data
2. performance management, with standard key performance indicators and management by objectives, among others (e.g. a 311 service; what are the metrics it includes?)
3. advanced data analytics and predictive data analytics.

At the federal level, more CDOs at agencies are thinking about making data actionable internally, not just publishing it externally. The discussion around a "data-driven public sector" has grown beyond just having an open data focus to support central data management and governance operations. There is greater awareness for the need for the role and a maturity in thinking about the services, capabilities and value the role can bring to organisations (Goldstein, 2013). It seems that there is a lot of effort within open data but focusing on the three levels and informing policy at the core of the CDO's role inside of government is essential. Policy has a qualitative aspect, it has a public policy mindset, but there is a need to introduce quantitative rigour for both tactical and strategic decisions. Nevertheless, in reality, there are not that many models of the kind described above. The one set up by Brett Goldstein, the first CDO for the city of Chicago, can be regarded as a leading example in this sense.

Getting the right scope of responsibilities and authority aligned within an organisation's hierarchy is not easy. Additionally, prioritising, focusing and educating people are the most challenging parts of the job. There are many potential issues that can make this difficult: overlap in function with CIOs and CTOs as mentioned above, data

ownership in different parts of the organisation, a lack of collaboration to agree on standards across the organisation, too little authority over what happens with the data. Full backing from a high political level (centre of government) is key to driving change, particularly in the face of organisational culture.

Translating the analysis above into concrete actions that might fit into the Polish context means considering the need of a leader on open government data (e.g. a CDO) with strong political support (e.g. appointed by the Prime Minister and reporting to the Prime Minister), a mandate that combines the powers attributed to the MAC and Ministry of Infrastructure and Development (i.e. to be able to align the EU funding to OGD with the policy priorities formulated by the government). The profile should enable to break through bureaucratic culture and resistance (similar to the way France has managed to do, by persuasion, and by selecting directors for Etalab who so far have all come with experience in growing strong web businesses). What is certainly needed in Poland to secure the right level of leadership and support required to start and run an OGD programme is someone who can drive cultural change in administrative contexts where pushing for the "data-driven revolution" is difficult due to resistance and inertia and someone who can find partners to work with, to persuade by success, and not always and necessarily having to use the legal lever.

Box 2.2. **Chief data officer job profile**

In general, the chief data officer (CDO) should:

- Be involved in, and in many cases responsible for, any activities along the data value chain.
- Connect their work to governance, from delivering services to protecting the public or public interest.
- Focus on helping the organisation get more value and insight from the data it collects and on helping people accomplish their goals by aligning them with the process and technology components that are critical to the organisation's strategic goals.
- Be an evangelist for the increased use of data in many contexts (e.g. elevating the awareness and discussion internally regarding the importance of well-run data operations, supporting organisational culture change, and championing and evangelising a data-driven culture).
- Provide data governance and data management services to the organisation (e.g. spanning divisional silos, setting standards and policies in the process).
- Set standards for data internally, and externally, to ensure interoperability and so that users, suppliers and the whole ecosystem can understand them.
- Engage with developers and data users.

Approaches to co-ordination

There are several policy options available to push for advances in OGD implementation. Some countries opt for mandatory approaches built on strong levers (e.g. adoption of laws on proactive data disclosure) while others have chosen motivational approaches relying on soft levers (e.g. provide incentives through the establishment of business cases to showcase benefits).

In Poland, so far the development of the OGD agenda has been driven by a mandatory approach. Besides the relevance of the EU PSI Directive issued in 2003 (see Chapter 1), the government in 2011 amended the 2001 Law on Access to Public Information to comply with the directive; and issued further decrees to implement it. The late implementation gave the Polish government the opportunity to adjust implementation provisions to cater to new demands around open government data, e.g. by launching a dedicated portal for open government data (CRIP). Major opportunities and challenges arose with the implementation of the revised PSI Directive to be implemented in 2015. The Polish government should also utilise the process of implementation of the second EU PSI Directive to once again underline the importance of open government data as a vector for greater transparency, citizen engagement and new economic opportunities. Even in a highly legalistic context like the Polish administration, where legislative changes might still be needed to overcome restrictions for increasing data availability and openness, the Polish government should increasingly move from an approach based on mandatory compliance to one driven by OGD value recognition. Some of the examples below are meant to provide inspiration from countries that have adopted mixed approaches.

France provides an interesting example of a country that has adopted a soft approach to OGD built around the principles of collaboration (share, improve and re-use a common good). In order to create a common "buy-in" and to foster the re-use of OGD and involve stakeholders of the French innovation ecosystem both from within the administration and society at large, Etalab has been organising Dataconnexions since 2012. Initiatives like Dataconnexions Awards[5] aim to encourage the innovative re-use of data (see Chapter 3 for more information). Visibility and recognition of the best projects become important incentives for data re-users. Similarly, the new version of the portal www.data.gouv.fr was conceived on the idea that it should be a platform for engagement among actors of the OGD ecosystem. Hence, the government plays a role of moderator. Driven by the "data users' perspective", the platform ensures easy access to data and provision of data which can be uploaded by non-institutional actors as well. Additionally, it provides visibility for the data producers on a single "wall" on all the activities related to their dataset. The French approach has spurred collaboration that has resulted in innovative examples such as the collaborative and free French National Address Database ("*Base Adresse Nationale*", BAN) launched in April 2015. The BAN is the product of an innovative collaboration model between public authorities (Etalab, a mission of the General Secretariat for the Modernization of Public Action – SGMAP), public actors (the National Institute of Geographic Information and Forest [IGN] and La Poste Group) and civil society (OpenStreetMap France Association) to build an essential reference for the economy, society and public services.

Some other countries, like the **Netherlands**, have adopted a mixed approach: neither building on a law like Poland nor on a soft approach like France. The Dutch approach to open data is built on the "comply or explain" principle that the top political leadership of the Ministry of Interior in charge of OGD pushed for acceptance by the secretary generals of all Dutch government departments. Based on an order issued by parliament, all public sector agencies have been asked to provide an inventory of the data they own. The Cabinet will identify the key datasets among those in the inventory to be made available as open data as a priority.

In order to create a sense of collective commitment across the administration to increasing openness of government data, **Denmark** has been focusing on the development of a "government data and information management policy". The point of

departure was recognition of the key relevance for efficient public sectors of high-quality basic data registries used by all actors. In the digitisation age, these registries are seen as being at the core of public sector efficiency. The Digitisation Agency within the Ministry of Finance, responsible for setting and co-ordinating implementation of the OGD agenda, realised that the basic registries were not catering the needs of all parts of the

Box 2.3. **The French National Address Database ("*Base Adresse Nationale*", BAN)**

The BAN associates each address listed on the French territory (25 million addresses) with its geographic co-ordinates. It does not contain any nominative data. This database is a pioneer of its kind as it was built from address databases of La Poste, the National Geographic and Forest Information Institute (IGN) and the Public Finances General Directorate (DGFIP). It was then enriched by data produced by governmental agencies, and will be fuelled by citizen contributions. The aim is to gradually extend participation to all address actors. On adresse.data.gouv.fr, municipalities, companies and citizens can freely contribute and use this database on the principles of collaboration (share, improve and re-use a common good). The idea is to engage all key "address" actors that are contributing to modernising government and local authorities, engaging them in open data policies, in the maintenance of a contributory common resource and in the co-production of an open source information system.

The BAN offers a "Local Address Counter" to assist municipalities in their daily processes of managing the road network. This counter enables them to create new addresses, and to geotag, name and number them. The BAN will also generate the paperwork to be validated by the municipal council, as well as notifications intended to end-users and institutional partners. The Local Address Counter hence facilitates the entire process of road network management, from updates identification to citizens information.

For the private sector, the BAN is a reliability and optimisation tool of their mailing lists. It offers a guarantee of quality and allows the geolocation of addresses. Lastly, the BAN aims to propose a new solution to citizens for their address geolocation requirements, based on the address database authenticated by La Poste and the IGN.

Source: Information provided by the French government.

administration and they were not meeting the need of a digitised public sector. Registries had been developed as mandatory by law but were not based on users' needs. To move from adherence to the law to meeting the needs of the administration, the Danish government launched a "Basic Data Registries Implementation Programme" (2013-16), whose purpose is to revisit the governance system of data management within the public sector – including changing numerous laws to clarify responsibilities and ensure data quality – and to improve data quality and use. Great emphasis is placed on data modelling to ensure that data can fit semantics. Partnerships were established with the financial sector (e.g. board representing land companies, financial entities) and will be expanded to other utilities sectors to capture views, advice and feedback on the data architecture in order to secure that the data respond to users' needs. A board was created for the programme that mirrors the governance model for digital government. The focus on data as a strategic asset for public sector efficiency and modernisation is helping the Danish government to create a common agenda around the ideas of data governance and of data (quality, use and sharing) being at the core of public sector reforms (e.g. employment, taxation, environment). Hence, by providing a clear value proposition (business case) for joining the Basic Data Programme as a key to broad reforms, the government is stimulating actors' participation in the programme due to the recognition of the high value of data, not because it is mandatory. The goal is to increase the number of datasets

(e.g. social demographic data) in the Basic Data Registries Programme that also help create a business case linked to societal value and not only to the economic benefits.

For Poland, the above means ensuring that the MAC is aware that co-ordination requires resources to be effective; the need to bridge and align the MAC and Ministry of Infrastructure and Development (one is responsible for policy, whereas the other has funding at hand to support the policy); also, to build communities of practitioners, e.g. a forum, of good practice institutions and slowly enlarge this group.

Box 2.4. **Creating the national data infrastructure in Denmark**

Denmark has a strong tradition for national registries. This has helped enable an effective, modern and coherent public administration, despite a high level of decentralisation and fiscal autonomy at the local levels of government, relative to other OECD countries. Continuing the last decade of achievements, in 2011 the Danish government and the representatives of the regions and the municipalities agreed on "The Digital Path to Future Welfare – eGovernment Strategy 2011-2015".[1] This strategy covers 12 focus areas, among which is the sharing of basic data for all authorities, i.e. basic data is the core information authorities use in their day-to-day case processing.

The digital strategy outlines three overall milestones up to 2015 regarding data sharing:

- high-quality and cohesive core data ensures that the authorities can serve citizens and companies quickly and easily
- all authorities re-use core data so that citizens and companies do not have to enter or look for the same data several times
- core data is distributed more smoothly, efficiently and reliably thanks to a shared infrastructure for data distribution.

Basic data are, for example, data on individuals, businesses, addresses, real properties and geography (i.e. digital maps). Basic data can include personal data covered by the Act on Processing of Personal Data. This data will remain protected as it is today. The modernisation of basic data will initially include the most important information about businesses, cadastral registers, maps and buildings, and it will establish a new register of property owners of real property (Register of Property Owners). At a later stage, Denmark expects to expand modernisation by including personal data, data on incomes, road infrastructure and the financial statements of businesses.

The most important objectives of the Basic Data Programme are:

- basic data need to be as correct, complete and up-to-date as possible
- all public authorities must use public sector basic data
- as far as possible, basic data (excluding sensitive personal data) must be made freely available to businesses as well as the public
- basic data must be distributed efficiently, accommodating the needs of the users.

Note: 1. Available at: www.digst.dk

Primary tools and levers to foster co-ordination and incentivise participation

The CDO is part facilitator of data-related discussions and decisions, part decision maker with line management functions. In addition to technical tools such as

those used to collect, clean, harmonise and store data, communication, education, governance, institutional co-ordination mechanisms, budgetary levers (to the extent they exist), data management tools, policy and process engineering, and standardisation should also be mentioned. The tools needed are mostly management and project management tools, coupled with more hands-on tools, such as database or analytic tools. Policy and people skills, as the hardest part of their work, does not involve technology.

Engaging with the leaders who are guiding programmes, listening to their challenges and connecting them with the tools to help them use their data to accomplish their goals is crucial. Processes and tools that support "partnerships" have to be put in place.

Great communication skills are not enough to decode dirty data or see flaws in analyses. The CDO role itself, in many instances (for example at the state level in the United States), has been created by executive orders and legislative actions, as in Philadelphia, or open data legislation, as in San Francisco. While there can be ambiguity, whether the men and women who occupy the role carry enough statutory authority to compel compliance is sometimes in question, depending upon where they are placed. That said, there is no doubt that the laws and rules are important levers.

In order to make the CDO role a success, it must have both policy and budget support. These tools help a CDO to achieve his/her objectives, foremost to spur the needed culture and behaviour change within governments.

Finally, in order to get deep into open data, into data analytics and into prediction, there must be leadership, who has depth and the right skills. A highly technical set of skills is not a must, as the key challenge is mainly to go from understanding the internal workings to sitting down with the decision makers across government and indicating how data ties to policies in a coherent and smart way.

Funding models: From "agency thinking" to "system thinking"

Financing of OGD initiatives remains an open question as long as costs and returns are not properly identified, measured and communicated very limited number of countries, like Korea and the United Kingdom provide central funds for high-priority open government data projects.

Similarly, shared financing seems to be insignificant at the moment. Only Denmark created a model whereby a forthcoming "Data Hub" will be financed by savings achieved on the sides of public sector data owners and data users (e.g. lower costs for data hosting or data purchasing). Overall, however, financing remains an issue that ministries tackle individually. Clarity on how funding is allocated, by whom and based on what criteria is important not only for transparency but also because the funding model can become a strategic way to support more efficient implementation of a policy which is horizontal by nature, like OGD. Establishing a balanced funding model is quite challenging, particularly as for OGD – similarly to other examples of horizontal initiatives like those which are technology driven and enabled – the key question remains how to move from an agency-centric funding model to more collective action to create a context conducive to data sharing, mashing, re-use, etc. Additionally, in the case of OGD, financing becomes quite challenging as revenue streams in some public agencies are sometimes removed when data become open. Across OECD countries, there is no baseline data on the cost of public sector data management and of data release as OGD, which limits the capability to provide sound projections of new costs and required investments. The funding models required for efficient and effective OGD implementation imply a shift

from "agency" thinking to "system thinking", where sector-based approaches leave room for "community-based approaches" built on data as a core asset to deliver everyone's mandate.

At the moment, the OGD strategy in Poland has its own line of financing: EU funds. Moreover, substantial funding will be allocated to open government data projects as part of the EU's Digital Agenda 2020 (and its national implementation programme "Digital Poland Operational Programme" for the period 2014-20). The programme itself was developed in a multi-stakeholder fashion. But it is unclear if and how the actual allocation of priorities for open government data under the programme will take place. In addition, there are no good indicators in the programme that would allow the purposefulness of spending on OGD. For the moment, the programme financially supports the development of an IT system and the data conversion in open formats. Financial aid is provided to the entities that publish their data on the CRIP according to the law.

There is therefore room for Poland to improve the financing mechanism for OGD. The funding model needs to be associated to the creation of value out of the re-use of government data (e.g. providing financial support for APIs, sustaining hackathons and/or competitions for data re-use). To achieve the strategic objectives targeted by the OGD agenda of a government – economic and/or social and/or governance value – specific initiatives need to be selected and implemented. The funding model can therefore become a lever for prioritising choices, decisions and spending and for strengthening the focus on impact. The example from Denmark cited above shows how the funding model can be used to strengthen the focus on benefits realisation (e.g. economies and savings within the administration) and to free additional resources to be reinvested in OGD.

Common guidelines and standards

Governments are looking into ways to set standards and get more useful data flowing across siloed agencies to improve governance and to maximise the value of "data as a public asset". In particular, as countries have adopted digital government agendas focusing on making public services digital by default and moving towards government as a platform, there is no doubt of the need for clear and consistently applied data standards.

Many of the existing standards and contracts were not designed for the modern digital age and for the needed level of interoperability. In many instances, there is not a single data standard across complex administrations, which is the result of the way governments operate and of an organisational culture built around silos.

Standards and guidelines for information disclosure (e.g. what kind of information must be disclosed), on data formats and for open data portals exist in the Polish administration. However, results of the survey among civil servants carried out as part of this review process clearly show that technical challenges are perceived as a big hurdle. This includes interoperability, which is very patchy across the administration. Perceived challenges also include the need for guidance on dealing with personal data, for example to know what data can be made public and in what way can the administration de-personalise. Existing problems of data quality at the source will need to be tackled in the longer run and in order to comprehensively deal with all these matters it is important for the Polish government to place interoperability on the open government data agenda.

In the absence of clear standards consistently utilised by the administration, a growing number of competing data registers risk being created with the result that there are often multiple lists of the same data. The United Kingdom, for example, has not settled on a

canonical register of business data. Companies House has something perceived to be canonical, but no one uses it properly inside government as departments use their own lists of businesses and data, while other organisations use it to transform the market for business services. Governments need to take decisions about what registers and data are canonical, and need to work out some basics, like what an open address format should look like.

This is essential as when governments open up well-structured datasets to the market important uses are made of them and value is generated. The same does not happen within public sectors. It is a throwback to the siloed culture of government; it creates huge operational and financial waste, and it precludes governments from developing new services and forms of businesses. This is why data standards become an important lever to sustain the type of co-ordination, integration and interoperability that will allow data to flow. With data flowing naturally across administrations, requests for data can be spared and greater use can be spurred.

Efforts to improve open data standards are often the result of decisions taken in response to the data users' community's request to adopt open standards, which can reduce their costs and make it easier to work with governments.

In Spain, standards and guidelines on data formats and metadata standards are technical guidelines part of the National Interoperability Framework. Additionally, the Royal Decree 1495/2011 foresees the development of a Resolution of the Secretary of State of Public Administration with rules/guidelines concerning the standardisation of several issues related to the publication of government data. This resolution was published in 2013 under the title: Technical Interoperability Standard for the Re-use of Information Resources.[6] Standards/guidelines on licensing/copyrights with respect to release/use of data are part of an annex of the Royal Decree 1495/2011; standards/guidelines for open data portals/websites are part of the implementation guide of Royal Decree 1495/2011; guidelines/rules concerning charging for government information are published at datos.gob.es; and the technical and architectural details have been also published at datos.gob.es.

Data standards as a forcing function can only work in conjunction with the technical skills necessary to understand and implement them. There is little sense in government setting standards and just hoping they will be taken up. Governments have to embed the technocratic capacity necessary to implement the standards at the point of delivery.

Many civil servants have grown in a context of public governance rooted in the analogue age, not rooted in the situational awareness of today in which data can play a key role and change how wisdom in public organisations is used. Many civil servants in OECD countries are not modern and informed enough to use data appropriately to show their wisdom. The new context and demand for "data-driven public sectors" is providing an important opportunity to retrain civil servants and for expanding the set of skills sought for through new hiring. Additionally, governments are setting up new ways to build and transmit needed skills. The **US** initiative Code for America is a great example of how non-institutional actors can co-operate with the public sector to build the needed capacities working on time-limited projects.[7] Similarly, Code for America has developed a guidebook[8] to explain what open data is and to get civil servants started with its implementation. Mainly destined to municipalities, it can work for the whole public sector.

Public sectors need staff skilled to work with data in a way that makes data usable effectively across government and by the public. Data skills include handling, presenting,

manipulating, assessing and analysing data. Some relevant roles include data scientists, senior information responsible owners (SIRO), performance analysts, technical architects, developers.[9]

Additionally, as standards are being set, an open dialogue is needed with the users of those standards and data, inside and outside of government. As the digital age has progressed within governments, civil servants have lost touch with users of public services and information. OGD initiatives, similarly to new approaches to digital services (such as Digital Government Services in the United Kingdom and the mirroring initiatives General Services in the United States) built around the concept of constant feedback mechanisms and user centricity are providing important opportunities to revert the tendency. Many data flows are broken today as the systems were not configured for data interoperability and the needs of data-driven and interoperable public sectors. Focusing on fostering rich data flows and making them two-way is essential.

An agreement on a common format for data exchange supports the sharing, easy identification and re-use of such data. For example, some cities have invested in DCAT systems consisting of a "Resource Description Framework[10] vocabulary designed to facilitate interoperability between data catalogues on the web" (W3C, 2014).

Conclusions

Establishing an effective governance for OGD is pivotal in order to support co-ordination among the various stakeholders and the right level of political support for the design and implementation of the OGD strategy. OECD countries have opted for different options that range from locating OGD co-ordination functions within the centre of government (e.g. France, Mexico, the United Kingdom, the United States, Mexico, the UK, France) to assigning them to line ministries' level (e.g. Denmark, New Zealand, Denmark). In addition, many OECD countries are establishing the chief data officer/scientist position at the central government level to ensure coherence of actions and co-ordination of actors.

From the analysis included in this chapter it appears evident that some efforts are required in Poland to secure the availability of an adequate governance framework coupled with the availability of the necessary resources. This would help to bridge and align the MAC and Ministry of Infrastructure and Development (one is responsible for policy, whereas the other has funding at hand to support the policy), and would facilitate the creation of communities of practitioners, e.g. a forum, of good practice institutions and slowly enlarge this group.

Translating these observations into concrete actions that might fit into the Polish context means considering the need of a leader on open government data (e.g. a CDO type person) with strong political support (e.g. appointed by the Prime Minister and reporting to the Prime Minister), a mandate that combines the powers attributed to the MAC and Ministry of Infrastructure and Development (i.e. to be able to align the EU funding to OGD with the policy priorities formulated by the government).

Notes

1. To access the Prime Minister's official decree see: www.legifrance.gouv.fr/affichTexte.do;jsessionid=?cidTexte=JORFTEXT000029463482&dateTexte=&oldAction=dernierJO&categorieLien=id.

2. To access the Executive Order see: www.whitehouse.gov/the-press-office/2013/05/09/executive-order-making-open-and-machine-readable-new-default-government-

3 See OECD Recommendation of the Council on Digital Government Strategies http://www.oecd.org/gov/public-innovation/recommendation-on-digital-government-strategies.htm.

4. See: www.techrepublic.com/article/chief-data-officer-insight-into-a-crucial-role-for-the-exabyte-age/?tag=nl.e106&s_cid=e106&ttag=e106&ftag=TREf7159e0 (last accessed on 8 May 2015).

5. For more information on Dataconnexions see: www.etalab.gouv.fr/dataconnexions.

6. To access the resolution see: http://datos.gob.es/saber-mas?q=node/2672 (last accessed on 11 May 2015).

7. For some examples on open data see: www.openoakland.org/about-2 (last accessed on 16 June 2015).

8. To access the guidebook see: www.codeforamerica.org/governments/principles/open-data (last accessed on 16 June 2015).

9. See: www.gov.uk/guidance/digital-and-technology-skills/data (last accessed on 16 June 2015).

10 The Resource Description Framework (RDF) is a framework for representing information on the Web. RDF Concepts and Abstract Syntax defines an abstract syntax on which RDF is based, and which serves to link its concrete syntax to its formal semantics. It also includes discussion of design goals, key concepts, datatyping, character normalisation and handling of URI references

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Chapter 3.

Fostering a "can do" culture for open government data in Poland

This chapter provides an overview of the Polish context for open government data. It describes the actors and conditions that led to the current state of OGD in Poland, highlighting the need to move from compliance orientation towards a whole-of-government commitment to the open government data agenda. The chapter emphasises the need for charismatic leadership and stronger community involvement as core elements to sustain commitment and buy-in across government.

This chapter provides an overview of the actions taken by the government of Poland to build an open government data ecosystem where a multitude of actors can interact. The chapter outlines the efforts taken to set the right conditions, to support building of communities, and to develop effective instruments. But it also highlights shortcomings in the actions so far – in areas where the Polish government can draw upon existing good practices in other OECD countries to increase the participation and interaction of communities that re-use government data in ways that add value for their constituents.

Introduction

Different countries have gone about stimulating open government data (OGD) re-use in their countries depending on the national context. What works in one country is not necessarily transferable 1:1 to Poland. Nevertheless, there are three themes that help leading governments create a culture that promotes data as a key element for taking better decisions, being more open and inclusive, and responding to ever greater demands on policy makers to cater to a multitude of needs and challenges:

- creation of conditions, incentives and enablers that lay the groundwork for access, use and re-use of government data
- participation in and management of communities that re-use government data in ways that add value for their constituents
- using instruments and tools that help all actors engage more effectively around public sector datasets and their re-use.

Conditions, incentives and enablers

Before issuing recommendations on how to improve the foundations for OGD re-use in Poland it is worthy to consider the existing conditions for accessing and reusing government data. There are currently three main ways to obtain government data in Poland:

1. via the websites of individual ministries, agencies or sub-national levels of government, including also via the national statistical office
2. by explicit request with reference to the Act on Access to Public Information
3. via the national open government data portal, CRIP (Central Repository for Public Information).

Data access via individual institutions' web presences

Individual institutions across the Polish state administration already publish data, with amounts and quality that are quite heterogeneous. To achieve some degree of harmonisation about publicly available information (not raw data), the Polish state administration in 2008 introduced the Public Information Bulletin (*Biuletyn Informacji Publicznej*, BIP).[1] This was a response to an urgent need to harmonise the provision of basic information about the operations, activities, mandates and contacts of individual institutions.

The BIP is important in the sense that it improved the way that a lot of public sector information is published. The laws and regulations for the BIP explicitly determine the types of information and formats that need to be published by institutions. Using the BIP is an obligation for the quasi-totality of public sector institutions, not only the central government, but also legislative and judicial institutions, as well as local government. Templates can be re-used and individual institutions embed a button to access the BIP visibly on their web presences – next to a standard set of icons meant to facilitate contact, accessibility and search functions on websites.

Despite its harmonising impact on information provision, the BIP is not actually a rich source of open data by the public sector. This has to do with the still limited breadth and depth of the content provided: by far not all institutions provide the data required by law, and they are not always available in the expected formats either (see Chapter 2 in

Batory Foundation, 2014). The result is that a lot of publicly available information remains incomplete, unstructured and lacks the necessary metadata to allow more automated handling.

Even where the BIP provides structured information, it is rarely easy to re-use. The city of Poznan has created a publicly available application programming interface (API)[2] to allow third parties to access its part of the BIP and re-use information in automated ways, e.g. to create value-adding services on top of that information. This practice is, however, the first and so far only case of an open API to information contained in the BIP. No other state institutions currently enable automated extraction of information from the BIP. This means that the quasi-totality of information in the BIP is difficult to access by third parties that wish to integrate that information into their services, products or applications.

This leaves many interested parties with the option of searching for information and data on individual institution's websites. The situation there is much less harmonised. There are cross-government guidelines regarding accessibility, placing of contact information, etc. In reality there is, however, little standardisation in the scope and formats of information and data on public sector websites. This means that the quality and quantity of information varies greatly from one institution to another, as the following examples illustrate.

The national statistical office – a provider of a wealth of data in many OECD countries – is also in Poland an institution with a rich and deep offer of publicly available statistics.[3] Many of those data are in formats and with conditions that facilitate their re-use. The national statistical office also provides user interfaces to browse and interpret data in ways that support the discussion of public policy objectives and the monitoring of policy developments. Progress on the "Efficient State Strategy" can, for example, be monitored using indicators in the *STRATEG database* and interface.[4]

The national statistical office in general shows willingness and capacity to explore new ways of diffusing its data. Its statistics portal has an interface that allows relatively easy access to data sources, virtually all presented statistics are downloadable in machine-readable formats. It uses various tools to facilitate public comprehension and re-use of statistics: infographics;[5] a geo-spatial data portal;[6] an educational site.[7] Moreover, the statistical office's web presence has advanced accessibility options, a search function, contact possibilities that include Skype calls. What might be missing are ways to engage users even more directly, e.g. via social media, and to provide API access to its data.

Few other institutions in the central government come close to the national statistical office in terms of providing easy access and re-use options for their data. The national Head Office of Geodesy and Cartography (GUGiK) provides relatively easy access to geo-spatial information, although the depth of that information is so far limited by the fact that most detailed information is not free of charge and constitutes a major stream of revenues for the institution (see more on funding issues in Chapter 2).

Other organisations face a similar situation, in which they have a wealth of data available but lack the resources to make it truly open and easily accessible. The National Institute of Public Health, for example, operates a national atlas of mortality data[8] down to the administrative level of *poviats* (districts). The institute lacks the means and resources to offer its very granular and exhaustive data in more than HTML-based tables. This makes re-use more cumbersome than if there was a means to execute remote queries via APIs, or at least provide the data in a more structured format (e.g. CSV) along with the necessary metadata so that re-users can make most sense of the data.

Many institutions continue to publish data in closed formats that are very difficult to access and re-use. This includes the Ministry of Finance, which publishes the quasi-totality of the state budget, expenditures and debt data in PDF files regardless of whether the data is distributed via the ministry's main website,[9] its thematic public finance portal,[10] or the BIP.[11] Some of the ministry's data are available in more accessible formats, e.g. Excel files, but overall the availability of government spending and budget data falls short of any internationally used definitions of open data. This is confirmed by the OKFN 2014 census for Poland,[12] which finds that neither "government spending" nor "government budget" data are available as open data from official sources.

The absence of detailed fiscal information from the set of open and easily re-usable government data in Poland constitutes missed opportunities to more actively engage the public in discussions about public spending and policy priorities. There are many instances where more proactive opening of such data is leading to a higher quality and wider reach of public debate – things that would also benefit Poland:

- In the Netherlands, publication and easy access to detailed data about public subsidies by individual ministries has led to the discovery of overlapping or otherwise debatable subsidies, e.g. subsidies to the same company for the same reason by two different ministries. The data is openly available at the national budget data portal: http://opendata.rijksbegroting.nl.
- In Germany, the Open Knowledge Foundation operates a platform (http://offenerhaushalt.de) that gathers public spending data for national, regional and local levels of government from different sources. The platform is continuously expanding its coverage as more budget data becomes openly available. The fact that data can easily be visualised, rearranged and dynamically accessed makes the portal a frequent source for journalists, researchers and the general public interested in the topic.
- In the United Kingdom, the portal "Where Does My Money Go?" (http://wheredoesmymoneygo.org) has done impressive work to simplify the communication about public spending and finances in order to reach a wide audience. The "Daily Bread" simulator, for example, explains and visualises how taxpayers' contributions are used to constitute public expenses in different areas.
- In Italy, the Opencoesione portal (http://opencoesione.gov.it) publishes open data on EU structural funding disbursed for projects in Italy, alongside very user-friendly visualisations and maps to navigate between aggregate statistics and detailed projects. A website with the same purpose exists in Poland (www.mapadotacji.gov.pl) and has a wealth of data that is relatively easy to list and download. Better visualisation and mapping tools would, however, substantially improve its ease of use and enable a more transparent and inclusive public debate about the spending of EU Structural Funds.
- Given that the Polish tax administration is also located under the Ministry of Finance, it is worthwhile to note the French OpenFisca project (www.openfisca.fr/en). This co-operation between the state and relevant think tanks resulted in a calculator of obligations and benefits that is relatively easy to use for individuals. Besides better understanding their current situation regarding taxation and social benefits, OpenFisca allows the general public and experts to simulate the impacts of ongoing or planned reforms on individual and public finances. It is a very promising tool to elevate the quality of public understanding and debate on public finances by means of connecting different data sources and making them easy to analyse and interpret.

Finally, there is a "long tail" of government institutions in Poland that only have primitive interfaces to access information online. Consequently, those institutions' capacities to provide data in open and accessible formats are very limited. This can be seen at the central level, but certainly much more so at local levels of government where resources are extremely stretched. Easy-to-use tools and hands-on guidance would be important to enable those institutions make progress without further stretching resources.

Data access via requests to access public information

For lack of a more homogeneous way to access public sector data, interested parties often revert to the Act on Access to Public Information. Such requests are frequent; individual ministries can receive up to several thousand such requests per year, which evidently strains resources. It is therefore not surprising that non-government actors indicate that response timelines are not always respected and that the information provided is not always complete and therefore requires repeated requests to receive the full set of information (cf. Batory Foundation, 2014).

Only few government institutions seem to actively monitor the volumes and types of incoming requests for access to public information. This is surprising because doing so would allow these institutions to proactively publish certain types of information as a means to try and reduce the number of requests. The Ministry of Economy, for example, published a long list of requests received between 2010 and 2014, along with the responses issued, on its BIP.[13] The ministry also operates an electronic information request form on the same website. The majority of institutions, however, rely on paper-based or email-based requests only and are also less transparent about the numbers or types of requests received, and the answers provided.

Lack of central monitoring or reporting of access to information requests and their responses leaves the administration unable to systematically identify data and data sources that are of public interest. It also means there is little official information about the level of compliance by individual institutions. For these reasons, Poland is situated in the bottom tier of 89 countries rated for their performance on implementing the right to information (RTI Rating, 2013). More thorough collection of statistics in this area and reporting of results would greatly increase transparency, and could create soft pressures by exposing leaders and laggards. The United Kingdom, for example, regularly publishes a set of metrics on access to information requests, e.g. volumes, response times (Box 3.1). When creating central monitoring mechanisms, the Polish government should attempt to make a distinction between requests for information (e.g. all details about a procurement contract) or to data (e.g. number of teachers across all schools in a given jurisdiction) as an intermediate step towards better identification of frequently requested data.

Better handling of access to information requests is not a substitute for stronger commitment to open government data, as there are important differences between the two concepts (see Ubaldi, 2013). And although better access to public sector information can pave the way for more proactive opening of public sector data, it does not exempt the government from providing data more proactively and in ways that are easy to access. Otherwise re-users often face arduous processes, e.g. when they want to access datasets that have a logical connection but are physically dispersed across different parts of the state administration. The results of school exams are a great example – an organisation or individual interested in comparing school exam results across the country would have to enquire with each commune – of which there are over 2 000. Without a more proactive effort by the state administration to facilitate central access to such data, its use and analysis by non-government actors remains practically unfeasible.

Box 3.1. **Monitoring compliance with information requests to the United Kingdom government**

Freedom of information requests are centrally and regularly monitored by the Ministry of Justice. Periodic reports allow the general public to scrutinise the compliance of individual institutions. Moreover, central collection of such data allows the government to better understand information and data needs by the public; and to identify performance issues in the public administration when it comes to providing timely and qualitative responses. This is particularly effective since the data and information are accompanied by hands-on guidance on how departments can implement and improve access to public information.

Data on freedom of information requests are regularly published in the form of reports and downloadable data tables. They include for each individual department the number of requests, timeliness of responses, initial outcomes, exemptions and exceptions used.

Source: www.gov.uk/government/collections/government-foi-statistics.

A major challenge the Polish administration faces in this area is interoperability. Over 80% of central government institutions feel that current infrastructures are not well integrated, which reduces their capacity to efficiently extract, exchange and provide public sector data. The high burdens of low interoperability on public sectors have recently been illustrated by a comparison of digital government in Finland and Estonia (OECD, 2015b). A long-time digital government leader, Finland today feels the consequences of years of neglected interoperability, which today slows down government capacity to take decisions and implement them swiftly. Similar to Finland, the Polish government needs to urgently move the issue of interoperability out of the technical and into the political sphere. Otherwise the issue will remain a long-term handbrake for any efforts to more systematically exploit data as an asset across the whole of government.

Data access via the national open government data portal (CRIP)

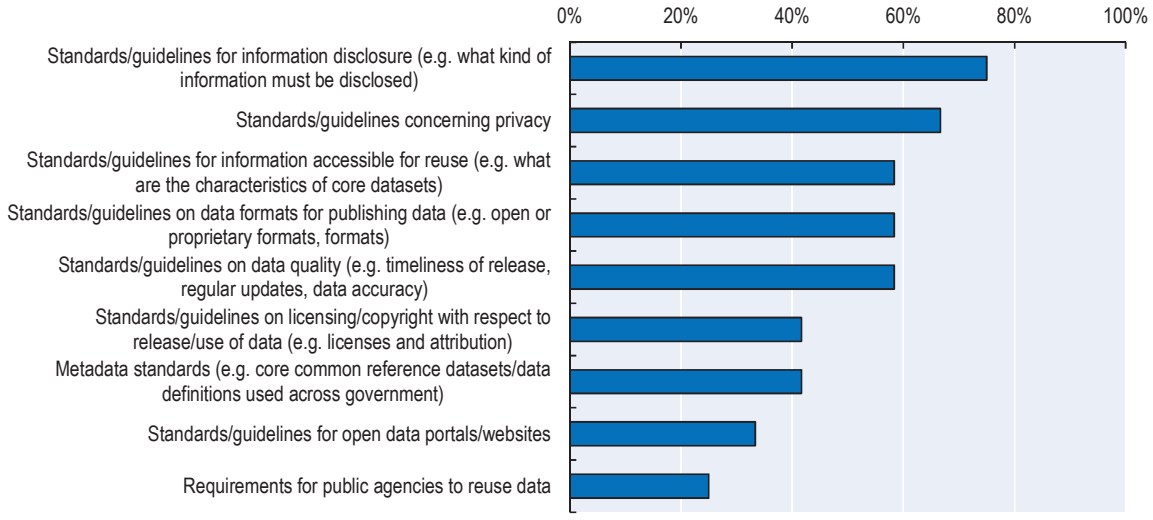
To overcome the difficulties in accessing and reusing public sector data, the Ministry of Administration and Digitisation (MAC) created a central data portal, the CRIP, in 2013. This development is relatively recent, just like the area of open government data itself, hence there is naturally a lot of space for improvement of the CRIP. This includes reviewing and addressing the basic conditions that underlie successful open government data implementation: data formats and quality standards, licensing; but also addressing horizontal issues that can be an enabler and a barrier: interoperability, rules regarding statistical anonymity; and finally content selection and communities (which are discussed later in this chapter).

Harmonising data formats and quality standards is an important part of the central guidance for successful OGD implementation. Preparing closed data sources for opening up requires the use of common standards so that re-users can easily access and combine datasets from different sources. Some of the datasets available on the CRIP are available in CSV formats (comma-separated values), which render the data machine-readable and sufficiently open. However, a large number of data remains in PDF and other, rather closed, formats because they cannot easily be processed and interpreted by automated services.

This is not only an issue of the CRIP, but rather an issue at the source of data. By far, not all institutions report that they use or receive any kind of guidance or standards on important issues such as formats, licensing or metadata use (Figure 3.1). But even those

that do often do not have the capacity to implement it. Hands-on guidance is therefore critical to ensure that the conditions for data re-use are improved at the source, and to make sure that a portal such as the CRIP can count on the availability of a large number of open datasets.

Figure 3.1. **Use of common standards or guidelines for open government data across central government**



Note: Based on answers to the question (Q14): Please select which of the following you use in your institution (either developed by your institution or used across government, e.g. as part of binding legislation).

Source: OECD (2014), "OECD Survey on Open Government Data in Poland". Survey administered across the Polish public administration in 2014 as part of this review.

It is important to provide ministries and agencies with clear and easy-to-use guidance on how to prepare data for better re-use. Legal texts provide a mandate, but are not easy to interpret and act upon. The organisational units tasked with collecting, producing and providing data need more hands-on and didactic guidance about meaningful opening up of government data. As an example, the United States' CIO office compiles a rather comprehensive set of information on how to implement central guidelines.[14] As part of this information, the "Project Open Data Dashboard" displays individual federal government institutions and the degree of implementation of the federal government's open data policy.[15] This gives central government and the public a way to monitor efforts, and institutions a way to look towards good practices across the administration. Good guidance can also come from outside of government. The Code for America foundation has published an open data "playbook" based on its rich experience of working with sub-national authorities in the United States.[16]

Providing hands-on guidance to help individual administrations prepare their data for re-use requires central capacities – human and knowledge resources. In terms of human resources, successful open data teams in countries like France had to grow fast in order to keep up with the strategic ambitions of the government and to meet increasing demand for guidance and support from across the administration. What started out as a very small team in 2011 today already relies on more than 20 people and keeps on recruiting.[17] The Polish government must be aware of the fact that high ambitions and growing

expectations are likely to require additional human resources dedicated to the promotion of open government data (see Chapter 2 on the need for leadership in this area).

A hesitation often heard across the Polish administration relates to concerns about the quality, complexity and use of datasets to be published. Many institutions do not want to make datasets available for fear the public might not be able to re-use the data properly, there might be misuse or incomplete data might be publicised.

Although such statements are often also heard in other OECD countries, experts and decision makers increasingly agree that this should not be an argument to hold back from publishing data. Even in a field as sensitive as healthcare, a French commission of healthcare stakeholders recently concluded that healthcare data should be: 1) opened up regardless of the potential use or re-use that could be made of it; 2) opened regardless of the quality, completeness or complexity of the data in question; 3) opened as granular as possible, while ensuring anonymity and complying with laws such as on commercial secrets; 4) made public whenever future surveys and research is funded by public means (Drees, 2014). The commission's report is now shaping the preparation of a draft law to open up several healthcare databases.

Not only in healthcare but in any policy area, discussions about handling personal data must be addressed. The French commission's report is, for example, explicit about the need to consider all possibilities for de-anonymisation (e.g. by exploiting different datasets) before datasets with personal data can be provided as open data.

Similarly, laws and regulations around statistical anonymity must be upheld – although in some cases it might be useful to consider their revision. In Poland, as in other OECD countries, specialised laws and regulations impede access to data when they are collected through surveys, which can also include surveys of institutions such as individual hospitals. The Ministry of Health is by law not allowed to access such data to compare performance and evaluate the impact of policies. It is quite evident that this creates a trade-off between statistical anonymity for hospitals and the potential benefits of transparency and public service improvement by access to such data. In the United Kingdom, nationwide publication of data on heart surgery mortality rates per healthcare institution has, for example, been found to greatly increase the quality of care for patients (RCS, 2009).

The rights and obligations of re-users must be clearly stipulated to give re-users long-term stability, but also to provide clear guidelines to data providers. Currently only around 40% of central government institutions feel they have clear guidance on the conditions they are allowed or expected to grant for data re-use (Figure 3.1). And over 80% of institutions require better legal or regulatory support, which includes clear guidelines on the conditions under which they are expected to publicise data (Figure 3.1).

The national Law on Access to Public Information makes reference to some re-use conditions, e.g. attribution of the source, but these conditions are not always clearly stated at the data source. The CRIP seems to place most of the data in the public domain. While this can be perceived ideal at the outset, it might create an impression by potential data re-users that government has not yet addressed this issue and might make changes in the future. Opting for a license would make the re-use conditions truly irrevocable, and therefore provide legal stability for re-users, including for commercial aims. In addition, it can be used to clarify liability issues, e.g. to exempt the public administration for any liability from incomplete or inaccurate data – an important component in persuading the

administration to open up data regardless of commonly heard concerns about data quality or completeness.

The term "licensing" seems to be a sensitive term in the Polish OGD context. This is no different in other countries though where governments eventually found ways to establish very permissive licensing regimes that are welcomed by large parts of the communities of re-users; and that are compatible with other countries' licenses, i.e. they facilitate future expansion of OGD polices and re-use scenarios. Stating attribution and liability conditions attached to public sector data is fully compatible with the revised EU Directive on PSI (cf. European Commission, 2014).

As a means of example, the French "Open license" (*License ouverte*) has greatly supported the development of a very active national ecosystem for open government data. The only strong conditionality is the attribution of source, which makes the license comparable to the international ODC-BY and CC-BY licenses.[18] It also excludes liability for the public administration's data providers. Another example of a very permissive license is the United Kingdom's OGL.

Communities: It all starts with communities

Open government data bears fruit only when communities of data providers, users and re-users find ways to engage. In some instances government can take a lead role in establishing and nurturing such communities; in others, governments can leverage existing communities instead of trying to rebuild everything from scratch. In either case, community engagement requires dedicated resources to be able to turn OGD efforts into actual impacts.

Overall, the community aspect is little developed in Poland yet, but it can build on existing national conditions and international experiences. Although the ministerial decrees that mandate the publication of data on the CRIP undergo a public consultation, a view across all ministries reveals that potential user and re-user groups are not systematically consulted about their data needs (Figure 3.2). The recent upgrade of the CRIP improves the possibilities for users to submit proposals for datasets to be published. The impact of such initiatives to engage intermediate actors has so far been limited and points to a need for a more strategic approach to engagement. After all, intermediate actors are usually the ones that best understand "realities on the ground" and can therefore give guidance on what data are needed to better monitor and evaluate public policies. Commercial intermediate actors are key to adding economic value to public sector data, e.g. through the development of commercial services and applications that re-use public sector data.

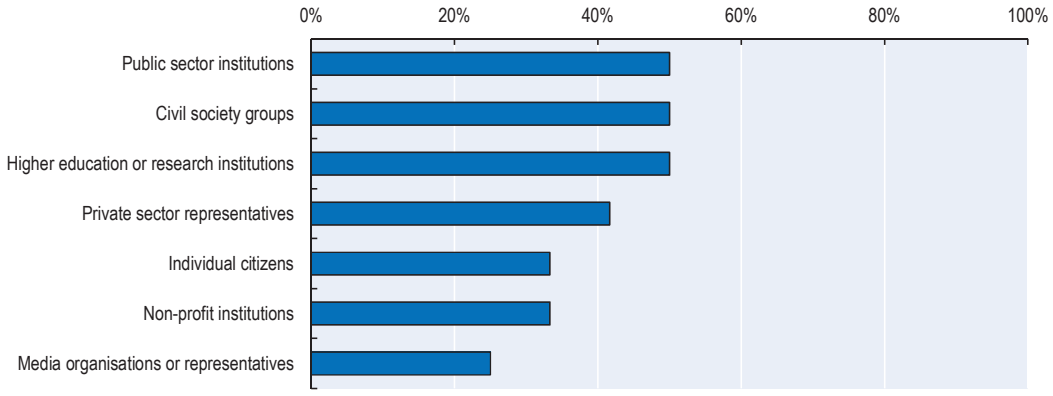
This is not to say that non-governmental actors do not have ways of influencing government policies in this area. The Digital Government Operational Programme was, for example, formulated in collaboration between government and a diverse set of stakeholder representatives. Advocacy groups, e.g. the aforementioned Polish Open Government Coalition, have been able to vocally place demands on government.

What is missing, however, is a more proactive inclusion of interested parties when government considers opening up data for re-use. No "off-the-shelf" recipes are available and national contexts differ significantly. Nevertheless, lessons and experiences by individual actors in Poland and internationally point to the different options the Polish government has to more actively stimulate the development of a dynamic "ecosystem"

for open government data. This ecosystem should aim to include actors from diverse groups:

- public sector institutions, including at local levels
- civil society
- academia and scientific institutions
- industry and businesses
- media businesses more specifically.

Figure 3.2. **Share of national government institutions that have consulted with specific user groups on their data needs**

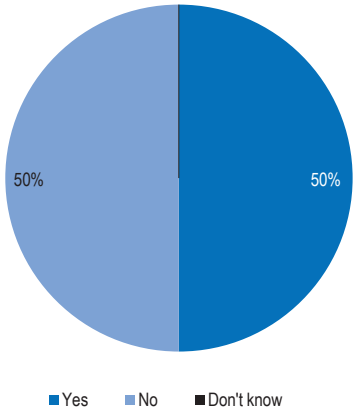


Note: Based on responses to the question (Q55): "Has your institution ever consulted with any of these user groups on the data they would like to have access to?"

Source: OECD (2014), "OECD Survey on Open Government Data in Poland". Survey administered across the Polish public administration in 2014 as part of this review.

Public sector institutions can leverage OGD to formulate more effective policies and implement them more effectively. This is certainly an ambition of the MAC, whose leadership early on asserted the great potential of public sector data as an asset to inform policy making, policy implementation and service delivery. However, this view of OGD as a critical enabler of better government has yet to take foot across the entire Polish administration. At the time of writing, around half of central government institutions in Poland indicated they had dedicated departments or units for "data analytics" (Figure 3.3): the Central Statistical Office, Public Procurement Office, Ministry of National Education, Ministry of Health, Ministry of Economy, Ministry of Environment. With the help of these national "champions", the central government should attempt to establish a community of practitioners to exchange experiences and try to expand the awareness and recognition of OGD as something that can support individual ministries' and agencies' agendas.

Figure 3.3. **Share of central government institutions that have a department for data analytics**



Note: Based on responses to the question (Q28): "Do you have a department dedicated to 'data analytics'?"

Source: OECD (2014), "OECD Survey on Open Government Data in Poland". Survey administered across the Polish public administration in 2014 as part of this review.

Those efforts of building a community of practitioners must integrate valuable local government experiences in Poland. As in most OECD countries, in Poland local initiatives and local authorities were the first ones to experiment with open data. Central government can leverage those experiences despite the fact it has no formal authority to mandate the opening up of local government data. OECD governments in a similar position turn to providing platforms, tools and incentives that encourage local governments to co-operate and collaborate, e.g. in the United States and France:

- The US federal government open data portal offers local authorities the possibility to have their datasets automatically catalogued (or "harvested"[19]). Doing so greatly increases exposure and re-use possibilities, which is one of the reasons many authorities below the federal level opted into this mechanism: around 25 000 datasets out of a total 130 000 on www.data.gov are sourced at state, county and municipal level authorities.
- The situation is similar in France, where a wealth of data sourced at regional and local authorities is included in the national open data portal www.data.gouv.fr. The portal allows official data sources to obtain a "certification" (clearly visible on the portal), which greatly increases exposure and confidence of data re-users. The portal also provides tools to manage and monitor access and re-use rates for individual datasets. A large and growing number of regional and local authorities use these convenient tools to include their datasets on the national portal. In 2013, several local governments created an association[20] with the specific aim to promote opening of data in municipalities across France – the association is an important partner for the central government to understand local authorities' needs around open government data.

Such international experiences should encourage co-operation and mutual learning between different levels of government. Cities like Warsaw, Poznan, Krakow, Gdańsk and Szczecin have already built communities, organised events and contests, and gathered first experiences from re-use. The ongoing redesign of the national open data platform CRIP, and follow-on activities, should definitely aim to leverage those local experiences and integrate the wealth of local communities' experiences. Local government actors on the other hand could be encouraged to create communities of their own, akin to the example of French municipalities (see above), or to use tools such as the Local Open

Data Census of the Open Knowledge Foundation to further expand the availability of local open government data.

Community-oriented approaches are equally important to engage non-government actors, i.e. civil society, academia and businesses. Governments across the OECD pursue a variety of objectives through engagement: raising awareness, consulting on data needs, exploring co-operation and collaboration options. The Polish government has taken some steps to involve non-government actors in its OGD agenda. The Digital Poland Operational Programme, which includes a component on OGD, was formulated in co-operation with selected government and non-government stakeholders. The MAC entrusted the development of the next version of the CRIP to the ePaństwo Foundation, a Polish foundation with rich experience in reusing open government data.

It is opportune to now move from individual steps to a more concerted government approach to engaging with existing and potential data re-users. Communities, networks and events of different types can help the government achieve greater reach, take-up and eventually impact for OGD. This should include setting up more regular and intensive modes of engagement, including user groups, meet-ups, contests, partnerships, etc. The following international examples provide inspiration, but are neither exhaustive nor can they be transferred "as is" – they must be adapted to the national context:

- The United Kingdom's Open Data User Group (ODUG) is a standing body composed of government representatives, civil society, academics and business stakeholders. It has been an influential actor in shaping OGD policies, exchanging practices and identifying opportunities for data re-use – for example by establishing, managing and monitoring dataset requests to the national OGD portal.[21]
- In France, the Prime Minister's open government data unit Etalab holds monthly lunch-time events ("Bonjour Data") that are free for any interested parties to attend and discuss ideas and issues around OGD.[22] In parallel to this unstructured, open-for-all set of meetings, the French government has been actively engaging government and non-government actors through its "DataConnexions" network (Box 3.2).
- The German government recently held a public consultation about the directions to take on open government data.[23] Similar to Poland, Germany has had a beta version of its open data portal in place for some time (www.govdata.de). The public online consultation represents an intensified commitment to OGD and allows the public to influence the national government's open data action plan for the near future. It is important to underline that this online consultation is only one step of a larger process that will now lead to workshops, drafting of an action plan and eventually resubmission of the draft action plan for public consultation before it becomes the German federal government's official action plan.

More intense interactions with the academic and scientific communities will also advance the national OGD agenda. Scientific networks such as the Polish "Open Science Platform"[24] have already gathered experiences around open science data. This community and its actors can be an instrumental partner in shaping the national OGD agenda.

Box 3.2. **DataConnexions awards and community in France**

Since 2012, DataConnexions awards have been awarded five times to the most innovative public sector data re-use in France. The annual contest aims at fostering innovation around public data re-use, by engaging with the key stakeholders of the French innovation ecosystem to help support the development of data-driven start-ups and projects. It aims at encouraging the development of the digital economy, and at fostering the emergence of innovative projects using open data to enrich existing services and applications, developed by the public and the private sector. Projects are selected by a jury of digital entrepreneurs, open data experts, venture capitalists and civil servants. The contest is open to all citizens, start-ups or even public administrations who can showcase projects based on innovative use of data.

For DataConnexions #5 (February 2015), projects were published on the www.data.gouv.fr platform. A pre-selection was made by the public which was invited to vote to select the finalists. Among these projects, the jury distinguished winners after hearing their pitches at the awards ceremony. It was an additional way to enrich the French open data portal and make visible projects and start-ups which competed in five categories:

- data-admin: projects initiated by a public sector institution and that are geared to address a specific challenge from the public sector angle.
- data2B: projects that re-use data to enrich or enable commercial services, applications and products.
- data2C: projects that are geared towards the wider public.
- data-utile: projects that are "useful" in the sense that they address a societal issue in the areas of solidarity, sustainable development, inequality. These are usually initiated by non-governmental organisations, associations, citizens.
- data-journalism: projects that utilise data to enhance journalism.

The next edition will be co-organised with the city of Toulouse in October 2015.

Source: www.etalab.gouv.fr/dataconnexions.

Creation of economic and business opportunities is another specific focus of OGD initiatives worldwide. This is no different in Poland where the "Efficient State Strategy" and Digital Poland Operational Programme aim to foster innovative business sector use. At the moment, this area is, however, very unexploited – due to both supply and demand-side factors. On the supply side, the OECD survey showed that only few institutions at the central government believe their data can stimulate economic activity; it came at the end of a list of driving factors ranked by institutions (see Figure 1.4 in Chapter 1). On the demand side, there seems to be little awareness of or consideration for business models supported, possibly even driven, by public sector data.

Raising awareness and interest of the private sector requires differentiated approaches for different target groups. Major international corporations have other motivations and resources for use of open government data than start-ups. The needs of large companies can relatively easily be gauged by engaging traditional intermediaries, e.g. trade associations and chambers of commerce. In most cases this might not even be necessary as large companies are likely to already have identified and addressed potential public sector data needs.

The bigger challenge is to stimulate economic activity among smaller enterprises, start-ups and potential entrepreneurs. In some cases emerging entrepreneurs are well aware of the data that is available and can be re-used for commercial purposes. For example, Zillow, the US-based real estate marketplace and information provider, uses a wealth of local public records as part of its data sources (e.g. transfer prices of houses). A somewhat comparable service in Poland is dobraulica,[25] a service that provides detailed information about different neighbourhoods of Warsaw, e.g. on available services and on perceived liveability. It uses various data collected and produced by public authorities. But, as the company directors describe on their website, obtaining public data remains a very arduous process and includes dealing with several court cases to get access to data.[26] Those discouraging conditions for enterprises to re-use public sector data must be improved in order to reap the expected economic benefits from public sector data.

There is thus great need within large parts of the Polish administration – at local as well as at national levels – to recognise the new business opportunities that emerge when public sector data is proactively opened up. The Spanish government estimates that companies reusing public sector data have generated revenues of around EUR 500 million from that activity, and employed over 4 000 people (ONTSI, 2015). Around 40% of those companies report exporting their business services abroad, thus contributing to economic development objectives of the government.

A study similar to the one regularly undertaken by the Spanish government could help the Polish government more systematically evaluate and communicate on the economic value of government data. Especially if, like in the Spanish case, it is combined with a survey to identify specific issues around the businesses and their needs (Box 3.3).

Box 3.3. **Spain: A characterisation of "infomediary" companies that re-use public sector data**

The Spanish government has established a sample of almost 500 businesses that carry out "infomediary" activities, i.e. their commercial activity depends in part or in full on data and information from the public sector. The sample helps the government to assess the business potential of government data (it is estimated to generate around EUR 500 million yearly revenues across the 500 companies). It also helps the government to profile this emerging sector of business activity and identify the needs of those companies. Selected findings so far include:

- The general profile of "infomediary" businesses in Spain is that of a small business: 48% are microenterprises with less than 10 employees, and another 25% have less than 25 employees.
- The business activities focused primarily on:
  - Geographic information – which would include businesses dedicated to using geographic and land registry information (graphic as well as alphanumeric) including urban information and information on meteorological forecasts – represents 35% of the identified businesses.
  - Publishers – which includes businesses dedicated to editing, drafting and printing books, commercialising databases, information services, publications, newspapers and magazines, distributing economic financial texts, etc. – are 32% of the businesses.
  - Market studies – which include businesses dedicated to activities connected with surveys of public opinion and research and market studies – make up 28%.

Box 3.3. **Spain: A characterisation of "infomediary" companies that re-use public sector data** (*cont.*)

  - Directories – which include businesses dedicated to creating directories and postal address guides for the purposes of locating and advertising to the businesses and people found in them and telephone subscriber lists – are 22% of the businesses.
  - Economy and finance – which includes businesses dedicated to commercial risk, credit and solvency information, credit bureaus, etc. – is another 22% of the businesses.

- Seventy-one per cent of businesses indicate that their "infomediary" activity is not carried out in isolation but is integrated with other activities.
- Most "infomediary" businesses re-use public as well as private sector information (72%). Only a minority of businesses re-use exclusively public (15%) or private information (13%).
- The type of information that is most re-used is socio-demographic and socio-economic, as well as data on transport, commerce and traffic. Next, there is information on urbanism, infrastructure, land registry information and information related to the economy and public finances.
- The improvement potential indicated by businesses is:
  - 65% of businesses still obtain information in a non-structured format, which requires subsequent transformation processes (i.e. adding costs and complexity to businesses);
  - businesses indicate that new models are needed for making information available on demand when it is not accessible;
  - more data and information is desired in the following areas: public contracts, the consumption of public services, land and equipment ordinance, demographic data on social behaviour, administrative authorisation processes and subsidies;
  - the most highly valued characteristics were that the information is free-of-charge as well as the structured and/or open formats in which the data and information can be obtained;
  - the evaluation was not as positive concerning the level of disaggregation of data, complexity of access, frequency of updates and availability of metadata.

Source: ONTSI (2015), *Characterization Study of the Infomediary Sector 2014*, March, National Observatory of Telecommunications and the Information Society, Madrid, available at: www.ontsi.red.es/ontsi/es/estudios-informes/estudio-de-caracterizaci%C3%B3n-del-sector-infomediario-en-espa%C3%B1-2014-reutilizaci%C3%B3n-de-.

As for any other target group, engaging start-ups should also follow the principle of leveraging existing communities and networks. Start-up events regularly take place in the commercial area in Poland, e.g. start-up events on fashion and technology[27] or on finances and technology.[28] The opportunity is to create a similar type of collaboration with start-up communities around government data – similar to the way Riga in Latvia co-operated with Garage48 to stimulate the creation of value-adding services based on open government data.[29]

Finally, the media are a specific case of businesses as the development of "data journalism" can be a great driver of OGD agendas. When media outlets start adding data analysis to their portfolios, it has great impacts on the effect and reach of stories, see for

example the very successful and highly popular "datablog" of *The Guardian* in the United Kingdom.

Even though the relationship between government and journalists sometimes suffers from mutual suspicion, there are forms and ways in which government can create an appetite among journalists to use public sector data to produce more compelling stories. The French series of "DataConnexions" awards, for example, include a dedicated category for data journalism excellence. The Polish government could also single out cases where data-intensive journalism helped elevate the quality and impact of public debate in a given policy domain, similar to what the New Zealand government does in its collection of case studies.[30]

Instruments and tools

Next to establishing positive framework conditions and engaging communities, government can use specific instruments and tools to better promote open government data. This area is still fairly new, so there are no guaranteed recipes for success yet. Still, international experiences in designing and using portals, awards and events – including hackathons – show options that the Polish government can consider.

Since 2014, the Ministry of Administration and Digitisation (MAC) has been operating the national open government data portal CRIP at https://danepubliczne.gov.pl/?locale=en. Having such a portal is an important step towards fostering greater re-use of government data and towards greater recognition of the usefulness of OGD within the public sector – this is the reason why the vast majority of OECD countries (29 out of 30 surveyed by the OECD) have such a dedicated national open data portal (OECD, 2015a).

Yet, a number of improvements should take place to move the CRIP from its current state of being a repository towards becoming a platform for co-operation and collaboration. The following issues need to be addressed alongside data format and licensing issues (discussed in the first section) as well as community engagement measures to identify and publish relevant content (discussed in the previous section); only together will these efforts lead to greater value creation from public sector data.

One of the more pressing needs is to make the portal more dynamic than it is today. The CRIP does have a search function and some accessibility options for users with special needs. It has a FAQ section that provides information for data users about the portal. Compared to leading OECD countries, however, advanced possibilities are missing that would allow federation of users and communities around public sector datasets. Some of those issues were addressed in the May 2015 update, which added or improved the possibility for users to rate the quality of datasets and request new datasets. What is still lacking though is a more interactive forum where re-users, civil servants and the public can mutually engage in discussions around the data. This would really help transform the CRIP into a platform for collaboration. Naturally, this requires not only technical fixes but also dedicated human resources to manage communities and moderate some of the interactions.

Metadata is an important component of open government data as it guides re-users. Some metadata is available on the CRIP, e.g. on frequency of updates, but overall it is far too little for re-users to be able to better understand the scope and limitations of the data at hand. Better metadata is absolutely critical to guide re-users and inform them about the ways government data can be meaningfully re-used in their services or applications. This

is particularly important in settings where the national portal will not logically hold all the data in a centralised fashion, but rather provide links to individual institutions' data sources. The Polish government can build on the experiences of other national governments in establishing common metadata standards in this area – and notably on the metadata standards developed by the OKFN.

As the Polish government moved the CRIP towards a CKAN-based (Comprehensive Knowledge Archive Network) architecture in May 2015 some of the above issues were improved, e.g. around usability of the portal, access to datasets, common metadata standards. This move does not in itself solve the issues that persist at the level of actual data producers where a lack of guidance continues to hamper greater availability of open government data. And it will not in itself create a greater drive towards publicising and reusing government data. For this to happen, the portal will have to move from being a repository towards actually becoming a platform. Users and communities will have to see added value and simplicity of use of the platform before they will engage.

In this area the French government has shown a very innovative approach by allowing non-government users provide their datasets, re-use applications and visualisations on the national portal, i.e. alongside official administration datasets. To distinguish official and non-official datasets, a "certification" label is visibly added to datasets that originate from the public sector. This move has been greeted with much enthusiasm by non-government actors who today are numerous to use the national platform.

Another interesting aspect of the French open government data platform http://www.data.gouv.fr/is that the community can post and promote services that re-use a dataset directly on a specific dataset's website. This is completely voluntary, i.e. re-users are not obliged to share their re-use with the community. But given that this adds exposure, more and more re-users choose to do it. One dataset that was recently opened (in January 2015) is DAMIR, a detailed national healthcare insurance dataset on medical expenses. The French government closely co-operates with non-government actors in promoting the dataset, e.g. through hackathons, blog articles and a community-driven Wiki to document DAMIR and its re-use scenarios.[31] Some analysis has been done, for example on correlations between life-style modes and average medical expenses across different regions of France. This and other examples are posted directly on the dataset's page.[32]

Co-operation and collaboration have been key in the French OGD agenda so far. The Polish government could adapt some of those practices, e.g. by creating awards that honour good practices by the administration in the area of opening up or reusing government data. The French "DataConnexions" series of events and communities can provide some guidance in this area (see Box 3.2 earlier in this chapter).

Other types of contests can be envisaged, hackathons probably being the most prominent in this area. Events such as hackathons and datapaloozas have as a unifying feature that they bring people together to solve specific challenges in a limited amount of time. The result of such events is rarely a fully functional product or service, but rather prototypes or minimally viable products that show in broad terms how the challenge can be tackled. Hackathons typically bring together area experts, software and database developers, user interface designers and other interested parties in a setting that enables collaboration around the common challenge, and encourages the use of data to solve the challenge.

Today, hackathons and similar contests involving public sector data have become a relatively common activity in OECD countries. In Poland there have been very few such

contests around public sector data, and solely at the local level, e.g. in Poznan, Katowice, Warsaw. Hackathons and similar events are quite popular in the private sector in Poland, so there is definitely space to improve the public sector's footprint in this area, especially at the national government level. The Polish government can build on international experiences to design data re-use contests and events that have a maximum of impact:

- Challenges need to be well defined so that the resulting solutions can be easily scaled and adopted. Instead of holding a hackathon on "public transport", it might be better to ask participants to address specific challenges, such as "how to improve the accessibility of public transport". The French public transport company SNCF embedded such a "hackcess" hackathon within its wider initiative of data-driven transformation of public transport. The results were prototypes of services that have the potential to significantly improve accessibility for transport users with special needs.[33]
- Target groups need to be well determined and adequately addressed. Reaching out to "the business community", for example, is not as simple as it sounds because the community is far from monolithic. Depending on their sizes, sectors and activities, different companies have very different interests and potential for public sector data re-use. A popular target group for open government data, start-ups, can be engaged through partnerships with existing communities in this area, e.g. start-up networks such as www.f6s.com.
- Civil servants should at all moments be part of the process so that they become owners and promoters of the results obtained through these collaborative efforts. This is particularly useful in areas where civil servants are so far rather reserved about the publication of data, e.g. because of concerns regarding sensitive data. The Polish Ministry of Interior and its police could look towards the practice of the French Ministry of Interior, which is certainly also a producer of sensitive data, e.g. on policing, criminality, road safety. It has started to explore the potential of its data sources for wider re-use through a two-day hackathon that brought together civil servants, the Open Knowledge Foundation, domain experts, journalists and the French government's open data unit Etalab. The event produced a variety of new uses of their data,[34] one of them a country-wide map of road traffic accidents that was publicised by one of the national newspapers and triggered a wide public debate on the issue.[35]

Whatever the mode of engagement chosen, it is important to embed contests into a wider set of activities. Otherwise there is a risk of creating "one-off" events that result in superficial results, as opposed to creating and sustaining a culture around open government data and its re-use across all areas of Polish society.

Conclusion

The right to access information and data held by the public administration in Poland is anchored in national law. This chapter however shows that there are many different constraints for individuals or organisations that actually try to access and re-use such data. Constraints include inconvenient formats, delays in obtaining data, cumbersome procedures or non-disclosure of certain data.

This in parts explains the low level of community engagement so far. The chapter shows that on the one hand the Polish state administration has made little systematic effort to better understand the needs of data re-users. At the same time, only a few non-government stakeholders appear to show the willingness or capacity to engage in

collaborative efforts around open government data. On both sides, there is a certain lack of interest in and awareness of the potential government data re-use could have.

Leading OECD countries recognised early on the need to work across government boundaries and with stakeholders to identify and reap returns on open government data investments. In Poland that kind of cultural shift towards cross-boundary co-operation and collaboration needs to accelerate. This will require more intense outreach by government to different actors, including within public administration itself, but also to businesses, civil society, academia, and media. Specifically, the government has a great opportunity at hand to transform the national open government data portal (Central Repository for Public Information) from being merely a data repository towards becoming an actual platform for interaction, collaboration and value creation around government data.

Notes

1. The BIP was first mentioned in the Act on Access to Public Sector Information (2001), and further regulated by a ministerial regulation in 2008. It can be accessed at: www.bip.gov.pl.
2. The API is available at: http://bip.poznan.pl/bip/api.
3. See: http://stat.gov.pl.
4. See: http://strateg.stat.gov.pl.
5. See: http://stat.gov.pl/infografiki-widzety/infografiki.
6. See: http://geo.stat.gov.pl.
7. See: http://stat.gov.pl/portal-edukacyjny.
8. See: www.atlas.pzh.gov.pl.
9. See: www.mf.gov.pl/pl/ministerstwo-finansow/dzialalnosc/finanse-publiczne/budzet-panstwa/ustawy-budzetowe.
10. See: www.finanse.mf.gov.pl/pl/budzet-panstwa/informacje-podstawowe.
11. See: www.finanse.mf.gov.pl/pl/web/bip/ministerstwo-finansow/dzialalnosc/finanse-publiczne/sytuacja-makroekonomiczna-i-finanse-publiczne/informacja-kwartalna.
12. See: http://index.okfn.org/place/poland.
13. See: http://bip.mg.gov.pl/Informacje+dla+obywateli/Odpowiedzi+na+nadeslane+wnioski+o+udzielenie+informacji.
14. See: https://project-open-data.cio.gov.
15. See: http://labs.data.gov/dashboard/offices.
16. The codebook is available at: www.codeforamerica.org/governments/principles/open-data.
17. See, for example, www.linkedin.com/pulse/etalab-recrute-laure-lucchesi.
18. See: http://wiki.data.gouv.fr/wiki/Licence_Ouverte_/_Open_Licence.
19. See: www.data.gov/developers/harvesting.
20. For more information about the association, see: www.opendatafrance.net.
21. See: www.gov.uk/government/groups/129.
22. www.etalab.gouv.fr/event/bonjour-data/all.
23. www.open-data-aktionsplan.de.
24. See: http://pon.edu.pl.
25. http://dobraulica.pl.
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27. www.f6s.com/poznansw.
28. www.up.co/communities/poland/lodz/startup-weekend/5138.

29. http://garage48.org/blog/garage48-open-data-and-public-services-riga-2015-winners.

30. www.ict.govt.nz/guidance-and-resources/case-studies/open-data/data-journalism.

31. https://github.com/SGMAP-AGD/DAMIR/wiki/remboursement.

32. See: www.data.gouv.fr/fr/datasets/open-damir-base-complete-sur-les-depenses-dassurance-maladie-inter-regimes.

33. See: https://data.sncf.com/news/laureats-hackathon-hackcess.

34. See: http://fr.okfn.org/2014/08/09/retour-sur-le-premier-hackathon-sur-les-donnees-du-ministere-de-linterieur.

35. See: http://rue89.nouvelobs.com/2014/06/25/carte-presque-tous-les-accidents-route-2012-253113.

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Chapter 4.

Data as a cornerstone of government digital transformation

This chapter provides an overview of how OECD countries utilise the OGD agenda within the broader context of government digital transformation. The chapter maps the efforts and challenges described in previous chapters against good practices in other OECD countries to increase data availability, accessibility and usability; release priority high-value datasets to create demand; and create innovative public service delivery modes. The chapter underscores the need to build capacities within the public sector and in the broader Polish society, as well as to create a system of incentives for the public sector and the wider public to engage in government data re-use.

Introduction

The reform of the public sector enabled by the digital transformation requires a strategic policy for data and information management. The massive amount of data produced, collected or financed by public administrations while performing their operations is a key resource to vitalise democracy, stimulate economic and social innovation, and improve the functioning of the state (e.g. co-operation between ministries, better management of public policies). A smart and agile government must rely on data to be more efficient as also recognised by the OECD *Recommendation of the Council on Digital Government Strategies* adopted in July 2014 (OECD, 2014).

Government produces many types of data: personal data, such as social security earnings, tax information, unemployment filings and voter registration; societal data such as demographics, employment estimates and economic indicators; and impersonal or scientific data, such as weather and climate measurements and geolocation data. There is great potential in applying powerful digital tools to the rich amount of government data to reveal new insights into difficult problems in nearly every area of human endeavour. Beyond rationales of increased efficiency, reduced costs, increased productivity and economic growth that will spur the release of new data, there is considerable potential for open data releases to extend to positive social justice, environmental, educational, public safety and health outcomes.

The OECD recognises the economic, social and good governance benefits that can be achieved when government data are released in machine-readable format, for free and under an open license, i.e. as open data (Ubaldi, 2013). Opportunities for new start-ups and for the private sector to develop new products and services, efficiencies within the public sector, better service delivery, improved public engagement in policy making and service delivery, increased government transparency, accountability, integrity and better decision making are all possible benefits.

Furthermore, data-driven approaches to decision making are being acclaimed as capable of generating improved insights to societal problems and improved responses to dealing with them. Better exploitation of large open government datasets available to national authorities is expected to revolutionise their ability to address major policy challenges ranging from crime prevention and deterrence, legal and regulatory reform, tax collection, climate change and cancer research.

Nevertheless, the release of data as open data is a necessary but per se not sufficient condition to enable value creation. Data re-use is indeed a necessary condition to deliver the desired impact. Today, as digital data increasingly appears to be a cornerstone of the digital revolution, the wealth of data produced and held by governments calls for engagements greater than the sole opening of data as it is originally produced. A wider access to larger quantities of high-quality data will help encourage the entire society to create value and provide new services useful to all citizens.

This is why focusing on increasing the quantity of data made available on national open government data (OGD) portals should not be the main target of OGD programmes. Efforts aiming to increase data availability and accessibility, as well as to spur re-use are all pivotal to move towards an OGD agenda that delivers the expected impact. The OECD *OUR Government Data Index* 2014 assesses the current state of governments' efforts to increase data availability, accessibility and re-use with the intent to boost impact.

Government's OGD visions and agendas should target value creation to ensure that decisions and implementation are geared towards actions that deliver value. These actions include increasing the availability of high-quality open government datasets; ensuring data are indeed accessible to the many and not only to technically prepared users; stimulate re-use by the various users. Getting the necessary "data" to deliver the desired value still remains a painful exercise for many data users from the whole OGD ecosystem. In many cases data are siloed – not enabling crunching and merging for example – inaccessible or not relevant. Additionally, implementation of OGD policies also needs to take into account potential for increased risks to privacy, security and discrimination, if rules, regulations, norms, ethics and a careful approach to enterprise inventories, digitization and data publishing are not undertaken as part of the process, or fuel the creation of applications and services that favour people who already are privileged in society.

This chapter assesses the Polish context for OGD value creation and addresses some of the key actions that can support data re-use for value creation, such as creating national data portals and facilitating data re-use through open licensing.

Understanding the value of open government data

The open data movement, which started with a primary focus on increasing government transparency (Ubaldi, 2013) by opening up the sets of data that governments might reluctantly accept to disclose to the public (e.g. on budget, public procurement), has increasingly come to focus on the release of operational data – such as bus schedules, parking meter locations, 311-type service request details, schools and hospital performance, crime-related data – that can be re-used not only to monitor and improve public sector performance, but also to deliver social and economic value to citizens and business in a broader sense.

Several governments have been pointing to the evidence that open data can fuel economic activities (Ubaldi, 2013) and significant efforts to measure impact have been trying to come up with estimates produced by international organisations and at national level[1] (OECD, 2011). Even if this view provides an important rationale for opening up government data, it is far from being the only impact that releasing data might have. Government data disclosure as open data can, among others, increase resilience against climate change, offer insights to healthcare costs and outcomes, protect consumers. More informed and empowered citizens can take better personal decisions while monitoring government performance and hence exerting better democratic control.

However, in order to deliver impact in a broad sense countries need to have the infrastructure and policies in place to support the implementation of open data programmes. Once the technology and policy mechanisms supporting OGD have been established, re-use needs to be facilitated, fostered and ensured.

In order to progress in this policy domain countries have focused on enhancing their open data capabilities by educating policy makers about the benefits of open data, working closely with civil society on open data initiatives and increasing international collaboration to share experiences on the "dos" and "don'ts".

The adoption of the Open Data Charter by the leaders of the G8 (now G7)[2] countries on 17-18 June 2013 recognises the important role of open data in promoting economic and social benefits and government transparency. It represents an important commitment

made by each country to five key principles on open data with a strong focus on economic value as well as less tangible social and cultural benefits.

Box 4.1. **G8 Open Data Charter**

In June 2013, the G8 members endorsed the G8 Open Data Charter and committed to design national action plans providing details on the implementation of the charter according to the national frameworks and to undertake initiatives to operationalise the following principles:

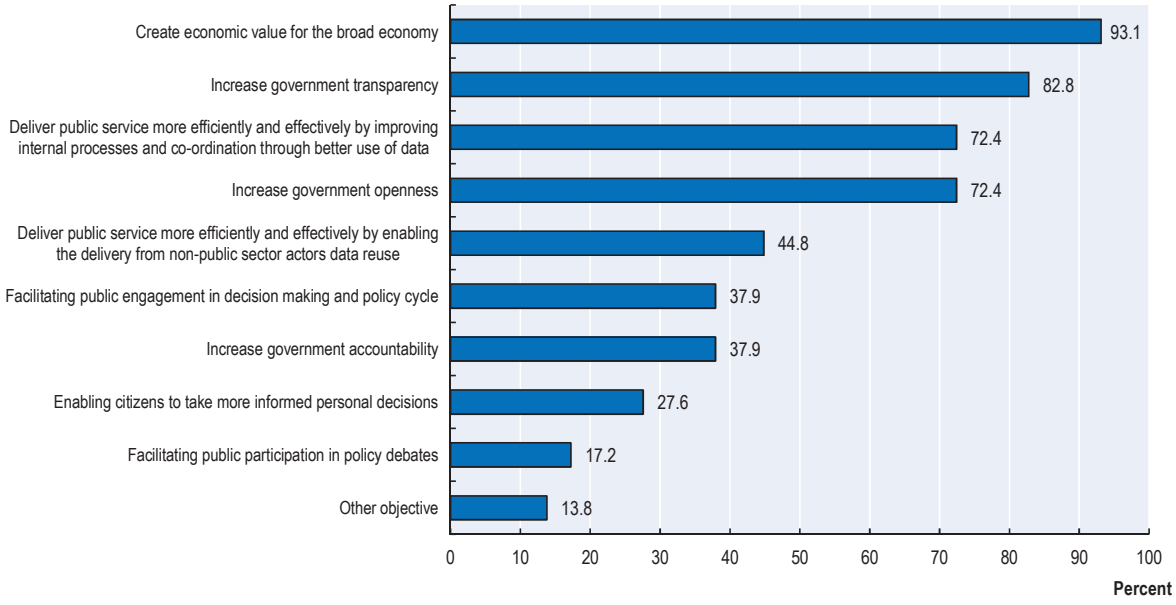
1. Principle 1: Open Data by Default
2. Principle 2: Quality and Quantity
3. Principle 3: Usable by All
4. Principle 4: Releasing Data for Improved Governance
5. Principle 5: Releasing Data for Innovation

Thanks to the many initiatives already adopted at the EU level, including the revised Directive on the re-use of public sector information and the new Commission rules on the re-use of its own documents, the G8 Open Data Charter is fully consistent with existing EU policy.

National efforts to advance open government data target different expected benefits across OECD countries (Figure 4.1). According to the 2014 OECD Open Government Data Survey, the main strategic objective of OGD across OECD countries is to provide economic opportunities to the broad economy – it has surpassed increasing government transparency and openness, which appeared as the main target in 2013.

Figure 4.1. **Main objectives of open government data strategies**

Percentage of countries ranking each feature among their top five objectives



Source: OECD (2014), "OECD Survey on Open Government Data in Poland", OECD, Paris.

There are interesting examples of OECD governments investing in open data for its potential economic impact. The **United States'** National Weather Service alone supports a private weather industry estimated to be worth USD 1.5 billion annually (Capgemini, 2013). **Denmark**'s open register of addresses has yielded EUR 62 million (USD 71 million) in value for its wide range of users on an investment of just over EUR 2 million (USD 2.3 million) as of 2010.[3] A similarly wide range of users of geospatial data from the **United Kingdom**'s Ordnance Survey was predicted in 2013 to generate an impact on Great Britain's gross domestic product (GDP) of GBP 13-28.5 million (USD 20-44 million) annually by 2016 (Carpenter and Watts, 2013).

Governments are also increasingly starting to appreciate the benefits they can achieve from open data through improved public services. In response to the 2011 nuclear disaster in Fukushima, **Japan**, the private sector website atmc.jp began pulling open data from the country's Nuclear Regulatory Authority to visualise changes in radiation levels over time across the country. Agencies at various levels of government can use this visualisation to plan and provide health and emergency response services (Timmons, 2013).

Moreover, there are plenty of examples showing how countries are using open data to increase transparency, reduce fraud, waste and abuse within government. Internally, that means transparency about data assets within the organisation. Data should be available where they are needed, in the format they are needed. Data need to be secure, and confidentiality and privacy of those providing the data protected, especially where there is information about individuals. Externally, the organisation should be perceived as treating data responsibly. In 2014, the **US** Centers for Medicare and Medicaid Services published a large dataset of claims data, containing physician-level information on payments from the public insurer, which journalists analysed to discover potentially fraudulent transactions and physicians who issued disproportionately large bills for their fields and geographic areas.[4] **Canada**'s Revenue Agency opened its dataset of charities' annual information returns, filings in which charities disclose their receipts and other information, following a series of investigations into tax fraud in the philanthropic sector.[5] Some of **Italy**'s recent anti-corruption efforts were spurred by a journalistic effort known as "Money to Parties", which digitised and opened data on political contributions that had been publicly available but not searchable.[6] The online database has been a major catalysing force for the open data movement in Italy.

Where political will and public awareness of open government data issues are relatively high, such as in the United Kingdom or United States, government priorities have begun to shift from simply publishing data to creating strong user communities and maximising the re-use value of government data (see also Chapter 3).

Creating the conditions to unlock the value of open government data

The OECD underlines the importance of data availability, accessibility and re-use for value creation. This section describes the measures and initiatives adopted across the OECD to address these three dimensions and foster value creation.

Increasing data availability

Operational data produced and disclosed as open data by governments is what is most often turned into apps that impact people's lives. As an example, the site City-Go-Round[7]

provides a gallery with transit apps that demonstrate how the re-use of data released by government can benefit citizens by improving their mobility.

Focusing on making the "business case" for the release of government data as open data implies creating the opportunity for "success stories" to happen (e.g. through hackathon events, contexts) and disseminating them. Often, "business cases" to stimulate proactive disclosure of data from data producers within governments focus on operational data that when re-used can deliver economic and social value to citizens and businesses. This type of data can also be tied back more easily to a specific objective or policy outcome of an agency, or of the government at large. They can be more easily related to targeted economic and social benefits and thus help improve efforts to measure the value/quantify the impact of data release.

When focusing primarily on releasing data that matter for increased government transparency, it is much harder to measure, impact. Yet, the purpose of increasing transparency can become of particular value, especially when the focus is on releasing new datasets and/or data that public authorities are normally more reluctant to disclose publicly. The city of Philadelphia provides a notable example[8] of providing details on the specific nature of the complaints against the Philadelphia police officers and on the location of the author of the compliant never released before. These data provide insights on the police department in a way never done before. Similarly, the release of data on geographic market areas in Philadelphia enable a citywide reassessment of taxable properties in the city.[9] These data not only provide insights on the methodology used by the city to conduct property reassessment but also allow those outside the city government to inspect the work done by the Office of Property Assessment. Even though in terms of sheer of numbers these datasets are small when compared to others, they required relatively more effort. Nevertheless, what counts is not their size but their novelty and the relatively smaller number of transparency data releases belies their value.

This point is very important as for quite some time the temptation among the open data advocates has been to evaluate the relative success of governments' open data programmes based on the volume of the datasets released on the portals. The accessibility of data, together with data type and quality of data are instead critical variables for impact. Therefore, there is a strong case to be made for releasing operational data (e.g. on bus schedules) that can at the same time increase the transparency of governments' operations, help monitor performance (e.g. how close to the published schedule are trains running? How long are 311 service requests open and in which neighbourhoods before they are resolved?). Hence, emphasis should be placed on adopting policies and creating infrastructures that enable releasing data that support increasing government performance while helping make democracies work better.

The context within the Polish public administration does not appear to be particularly inclined to share data and information. Even though the Law on Access to Information (2002) includes provisions supporting broad data re-use, there are legal procedures in specific domains (*lex specialis*) that differ and overrule the general law (*lex generalis*). Exemptions and limitations to access to public sector data and information seem to be hindering the effective implementation of OGD across the Polish administration. Copyright law in Poland foresees that public documents are not copyright protected work. So far the authorities were widely interpreting the dispositions in the copyright law.

Even though given the legalistic nature of the system, having legal obligations are necessary in Poland to move the OGD agenda forward. Authorities would like to be able to utilise the legislation to support more proactive data release. For example, more

flexible legislation would enable the agencies that wish so to be more proactive. In the case of the Act on Geodesy and Cartography, for instance, which was amended in July 2014, it specifies datasets that can be made open for access and free of charge. In the near future the Polish administration plans to amend the act once more to expand the list of datasets and remove some legal restrictions (e.g. the list of agencies that can re-use the data for scientific research is limited).

Box 4.2. **An inclusive use of social media by the Spanish police**

Policing heavily depends on people's confidence and co-operation to deliver an effective public service. The Spanish national police force (*Cuerpo Nacional de Policía de España*) early on identified the potential of social media. It started using social media in 2010 as an additional lever to engage the population and improve its services. The commitment was backed up with financial and human resources, notably the recruitment of a social media expert, Carlos Fernandez, to lead the effort. Today, a dedicated team is available to interact on various social media platforms to inform people, prevent, dissuade and combat crime.

The Spanish police's genuine engagement of communities is catching on with the public. Its Twitter account has over 1.5 million followers (@Policia), its Facebook page has over 250 000 fans (PoliciaNacional) and its videos on YouTube were viewed 6 million times (Policia).

A large part of this social media success is due to a deliberate choice of topics and style. Unlike many other government institutions, the Spanish police does not use social media for "corporate" communications such as relaying the agendas of its leadership or to issue traditional press releases. It rather uses social networks to support the police's primary mission by sending content-rich messages that are earnest, use "plain" language and are often humorous or provocative in order to attract attention in the very busy environment that social networks are today.

Such genuine community interaction has led to several mission-critical successes. One of those was the arrest of a murderer who had been on the loose for months after his conviction in 2013. On 14 January 2014, the Spanish national police launched a co-ordinated online and offline media campaign that included heavy use of social media to diffuse photos and information about the wanted individual. The social media posts went viral, i.e. they were replicated and diffused by thousands of social media users, which triggered several citizen reports leading to the arrest of the convict – the next day!

Source: Fernández Guerra, C. (2014), *@policía: las historias de un éxito*, Aguilar Press, Madrid; Mickoleit, A. (2014), "Social media use by governments: A policy primer to discuss trends, identify policy opportunities and guide decision makers", *OECD Working Papers on Public Governance*, No. 26, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jxrcmghmk0s-en.

The authorities also seem willing to increase the availability of datasets mentioned earlier in this chapter with high potential for economic and social value creation. These include, for example, data on crime statistics and concerning police headquarters. Data on crime are available on the police website, though only as PDF reports and not as disaggregated data. However, by law they are compelled to deliver the data and information in the format requested, therefore also as excel if the requestors ask for it. For the time being it is easier for the requestor to send an email to ask a question rather than to search the website. Asking for information seems to be the primary inclination of the Polish citizens. The police department received 700 requests in 2 months on crime-related matters. The requests vary a lot and are submitted from physical persons as anonymous

requestors, from non-governmental organisations (NGOs) and from journalists. The police receive many requests about road safety, about becoming security guards, etc. Based on these requests, it plans to update/change its portal and is using social media to interact with the public.

The police has to deliver data on criminality by law to the Central Statistical Office which then publishes it. From 2016 onwards the police will publish statistical data on the CRIP as well. Examples from Philadelphia mentioned earlier and Box 4.3 provide some concrete examples on how OECD countries have made progresses in releasing crime-related data.

Box 4.3. **Crime data in the United Kingdom**

data.police.uk provides anonymised data on individual crime and anti-social behaviour incidents, including street-level location information and subsequent police and court outcomes associated with the crime. Data can be downloaded in CSV format from the archive page.

URLs are structured consistently in the same format so users can download newer versions programmatically each month as updated. Because the data file is over 19 million rows, the authorities also provide custom CSV download and JSON API helper interfaces to facilitate access to subsets of the data. The site provides: crime prevention advice; ways to find out how to help reduce crime and avoid becoming a victim of crime; opportunities for reporting crime; and the chance to check the performance of police and crime commissioners.

The crime data powering the website are available allowing communities, local services and developers to build apps like the ones featured on the website. This enables better access to information on the police's performance and on the level of crimes across the United Kingdom. The UK Crime Dashboard enables to visualise all UK crime reports from the full public crime database with detailed statistics, by date range and over all districts on the same map. CheckMyStreet is a tool that lists crime by type and rate based on postcode or GPS location.

The Polish administration seems to lack an evidence-based policy culture and context, and it does not appear that there is a good understanding of the importance of data as a source of value. As a result, much of the data has not been utilised to reap its full benefits at the moment. At the same time, challenges to combine, harmonise and unify data (due to the fact that in most of the cases each dataset is managed by an individual agency) do not help foster collaboration based on data sharing (e.g. each agency has portals with data inventories).

In Poland there does not appear to be a strong tradition for increasing the availability of data to be re-used to create value. This can partially be explained given the legal system, the principle of statistical confidentiality and the fact that the Office of Personal Data Protection is extremely strict. In this context, institutions are careful and afraid to give information that might lead to a person's identification (they use the security and privacy argument).

The efforts made by the MAD to change this culture are commendable, but sustainable changes and results require the active engagement of a number of actors across the administration at all levels. Many institutions that are currently selling data with high potential for value creation (e.g. transport data) do not see the value of opening up these data or of proactively exchanging data within the administration.

Considering the fact that the Polish public administration is highly bureaucratic, legalistic and not prone to sharing information for free, ensuring the leadership and support from the top political level to push for the required changes and motivate civil servants is essential (see also Chapter 2). Furthermore, designing an OGD policy/strategy with a great communication component would be beneficial. This is key to show progress for instance and to create awareness. Communicating good examples from ministries that already have good practices to share would help together with motivating them to use the CRIP platform more. The CRIP could also provide a platform not only to publish the data but also to publish examples of data re-use.

In order to spur re-use connecting OGD with specific policy issues and leaving more space for engagement with the society would also help. Constructive collaboration with NGOs exists in Poland but it is not fully explored to boost the demand side.

Releasing priority high-quality datasets to create demand-led open government data

Prioritising the release of high-quality data based on demand is essential to enable impact. This implies knowing the data demand. **France** has made considerable efforts to work with civil society organisations in prioritising data for release. The national OGD Action Plan commits to holding a series of public debates to identify high-value datasets and points to the country's efforts to publish its best practices in multiple languages for an international audience.

Japan has also taken some civil society organisations' priorities into account when releasing data[10] and Japan's Open Data Action Plan mentions engaging with civil society organisations through its recurring E-Government Open Data Executive Meetings, government agencies to prioritise release of open data for economic and social value creation.

Italy has also progressively made efforts to release high-value datasets to spur economic value creation. The National Institute of Statistics and the Interregional Centre for Geographic Information Systems and Statistics (CISIS), the national mapping authority, have committed to publishing their high-demand national statistics and national maps data in open formats by the end of 2015.[11] In 2012, the **UK** Cabinet Office released a white paper outlining its vision for open data, including a schedule for openly releasing high-value datasets from various departments (UK Cabinet Office, 2012). In line with these international practices, the government of Poland could consider strengthening its commitment to being "open by default" by issuing a schedule for publishing high-value datasets and creating prioritisation mechanisms for future releases. This would help move towards a more proactive disclosure of OGD.

The **United Kingdom** has made considerable progress in releasing data for economic and social innovation, convening private sector stakeholders to prioritise datasets for release, offering funding for data-driven start-ups, and hosting a variety of hackathons and other events to promote data use. The UK Cabinet Office has instituted feedback mechanisms with private sector stakeholders through the Open Data User Group (ODUG), an independent advisory group representing data users that provides recommendations on funding for open data initiatives and that conducts public consultations to identify and prioritise datasets for open release.[12] The ODUG has also released a set of 50 case studies of businesses that make extensive use of open data, in an effort to demonstrate data demand to agencies and spur more innovative business ideas in the private sector (Cabinet Office, 2014). The non-profit Open Data Institute (ODI) also

works to promote open data release within the government and innovation in the private sector, convening experts, publishing open data use case studies and offering training courses.

In the **UK**, public and private sector efforts have been made to engage the developer community directly. The Department for Business, Innovation and Skills has tried to spur open data innovation through its Technology Strategy Board. The board operates an open data innovation voucher programme, whereby start-ups can receive grants of up to GBP 5 000 (USD 8 300) for open data consulting and services.[13] The Open Data Challenge Series, administered by the Open Data Institute and innovation charity Nesta, hosts challenges to encourage open data innovation in the private sector and offers GBP 400 000 (USD 660 000) in prizes annually. Finally, local and regional governments have been proactive in engaging with developer communities to promote open data innovation. Agencies have hosted hackathons and challenges around issues such as mental healthcare, flooding and food security, and new events are regularly announced.(Castro, D. 2014).

Increasing data accessibility and usability

Ensuring data accessibility is key to support data usability by all (see also Chapter 3). Metadata standardisation for all datasets, publication of a machine-readable data catalogue or inventory of both released and to-be resealed datasets, use of open licenses and the fostering of an "open by default" culture are some of the measures adopted by OECD countries to promote data quality which enhances accessibility. A data inventory can help citizens and external evaluators determine how much of all data has actually been made open. Without such an inventory, it is difficult to get a clear picture of a country's performance on releasing data. Similarly, standards can increase the interoperability of open data activities across multiple jurisdictions. Possible areas for standardisation include licensing, metadata, file formats, key datasets and domain-specific standards. Lack of standardised metadata means, for instance, that datasets do not always carry a metadata field specifying the license under which the data can be used.

Even if OECD countries are making significant efforts in this sense, many countries are still offering many datasets in the proprietary .viz or .shp file formats, which are generally used for mapping and other visualisations. Both formats can be opened and manipulated with non-proprietary software. However, offering data in fully open formats can ensure that the data will be usable without restrictions indefinitely. In addition, it is important to provide an easy way to determine how many datasets are available only in non-machine-readable or non-open formats. Similarly, having a large number of different licenses discourages re-use because users unfamiliar with a particular license may feel uncertain about what they can do with data that carries it.[14]

The **United Kingdom** has been a leader among OECD countries in ensuring its public data is usable by all. The Open Government License, first published in 2010, permits free and unlimited re-use with modification, subject only to attribution.[15] The license covers approximately three-quarters of published datasets on data.gov.uk and is widely used by English and Welsh local authorities in addition to federal agencies.

Canada has made considerable efforts in advancing data usability, particularly in licensing efforts. The federal government adopted the UK-developed Open Government License in 2013, which allows for data modification and re-use freely and without limits beyond attribution.[16] The license has since been adopted by three provinces and several

municipalities (Francoli, 2014). Canada's national data portal is available in both English and French. The federal government also began using its updated Web Experience Toolkit, which provides modular components for websites that are accessible for people with disabilities, in the data portal and other information sites in 2013.[17]

Over the past decade, **France** has developed its open licensing laws for public data. Order No. 2005-650 modified the 1978 law to establish that public information is freely re-usable.[18] In 2010, the French Ministry of Justice developed an open license pursuant to this order. To sustain its overall efforts to ensure that its data is usable by all, France has committed to making its open data available under the "*License Ouverte*", an open license that meets internationally accepted guidelines and requires only attribution on the part of the data user.[19] The vast majority of the datasets on data.gouv.fr carry this license or another open license. However, the license is stricter than open data licenses in many other European countries, such as Italy and the United Kingdom, as it forbids data users from "deteriorating" the contents of the information or changing the meaning of words.

Box 4.4. **Licensing and copyright choices by selected OECD governments**

- **Denmark:** It is recommended, but not mandatory, to use the standard public sector licence for all public sector information. The Danish PSI Act allows no restrictions on re-use beyond attribution of the source, which implicitly imposes the use of CC0, CC-BY or an equivalent license.
- **France:** The Creative Commons License CC-BY was adapted to France's PSI Law, resulting in the "Open licence" ("*Licence ouverte*"). It is compatible with CC-BY, ODC-By and the United Kingdom's Open Government License (see below).
- **Germany:** A national license was developed and is recommended for public sector use. It is broadly based on CC-BY, i.e. requires only attribution of the source.
- **Korea:** The government requires use of the Open Data Commons Attribution (ODC-By).
- **Mexico:** In its draft open government data strategy (version of April 2014)[1], the Mexican federal government proposes the use of a dedicated license. The detailed terms of the license are still being developed.
- **New Zealand:** A custom "NZ Government Open Access and Licensing framework (NZGOAL)" guides data providers in their licensing decisions. Creative Commons licensing (CC-BY) is recommended, but individual instances might require exceptions as outlined in a decision tree provided for that purpose.[2]
- **United Kingdom:** All data are released under an open licence created specifically for that purpose, the "Open Government License (OGL)". Although tailor-made for re-use of UK public sector information, the OGL license is compatible with the Creative Commons Attribution License (CC-BY) and the Open Data Commons Attribution Licence (ODC-By).

Notes: 1. See: http://bit.ly/pnda-borrador. 2. See: http://ict.govt.nz/guidance-and-resources/information-and-data/nzgoal/decision-tree.

Occasional technological and cultural barriers, including legacy IT systems' inability to produce data in machine-readable formats and some government departments' reticence to release data, have sometimes stymied further progress in releasing open data by default. Some current efforts squarely target these barriers. For example, in

February 2014, the **UK** Cabinet Office announced about GBP 1.5 million (USD 2.5 million) in funding toward projects related to open data in government, including one project with the explicit goal of advancing a culture of "open by default" by providing open data training to public servants (Savory, 2014).

In order to increase data accessibility, an increasing number of governments is commuting to a principle of "open by default". **Italy** was one of the earliest adopters of the "open by default" principle. Decree No. 179 of 2012, which applies to all national agencies in Italy, established the principle for disseminating all public information (Menapace, 2014) The decree also introduced an explicit policy of "open by default", stating that agencies must justify failing to publish data or using any licenses or data formats other than open ones. The decree also established a new Agency for Digital Italy, which facilitates information sharing across agencies and is specifically charged with promulgating open data standards.

The **US** government has made a strong commitment to the principle of openness by default. In 2013, President Obama's Executive Order on Open and Machine-readable Government Information, and the Office of Management and Budget's memorandum on open data policy formally introduced the principle of "open by default", requiring agencies to begin releasing data in open and machine-readable formats, and offering guidance for agencies to implement open data initiatives (The White House, 2013; Executive Office of the President, 2013). The executive order explicitly contains language calling for open data to be "the new default" for government information. To help agencies rapidly expand their capabilities to be open by default, the White House launched the project "Open Data" in 2013 as a collection of resources including code, case studies and standards information.[20]

Box 4.5. **The United Kingdom's approach to open by default**

The United Kingdom has created four non-binding commitments to open by default. First, the 2012 Public Data Principles state that public data should be open without caveat or exception. Second, the Secretary of State's 2013 Code of Practice, which provides guidance for public authorities on handling Freedom of Information Act requests, reinforced this sentiment, noting that authorities releasing data under the act must, as far as is reasonably practical, provide it in a machine-readable format, with the UK Open Government License as the default licensing model. Third, the Information Fair Trader Scheme, a standards-setting body at the National Archives that public agencies can voluntarily commit themselves to, recommends that most government information should be made available free of charge or at marginal cost. As of January 2015, 18 public bodies, including major data holders such as the Met Office, the Companies House, the Environment Agency and the Ordnance Survey, had joined the scheme. Fourth, the Cabinet Office's 2012 Open Standards Principles for software interoperability and data formats state that government bodies must require IT solutions that comply with open data standards.

Source: National Archives (n.d.b), "Open Government License for Public Sector Information,", www.nationalarchives.gov.uk/doc/open-government-licence (last accessed on 20 August 2014).

Leveraging improved data usability to change public service delivery modes

This chapter mentioned earlier how OGD provides a massive opportunity for a shift in governments' approach to service delivery. Governments operate primarily with a "retail" approach, i.e. direct delivery of goods and services to citizens and business, but increasing the "wholesale" approach, i.e. partnering with distributors, channels and other

intermediaries, is as essential (Chopra and Sinai, 2015). Government websites, institutional Twitter accounts and emails are all examples of retail digital services where the government is directly reaching out to citizens to provide information or transactions. Opening up data for intermediaries to be able to analyse the data, crunch it and incorporate it into useful products and services is an opportunity to scale the "wholesale" of digital services which is still untapped in many OECD countries.

Application programming interfaces (APIs) are how modern Internet software and apps talk to each other, allowing data to be shared across boundaries. Building and mainstreaming useful APIs is key to promoting a smarter and more efficient government using low cost and already existing infrastructures. Here are some examples of APIs in the **US** federal government:

- the Federal Aviation Administration provides travel websites and mobile apps with live airport status and delay information through its Airport Service API[21]
- the Pillbox API from the National Library of Medicine powers third-party mashups that serve consumers who need to quickly identify an unknown pill[22]
- the Sunlight Foundation's "Scout" project consumes the Federal Register API[23] to provide alerts and notifications for formal government action.

In particular, public read-write APIs (i.e. transactional APIs that submit data back to the government from external apps and services) represent an unspoiled opportunity to allow institutions and companies which are already assisting citizens to step up and help better serve particularly the underserved populations. These existing organisations can extend the reach of public institutions and thus allowing them to better fulfil their mission.

By adopting a "wholesale digital strategy" approach through open data and APIs, the US federal government intends to more effectively partner with local government, non-profit organisations and businesses to better serve the American citizens by spreading its reach and helping address some core challenges. The Department of Education has, for instance, committed to explore an API and OGD-led digital strategy at a 2014 White House Education Datapalooza. The Departments of the Interior and Agriculture are also seizing this opportunity, asking for input about how to open up data and booking systems for federal parks and hosted the myAmerica developer summit in April 2015. Entrepreneurs have responded for the government to take a "wholesale" digital approach so innovators can build new apps and services to help Americans explore the outdoor opportunities.

Many governments, such as **France**, are making a concrete commitment to releasing data in bulk, not simply through public APIs. A strong commitment to releasing bulk data can be a boon to start-ups capable of making use of large amounts of government data (Kin-sing Chan, 2014). Without offering bulk downloads users are restricted in the range of applications they can create, and without API access, less experienced users could find it too difficult to work with government data.

Increasing data meaningfulness

Insufficient data quality may reduce re-use opportunities and increase the cost of accessing and interpreting data. The quality of data makes data releases more popular for re-use both among data producers themselves (governments) and data consumers. Disclosing data without the proper data quality control may jeopardise dataset re-use and negatively affect civic participation, collaboration creativity and innovation. Legal and

technical openness of datasets is not sufficient by itself to create a healthy re-use ecosystem. Poorly documenting datasets and lack of data-cleansing activities represent a significant proportion of the effort necessary to support OGD re-use.

Therefore, increasing the meaningfulness and usability of data also implies managing data to ensure quality, both intrinsic and contextual, i.e. both in the way they are represented and in relation to their potential usage goals. This includes the fact that data can be easily accessed, queried, processed and linked. Problems related to data aggregation or lack of integration require extra efforts and costs in merging and/or comparing data, which could be easily avoided by achieving better co-ordination between data holders enabled by good data quality. The problem of poor data quality becomes even more relevant if we consider the increasing volume of open government data released by governments.

Box 4.6. **Open government data-enabled wholesale digital strategy for service delivery in the United States**

Free grants and low-cost loans are an important strategy to help Americans afford university, as is simply filling out the Department of Education's Free Application for Financial Student Aid (FAFSA) in order to help orient students toward four-year university degrees. In fact, Indiana researchers summarised the academic literature by saying "the bulk of financial aid studies indicate that financial aid in general is likely to increase college access, choice and subsequent persistence." According to Mark Kantrowitz, publisher of FinAid.org, over 2 million students qualify for Pell Grants but do not apply, and those students tend to disproportionately attend two-year post-secondary institutions rather than four-year programmes.

The federal government's strategy to increase the number of FAFSA applications has been primarily retail – redesigning the website, streamlining the form, improving the user experience and using First Lady Michelle Obama in a national call-to-action campaign that includes a FAFSA Completion Challenge, online videos and visiting classrooms to encourage students to fill out the FAFSA.

But what if the Department of Education employed a wholesale digital strategy as well? Suppose the department builds a public, read-write API for the FAFSA. Vetted organisations could build applications that collect student and parent information and securely submit it to the Department of Education. For example, the LA Unified School District, KIPP Schools and after-school non-profits all helping immigrant communities could reach students that are currently not applying for financial aid. The addition of a wholesale layer to the FAFSA lifecycle would allow institutions and companies which are already assisting students to step up and better serve the underserved student populations, similar to what TurboTax and H&R block does for the IRS. These existing organisations can extend the reach of the Department of Education, allowing it to better fulfil its mission.

Source: Chopra, A. and N. Sinai (2015), "Wholesale government: Open data and APIs", 9 April, https://medium.com/@ShorensteinCtr/wholesale-government-open-data-and-apis-7d5502f9e2be.

Frameworks to evaluate data quality normally look at the following attributes: data completeness, compliance, traceability, consistency, timely updates, compliance and understandability, accuracy (Ubaldi, 2013). Data integration and data quality control processes to manage data originating from various sources are all good alternatives. Some of the software platforms used by the OECD allow data quality checks to be performed before releasing data. This is the case of the Comprehensive Knowledge Archive Network (CKAN), for example, which uses Open Refine extension (Iemma et al., 2014). To improve data accessibility and usability by improving data quality on the portal countries like **Italy** and the **United States** have implemented, a data harvesting system

enabling the portal to automatically consolidate datasets published on local and regional data portals and offering them on the national portal.

Improved quality should result in increased user satisfaction, an increase in the number of people using data and ultimately an improved mission outcome. By making data available in good quality, governments can decrease the cost of re-use and thus free users' resources that can be channelled to foster value-added services.

In Poland, interviewees expressed concerns on data quality in terms of timeliness of updates for example, which limits the possibility of doing historical analysis. Poor quality of health-related data have apparently excluded Poland from large databases and assessment exercises carried out by the World Health Organization.

Mechanisms for public engagement in data re-use to spur value generation

National agencies are engaging more and more with the developer community, committing to "actively participate" in activities such as hackathons, partnering with private sector organisations on hackathons and app contests, as well as holding consultations with the private sector around data demand.

The **Canadian** government has made considerable efforts to organise initiatives to encourage the public to use its data for innovative new applications and to engage with individuals interested in developing applications based on government data. The Open.canada.ca portal's "Developer's Corner" provides comprehensive support and documentation for developers, as well as plain-language starter guides for the public, including thorough instructions on using APIs in multiple programming languages and visually aided explanations of different data formats.[24] In the spring of 2014, the federal government hosted its first countrywide hackathon, the Canadian Open Data Experience, in which over 900 civic hackers participated.[25]

Data re-use within the Polish administration

Creating a critical mass of data re-users and spreading information on good practices is important to foster value creation. There are interesting cases of data re-use across the Polish administration and building on these examples to spot "champions" that can help create a culture of re-use for value creation is important. This section provides information on some of the good examples that the Polish government should leverage to move the OGD agenda forward.

The Central Office of Prevention for Corruption, the central body subordinated to the Prime Minister tasked among others with combating and preventing corruption affecting the interests of the state, provides a good example of efforts to increase data accessibility and availability. The office uses all available channels to enable access to data and to get data under confidentiality conditions. In order to spur data re-use also to increase its value for the administration, it has a special dedicated unit to analyse forensic data daily, and a special dedicated unit to transfer key data and information to the Prime Minister's Office to improve policy making.

The National Institute of Public Health[26] is a research entity associated to the Ministry of Health but financed by the Ministry of Research. It is responsible for monitoring the status of the Polish population in relation to health (e.g. infectious diseases analysis, environmental health and public health). The only data it can disaggregate are mortality data and discharges data on hospitalisation. Data on hospital discharges for the general population are being sent to this institute with no personal information and this has limits

as they cannot link and match data (e.g. on the same person that was hospitalised more than once). The institute uses these data for carrying out analysis and publishing indicators on hospitalisation for age groups, diseases, etc. However, it does not have disaggregated data – it does not disseminate the data on individual hospitals as the statistical institute does not allow it to publish data that is produced by the public sector. The institute counts on receiving EU funds to support IT development that will allow for improved data management (e.g. data linkages and data analysis, for example to link data to personal identification numbers) and be able to use much of the available data to get full benefits. Research institutes in Poland are under financial constraints, and are not entirely financed by the government. They auto finance themselves by selling products and expertise based on the data they own. They produce knowledge that they make users (e.g. insurance companies) pay for. Hence they are quite reluctant to give out data for free. However, the potentially interested users of these datasets, like physicians, which is in line with the overall trend in the Polish society, do not see the value of using the data to improve policy making, for evaluating programmes, etc. Therefore, releasing the data is just seen as a burden without associating importance or potential benefits to the disclosure.

The Department of Analysis and Strategy within the Ministry of Health provides a good example of an actor from within the public administration which is aware of its potential as a data prosumer. The department currently conducts predictive analytics based on the data received from the National Healthcare Fund, e.g. calculating how many cases of cancer are in Poland to make some preliminary analysis based on the data. Platform P1 is a specific platform containing all key health information and data and enabling analysis (e.g. e-referrals, data on ambulatory care, hospital care, medicines) from the national healthcare information system. P1, P2, P3, P4 will also connect the pharmacies and pharmaceutical companies to support better policy making in terms of medicines/drugs and to help audit the whole system of healthcare service delivery. The intention would be to move towards making more data available as open data to be able to show data on hospital performance (without disclosing financial data) and to enable research institutes to carry out research and to support better evidence-based policy making. However, the national Law on Statistics restricts the publication of data and statistics on health thus diluting efforts aimed at fostering OGD (see also Chapter 3). The Ministry of Health tried to overcome this by using voluntary disclosure of data. Even though the department is quite active and has an OGD agenda, in general there is no broadly shared OGD agenda in the sense of opening up healthcare-related data to create a "data market" supportive of better individual decisions, and there is not much proactive data release. Data are mainly released upon request.

Similarly, the Ministry of National Education (MNE) and the Examination Commission seem to hold data with high value potential. Data collected by the MNE is passed on to the Central Statistical Office (CSO) and the majority of these data are available on the CSO portal in the repository on the local data disaggregated at the municipal and local level. The MNE publishes information on the CRIP, on its own website and on the CSO portal. It is obliged by the Act on Public Statistics to give the CSO the data to be published by the CSO as statistics (i.e. aggregated data). It must provide 15 datasets to the CRIP according to law. Much of this information is the same, although it is presented differently based on the assumption that the users are different. The Union of Polish Cities, for example, submits requests for more specific data and information used for its different published studies. The Examination Commission owns the data on final results of exams – e.g. grades, drop outs, graduates – but they are yet not

released or published as this requires special analytical tools to process that the ministry does not seem to have. There are no restrictions that impede the publication of these performance data that could deliver high value through their re-use in the domain of education policies. Additionally, there is no further research and thinking on potentially high-value data to be collected as part of the operations of the MNE and this seems to be due to limited resources as there are not too many people dedicated to publishing data. There is a team of six people who are data gatherers and analysts. Data analysis is thus done on an *ad hoc* basis, to address specific policy makers' requests; there is no dedicated group of analysts that shape policy making.

Future efforts could focus on integrating data coming from the inspection offices of the schools that do not have a single system at the moment. Currently there is no integration between the Ministry of Education's system and the inspection offices.

The Institute of Educational Research uses public education data produced by the Central Examination Committee plus eight local examination offices to compute an indicator to track secondary schools' performance (http://ewd.edu.pl/en – EVA Calculator for schools, etc.).[27] They have financial data and supply-side indicators that can be used for the studies provided that they protect individual students' and/or teachers' confidentiality. Most of their work is on the secondary data level and they do the primary analysis. They are working on developing their own data repository. So far the institute has focused on teachers but future efforts will concentrate on combining data from the registers on students from tertiary education to understand the situation of graduate students (university data) with social insurance data and using a third party to anonymise the data. So far these attempts appear to have been slowed down by the Privacy Protection Office (for data protection issues), due to a lack of resources and "extra burden". Moving ahead in this direction would be a strategic decision to support better evaluation of the labour market and thus use public data in cost-effective ways.

The Ministry of Economy also provides a good example of awareness of the relevance of data to support evidence-based policy making. Twice a year it sends a survey to small and medium-sized enterprises (SMEs) to understand their needs and trends and inform them of policy making. The survey is limited because the sample is 6 000 SMEs and microenterprises, but the response rate is only 5%. The Chamber of Commerce holds data of high relevance for better evidence-based policy making in areas strategically important for the ministry but at the moment it only makes data available for a fee. The Ministry of Economy has five datasets on the CRIP, and which are in its own opinion the most important ones; all other relevant data or analysis are available on its website. This is a common situation for most actors within the Polish administration. For the CRIP to be seen as a strategic "platform", that enables collaboration and spurs data re-use to create value, the fragmentation across various systems must be overcome.

The Ministry of Culture and National Heritage also provides an interesting example of OGD. The information on the financing of the Jean Paul II museum is made available on the ministry's website as html. This has contributed to increasing transparency on public financing and has led to some interesting discussions. This is a good example of a case of OGD which is not even perceived of as open data and is in line with the general perception that no real OGD culture or awareness exists within the administration. As this example shows, OGD "in action" is already happening.

Finally, there are also important examples of re-use of data produced by the Geodesy Office (such as elevation data), which are supporting public actors in taking higher quality and more accurate decisions at a lower cost:

- The Gdansk Development Bureau uses elevation data in generating 3D models and drawing up spatial development plans. Data obtained in airborne laser scanning allow the locations of new buildings in Gdansk to be set in an effective way, by adjusting the architectural concept to the surrounding structures. Additionally, these data help raise awareness among the city's inhabitants concerning the consequences of the location of new buildings. Having access to advanced 3D visualisations of individual structures, inhabitants have the possibility to participate actively in the development of plans and the decision-making process concerning the location of planned works. Urban space planners at the Gdansk Development Bureau, working with precise elevation data, gain an innovative tool that enables it to communicate proposed concepts to the society in a quicker, mindful and therefore effective manner, which results in a quicker decision-making process related to the creation and implementation of local spatial development plans.
- Another interesting example is the use of airborne laser scanning data within the framework of the project "Archaeological restoration of memory of the Great War: Material remainder of life and death in trenches on the eastern front and transformations of the post-battle landscape in the area of the Rawka and Bzura rivers (1914-2014)" (carried out under the patronage of the Institute of Archaeology and Ethnology of the Polish Academy of Sciences, financed by the National Science Centre). This project also contributes to developing historic awareness and understanding among the inhabitants of districts where traces of the wars of the 20th century are still visible. Part of the local community would be able to use the research results for the development of local cultural heritage tourism. On the other hand, if the results of the research are approved by the heritage monuments protection office, further decisions concerning the objects of the research may be beneficial for the entire society. These benefits might include official protection or educational activities related to the memorial sites, and also setting out educational paths and cultural heritage trails.

Decisions taken on the basis of precise elevation data constitute an important part of the process of defining the strategy of archaeological research and determining its spatial range. Based on the visualisations prepared using elevation data, researchers can record and explain the processes related to the transformation of the cultural landscape at the archaeological site (including stratigraphy). Persuasiveness of precise elevation data foster setting new interdisciplinary fields of research made by anthropologists, cultural experts, landscape and memory researchers.

Building capacities for value creation

The focus of the Ministry of Administration and Digitisation up to now has been on developing the CRIP and on fostering the institutions to develop their capacities, whereas efforts on fostering the re-use of data have been limited. Nevertheless, some initiatives to create a more active community of data consumers to support data re-use have taken place recently. In November 2014, the Ministry of Administration and Digitisation organised a contest and provided funds for data re-use to develop apps. One app was developed to provide information on the parliament and to enable public consultation on draft laws. Another relevant app provides information on kindergartens.

Lack of adequately skilled and knowledgeable staff within the administration (e.g. people capable of doing modelling and predictive analytics) seem to be one of the main reasons hindering the further development of OGD. All tasks requiring additional resources and not seen as being core to the mandate of the organisation are not prioritised.

The National Health Fund, for instance, is one of the public entities that could play an important role as infomediaries/intermediaries as it has a great e-system for data collection and possesses a lot of relevant information.

Focusing on developing relevant skills and providing guidelines to civil servants are all essential efforts. For example, in 2012 the UK Cabinet Office published Public Data Principles, a set of guidelines for how national government agencies should publish open data, such as using standard features like machine-readability, open formats and open licenses (Farah, 2012). As mentioned earlier, the Polish government could use the CRIP to promote some examples of good data re-use and improve the availability of knowledge on relevant use, CVS, etc. This would help authorities save time having to explain the potential value which can be derived from OGD.

Expanding the tasks to support data-driven decisions, increase the use of new technologies (social media, mobile apps) in combination with OGD to address people's emerging requests, and changing expectations with the current structure and resources are all necessary steps to be considered by the Polish government. As in many other aspects related to OGD implementation, NGOs appear to have taken the lead in providing training in Poland. This partnership could be further explored by the Polish authorities.

Measuring progress and impact

The potential benefits of open data are considerable. A 2013 McKinsey Global Institute report estimated that open data could add over USD 3 trillion annually in total value to the global economy[28] (Manyika et al., 2013). Good open data policies are structured with milestones that can be used to evaluate the progress being made. Some cities, such as Chicago, produce an annual report to unveil information on value created out of OGD.[29]

Some government administrations, such as **Edmonton, Alberta**, have citizen dashboards that are highly specific, data-driven and business-owned. They have scorecards that show the underlying information behind them, with live updates, which show if an institution is doing poorly as much as if it is doing well. They are transparent about it, open about the failures as much as about the wins.

In addition to quantity, public administrations can use the volume of Freedom of Information Act requests they receive as a metric of success for open data. While this is a relatively new approach to measuring open data efforts, some state agencies, such as New York's Department of Environmental Conservation, have found that opening key datasets can substantially reduce such requests.

Certainly, there is broad recognition of the need to strengthen national and collective efforts to improve the capacity to measure impact and value creation.

Conclusions

In the years to come, governments will see three major shifts in terms of the demand for open data: 1. a call for a more proactive release of data; 2. growing demand to ensure data quality (with different implications for different datasets); and 3. a move towards a more demand-driven approach to data release, i.e. focusing on the datasets that people want. Actions focused on improving data availability, accessibility and re-use, that comprise factors such as data usability and data quality, will be essential to accommodate this shift. They are indeed *sine qua non* conditions for value creation.

This Chapter provided examples of measures adopted across the OECD to address these three dimensions and foster value creation. Most of these initiatives are driven by the growing sense of awareness of the need to create a critical mass of data re-users; and acknowledge the importance of spreading information on good practices to foster value creation.

There are interesting cases of data re-use across the Polish administration and building on these examples to spot "champions" that can help create a culture of re-use for value creation could help increase OGD impact. Although some initiatives to create a more active community of data consumers to support data re-use have taken place recently in Poland, continuous efforts will be required in the future for sustainable impact; and partnerships with NGOs can be further exploited to nurture the ecosystem of data re-users.

Expanding the tasks to support data-driven decisions, increasing the use of new technologies (social media, mobile apps) in combination with OGD to address people's emerging requests, and changing expectations with the current structure and resources are all necessary steps to be considered by the Polish government.

Notes

1. For more information see: http://datos.gob.es/sites/default/files/121001%20RED%20007%20Final%20Report_2012%20Edition_%20vF_en.pdf.
2. Canada, France, Germany, Italy, Japan, the Russian Federation (which exited the group in 2014), the United Kingdom and the United States.
3. For more information see Danish Enterprise and Construction Authority (2010).
4. See Abelson and Cohen (2014).
5. See Eaves (2010).
6. See Reuter (2014).
7. See: www.citygoround.org/apps.
8. For more information see: www.opendataphilly.org/dataset/philadelphia-police-advisory-commission-complaints (last accessed on 19 May 2015).
9. For more information see: www.opendataphilly.org/dataset/geographic-market-areas (last accessed on 19 May 2015).
10. For more information see the Open Data Promotion Consortium at: www.opendata.gr.jp/en (last accessed 5 March 2015).
11. For more information see Italy's "Self Evaluation of the Italian Action Plan," The Open Government Partnership.
12. For more information see: the webpage for the Open Data User Group at: www.gov.uk/government/groups/open-data-user-group (last accessed on 20 August 2014).
13. For more information see Technology Strategy Board (2012).
14. For more information see the webpage for the "Joint statement: Finally setting the standard to 'open'!", Not Your GovData, http://not-your-govdata.de/en (last accessed 3 November 2014).
15. For more information see National Archives (n.d.*b*).
16. For more information see Government of Canada (2015).
17. For more on this see Treasury Board of Canada Secretariat (2012).
18. For more information see the Répertoire des Informations Publiques du Ministère de la Justice at: www.rip.justice.fr/conditions_of_the_reuse_of_public_information_that_is_freely_reusable (last accessed on 5 March 2015).
19. For more information see "License Ouverte/Open Licence", at: https://wiki.data.gouv.fr/images/0/05/Open_Licence.pdf. For more on open licenses, see "Conformant Licenses", Open Definition at: http://opendefinition.org/licenses (accessed 5 February 2015).
20. For more information see Project Open Data (n.d.).
21. For more information see Federal Aviation Administration (n.d.).

22. For more information see: http://pillbox.nlm.nih.gov/developer.html (last accessed on 20 May 2015).

23. For more information see: www.federalregister.gov/blog/learn/developers (last accessed on 20 May 2015).

24. For more information see "Developer's corner" website at: http://open.canada.ca/en/site-structure/developers-corner (last accessed on 4 March 2015).

25. For more on this see "About CODE – Canadian Open Data Experience," Government of Canada, http://data.gc.ca/eng/about-code-canadian-open-data-experience (last accessed on 4 March 2015).

26. For more information see: www.pzh.gov.pl/page/?L=1 (last accessed on 20 May 2015).

27. The Director of the Examination Board is responsible for all exams for approximately 1.5 million students every year. They collect a lot of data from the students examination results as well as data on students and schools they belong to. They have the data that the schools use to register the students without the students' id number. The data is not available publicly – they just share data that are requested by regional governments dealing with funding and how this impacts exam results, with the Institute of Educational Research, foundations, etc. Before they share the data with anyone they anonymise it.

28. For more information see McKinsey & Company (2013).

29. For more information see Howard (2015).

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Annex A
Results from the OECD Survey of Polish Government Institutions

The data and graphs provided here are based on the responses received from national/central government institutions in the November 2014:

- Ministry of Infrastructure and Development
- GUGiK (Head Office of Geodesy and Cartography)
- National Library of Poland
- Central Statistical Office
- Head Office of the State Archives
- Ministry of Environment
- Ministry of National Education
- Public Procurement Office
- Ministry of Health
- Mazovian Voivodeship Office
- Ministry of Justice
- Ministry of Economy.

Responses were edited by the authors in order to harmonise style and language. Further to the above 12 institutions, the report benefited from responses received from Centrum Cyfrowe, NGO, the city of Warsaw and the city of Krakow. These responses were used in the analysis of the report but are not included in the data and graphs provided in this annex in order to maintain a focus on national/central government institutions.

Perceptions about status and potential for open government data

Figure A.1. **What does the term "open government data" mean to your institution?**

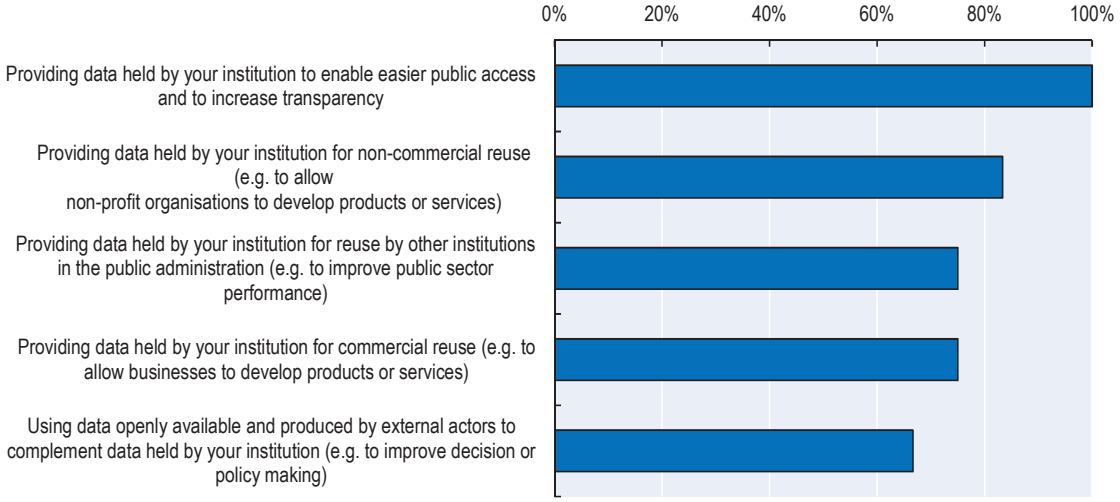


Figure A.2. **Which of the following types of data does your institution collect or produce?**

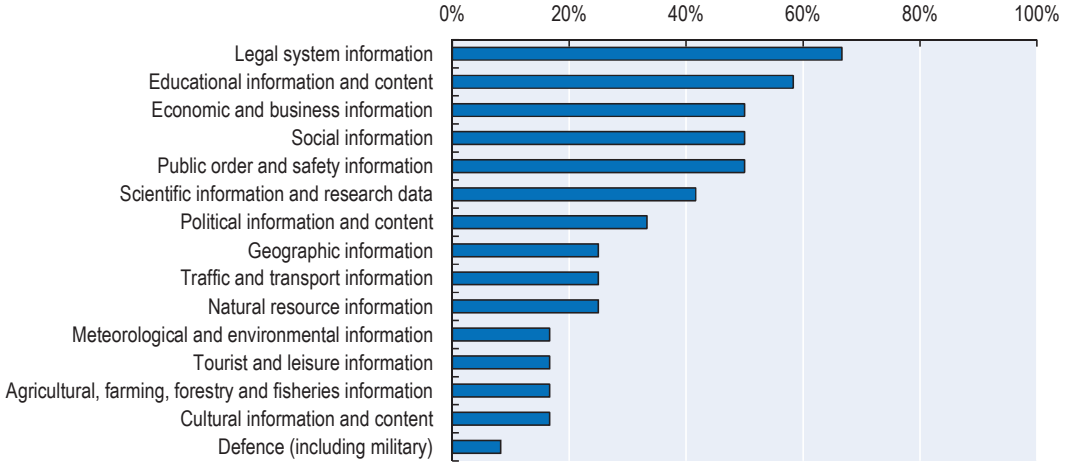
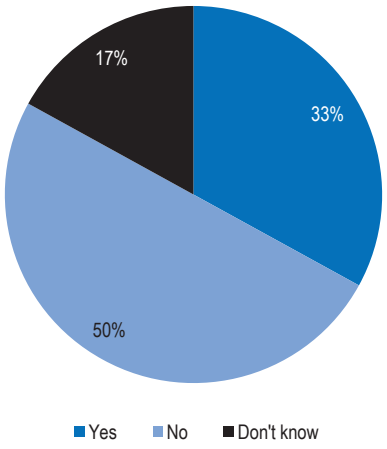


Table A.1. **Please provide five examples of the most important datasets held by your administration (regardless of whether they are made public or not)**

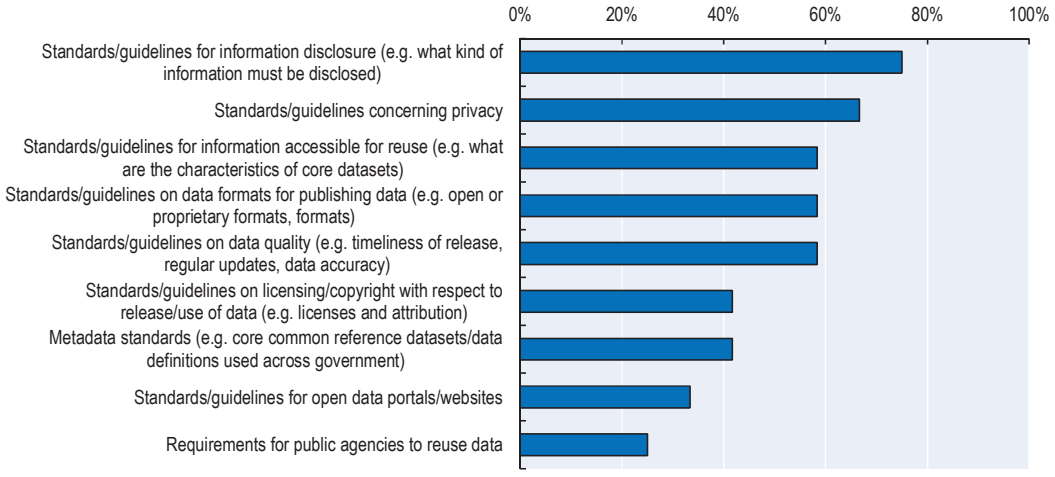
Central Statistical Office	1. National accounts (GDP) 2. Price index (CPI) 3. Labour market (employment and unemployment) 4. Industry, construction 5. Foreign trade
GUGiK (Head Office of Geodesy and Cartography)	Spatial information and geo-data are free of charge for the public administration and science/research institutions at: www.gugik.gov.pl/.
Mazovian Voivodeship Office	– Official Journal of Mazovioan Voivodeship – contains legal acts issued by Mazovian Voivode and self-government authorities from the Mazovia Region – main source of information of local law – System of Information of Hospitals – information on free beds and doctors present in hospitals' wards. Essential for the medical rescue system – Information on programmes in the scope of accomplishing public tasks – information for citizens and institutions on the realisation of programmes in the Mazovia Region and on the possibility of applying for them – Registers concerning social issues – Registers of decisions issued by the Voivode in the scope of his competence
Ministry of Economy	https://prod.ceidg.gov.pl/ceidg.cms.engine – public registry of polish companies https://insigos.mg.gov.pl/Glowna.aspx – economic information https://polska.trade.gov.pl/pl – information for exporters and importers www.mg.gov.pl – main website http://bip.mg.gov.pl – public information repository
Ministry of Environment	– State Environmental Monitoring: www.gios.gov.pl/ – Geological data gathered and maintained by the Polish Geological Institute: www.pgi.gov.pl/en/data-bases.html – Central Registry of Forms of Nature Protection (CRFOP) – *National Database of Greenhouse Gas Emissions and Other Substances*, maintained by KOBIZE – *Forestry Database*: www.bdl.lasy.gov.pl/portal
Ministry of Health	– Register of medical products – Register of reimbursed medicinal products, medical devices and food for special medical purposes – Register of pharmacies – Register of pharmaceutical wholesalers – Register of the entities performing therapeutic activity
Ministry of Infrastructure and Development	All data connected to European funds disbursed in Poland
Ministry of National Education	– Pre-school education – Number of disabled students – Number of teachers – Number of accidents at schools – Number of foreign students
Public Procurement Office	– Notices concerning public procurement – Legal opinions in the field of public procurement – Jurisdiction of the National Appeal Chamber

Figure A.3. **Does your institution have an official strategy or policy to better use data collected or produced by your institution?**



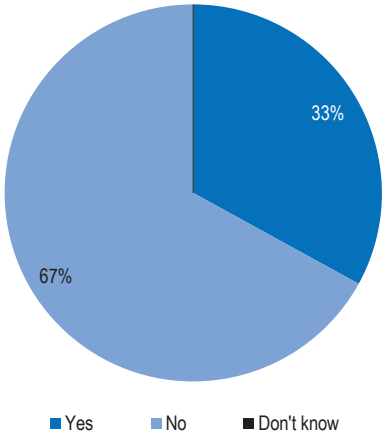
Yes	No	Don't know
National Library of Poland	Ministry of Infrastructure and Development	Public Procurement Office
Head Office of the State Archives	GUGiK (Head Office of Geodesy and Cartography)	Ministry of Justice
Ministry of National Education	Central Statistical Office	
Ministry of Economy	Ministry of Environment	
	Ministry of Health	
	Mazovian Voivodeship Office	

Figure A.4. **Which of the following do you use in your institution (either developed by your institution or used across government, e.g. as part of binding legislation)**



Capacities, drivers and challenges for open government data strategy formulation and implementation

Figure A.5. **Does your institution have a dedicated department or unit responsible for the overall management of data or statistics (production, collection and distribution; e.g. statistical unit)?**



Yes	No
GUGiK (Head Office of Geodesy and Cartography)	Ministry of Infrastructure and Development
Ministry of National Education	National Library of Poland
Ministry of Health	Central Statistical Office
Ministry of Economy	Head Office of the State Archives
	Ministry of Environment
	Public Procurement Office
	Mazovian Voivodeship Office
	Ministry of Justice

Figure A.6. **Are there any additional resources that your institution would need to enable the provision of data in open formats that facilitate re-use?**

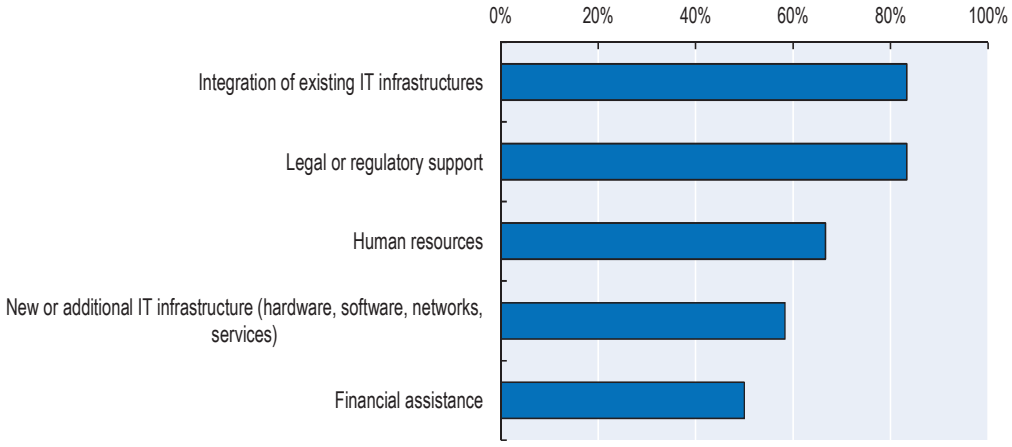
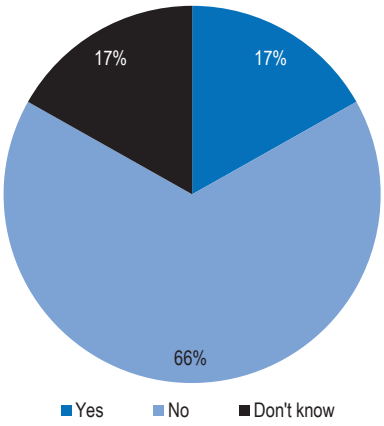
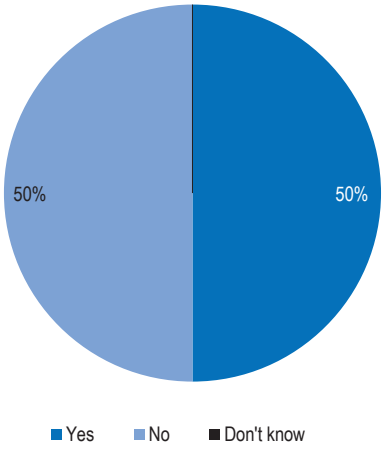


Figure A.7. **Does your institution generate revenues from the collection, production, analysis, sharing or publication of data?**



Yes	No	Don't know
Central Statistical Office	Ministry of Infrastructure and Development	Ministry of Environment
GUGiK (Head Office of Geodesy and Cartography)	National Library of Poland	Ministry of Justice
	Head Office of the State Archives	
	Public Procurement Office	
	Mazovian Voivodeship Office	
	Ministry of National Education	
	Ministry of Health	
	Ministry of Economy	

Figure A.8. **Do you have a department dedicated to "data analytics"?**

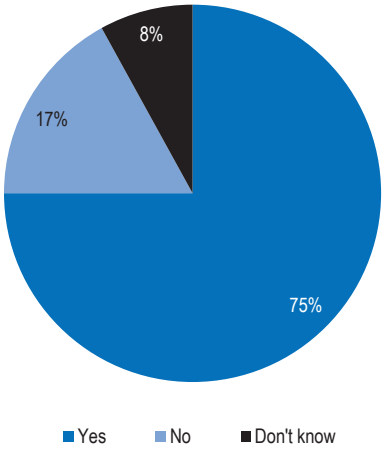


Yes	No
Central Statistical Office	Ministry of Justice
Public Procurement Office	Ministry of Infrastructure and Development
Ministry of National Education	National Library of Poland
Ministry of Health	Head Office of the State Archives
Ministry of Economy	Mazovian Voivodeship Office
Ministry of Environment	GUGiK (Head Office of Geodesy and Cartography)

Table A.2. **You indicated that you have a department dedicated to "data analytics". Is this the same department that is also in charge of data management?**

Yes	No	Don't know
Ministry of National Education	Ministry of Environment	Ministry of Health
	Public Procurement Office	
	Ministry of Economy	
	Central Statistical Office	

Figure A.9. **Do you provide training on data analytics to your employees?**



Yes	No	Don't know
Ministry of Health	Mazovian Voivodeship Office	Ministry of Justice
Ministry of Environment	GUGiK (Head Office of Geodesy and Cartography)	
Public Procurement Office		
Ministry of Economy		
Central Statistical Office		
Ministry of National Education		
Ministry of Infrastructure and Development		
National Library of Poland		
Head Office of the State Archives		

Figure A.10. **From your institution's point of view, how strong are the following individual driving factors for opening up data held by your institution?**

Average ranking; 0 = weak; 10 = strong

Figure A.11. **From your institution's point of view, how strong are the following specific barriers to opening up data held by your institution?**

Average ranking; 0 = weak; 10 = strong

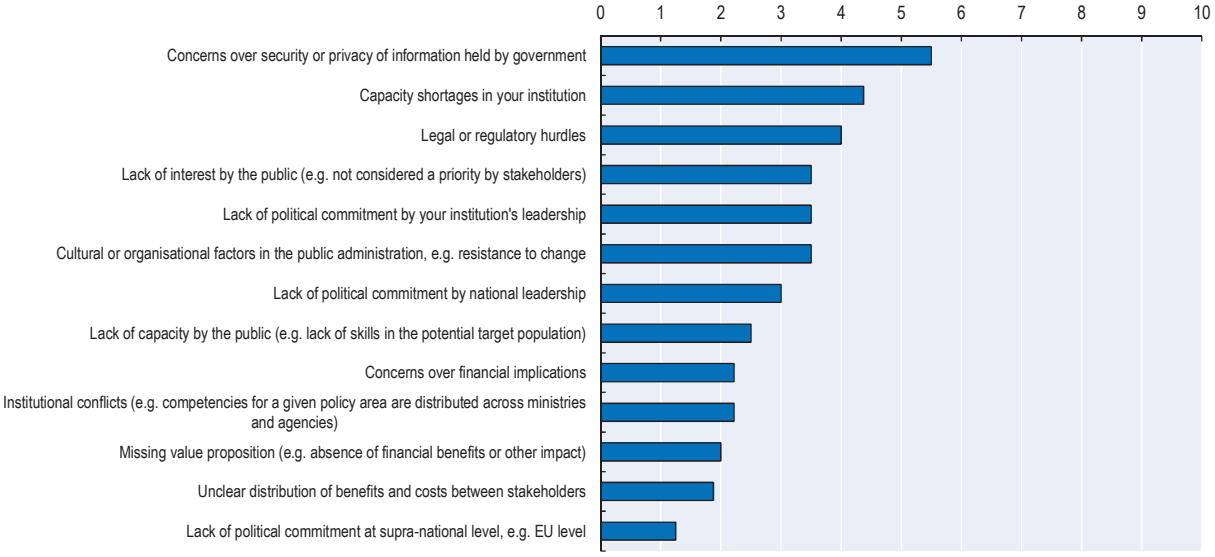
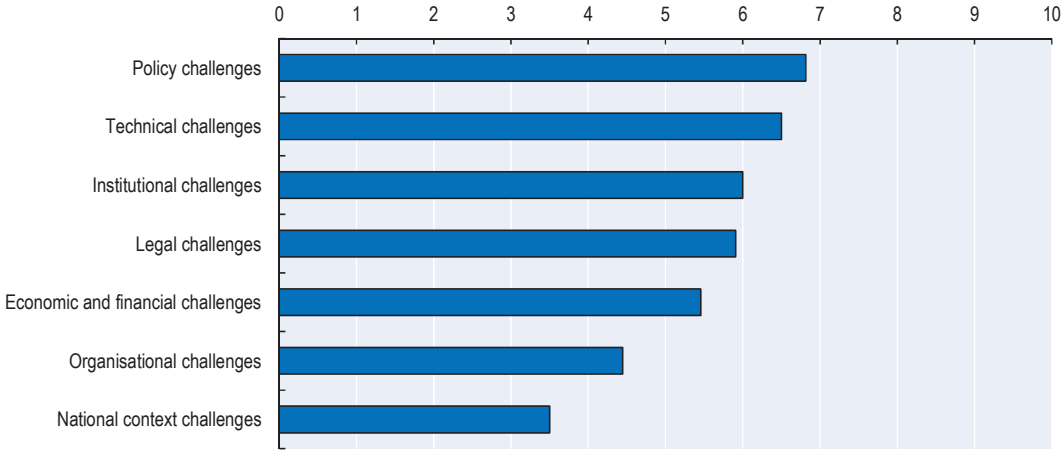
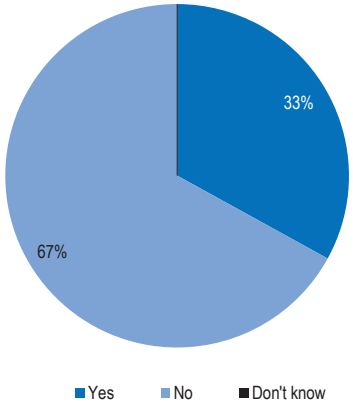


Figure A.12. **From your institution's point of view, how important are the following challenges for opening up data held by your institution?**



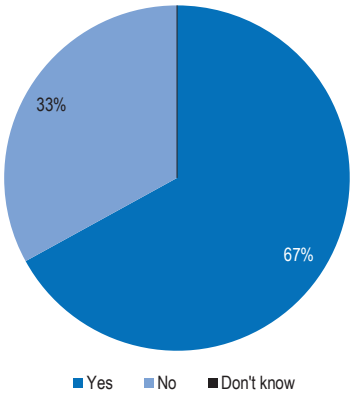
Generating value and creating an open government data ecosystem

Figure A.13. **Do you have a department or position dedicated to improving external re-use of data held by your institution?**



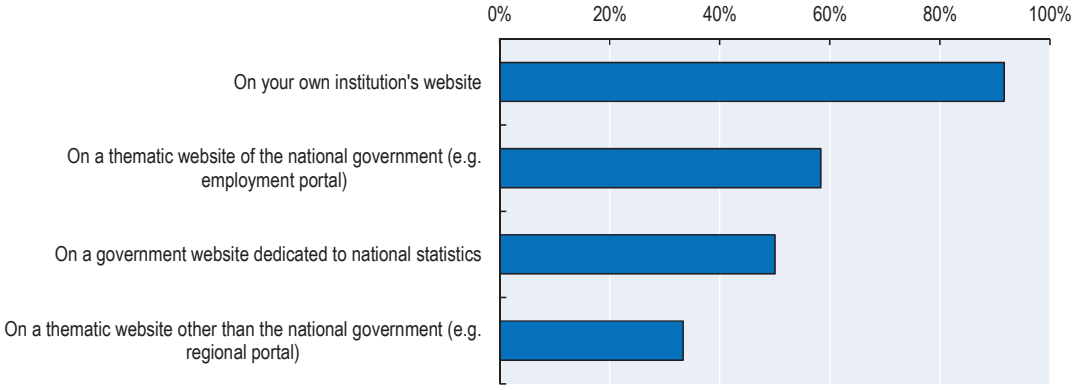
Yes	No
Ministry of Environment	Ministry of Justice
Ministry of Economy	Mazovian Voivodeship Office
Ministry of National Education	GUGiK (Head Office of Geodesy and Cartography)
Head Office of the State Archives	Ministry of Health
	Public Procurement Office
	Central Statistical Office
	Ministry of Infrastructure and Development
	National Library of Poland

Figure A.14. **Do you have specific mechanisms or processes to enable off-line public access to your data/information?**



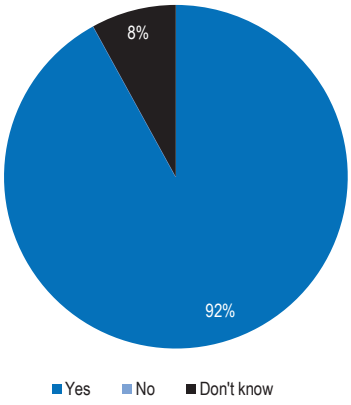
Yes	No
Ministry of Justice	Ministry of Health
Mazovian Voivodeship Office	Central Statistical Office
GUGiK (Head Office of Geodesy and Cartography)	Ministry of Economy
Public Procurement Office	Head Office of the State Archives
Ministry of Infrastructure and Development	
National Library of Poland	
Ministry of Environment	
Ministry of National Education	

Figure A.15. **Does your institution publish any of the data you collect or produce online?**



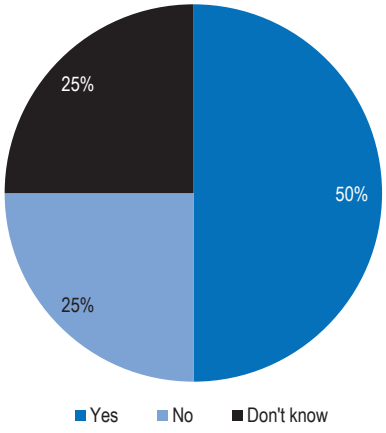
	Own institution's website	Thematic website of national government	Government website dedicated to statistics	Thematic website other than national government
Ministry of Health	Yes	Yes	Yes	Yes
Central Statistical Office	Yes			
Ministry of Economy	Yes	Yes	Yes	
Head Office of the State Archives	Yes			Yes
Ministry of Justice	Yes			
Mazovian Voivodeship Office	Yes	Yes		
GUGiK (Head Office of Geodesy and Cartography)		Yes	Yes	Yes
Public Procurement Office	Yes			
Ministry of Infrastructure and Development	Yes	Yes	Yes	Yes
National Library of Poland	Yes			
Ministry of Environment	Yes	Yes	Yes	
Ministry of National Education	Yes	Yes	Yes	

Figure A.16. **You indicated that your institution publishes data online. Is data provided in machine-readable formats?**



Yes	Don't know
Public Procurement Office	Head Office of the State Archives
Ministry of Justice	
Ministry of National Education	
Ministry of Economy	
Ministry of Infrastructure and Development	
Ministry of Health	
Mazovian Voivodeship Office	
GUGiK (Head Office of Geodesy and Cartography)	
Ministry of Environment	
Central Statistical Office	
National Library of Poland	

Figure A.17. **Is data provided as linked data?**



Yes	No	Don't know
Ministry of Economy	Ministry of National Education	Public Procurement Office
Ministry of Infrastructure and Development	GUGiK (Head Office of Geodesy and Cartography)	Head Office of the State Archives
Ministry of Health	Ministry of Environment	Ministry of Justice
Central Statistical Office		
Mazovian Voivodeship Office		
National Library of Poland		

Figure A.18. **Is registration required to access the data?**

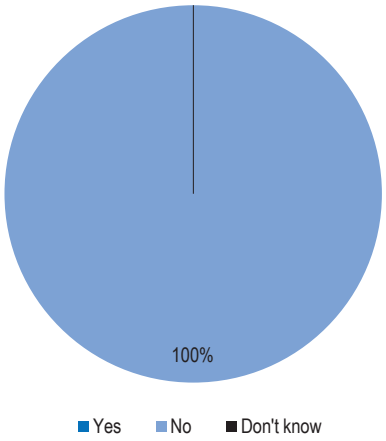
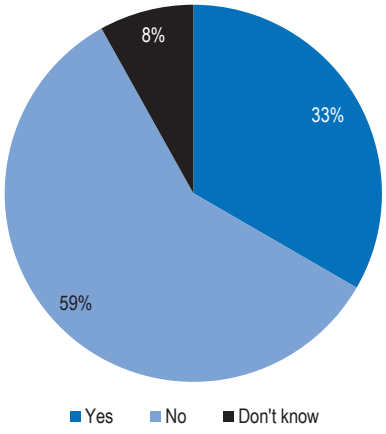
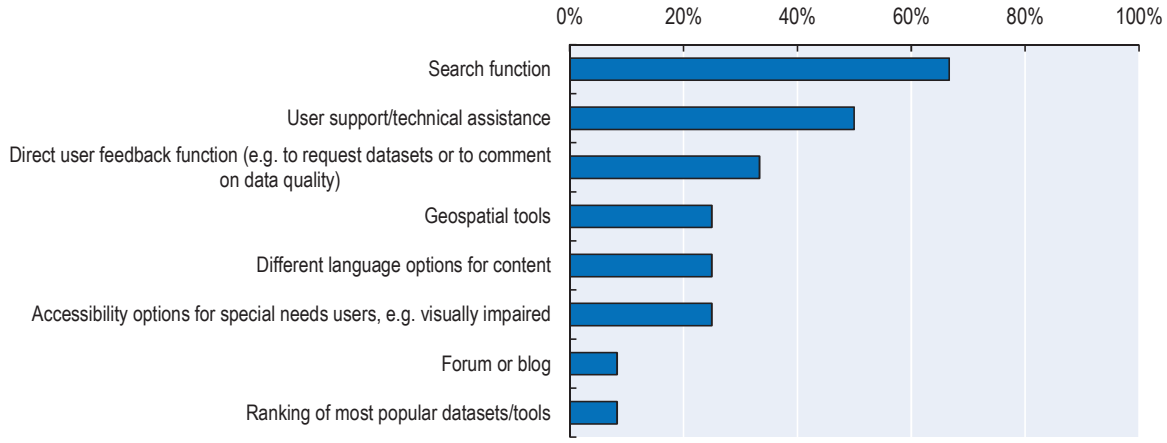


Figure A.19. **Do you provide application programming interfaces (APIs) for third parties to access the data?**



Yes	No	Don't know
GUGiK (Head Office of Geodesy and Cartography)	Public Procurement Office	Head Office of the State Archives
Ministry of Environment	Ministry of Justice	
Central Statistical Office	Ministry of National Education	
National Library of Poland	Ministry of Economy	
	Ministry of Infrastructure and Development	
	Ministry of Health	
	Mazovian Voivodeship Office	

Figure A.20. **What functionalities and features are available next to the published data?**



	Search	User support	User feedback	Geo-spatial	Language	Accessibility	Forum, blog	Ranking
Head Office of the State Archives								
Public Procurement Office	Yes	Yes						
Ministry of Justice	Yes	Yes	Yes					
Ministry of National Education	Yes							
Ministry of Economy	Yes	Yes						
Ministry of Infrastructure and Development		Yes						
Ministry of Health	Yes	Yes	Yes		Yes	Yes		
Mazovian Voivodeship Office								
GUGiK (Head Office of Geodesy and Cartography)	Yes			Yes	Yes	Yes	Yes	Yes
Ministry of Environment	Yes		Yes	Yes				
Central Statistical Office	Yes	Yes	Yes	Yes	Yes	Yes		
National Library of Poland								

Figure A.21. **Please indicate the licensing model(s) that applies to the data you publish online**

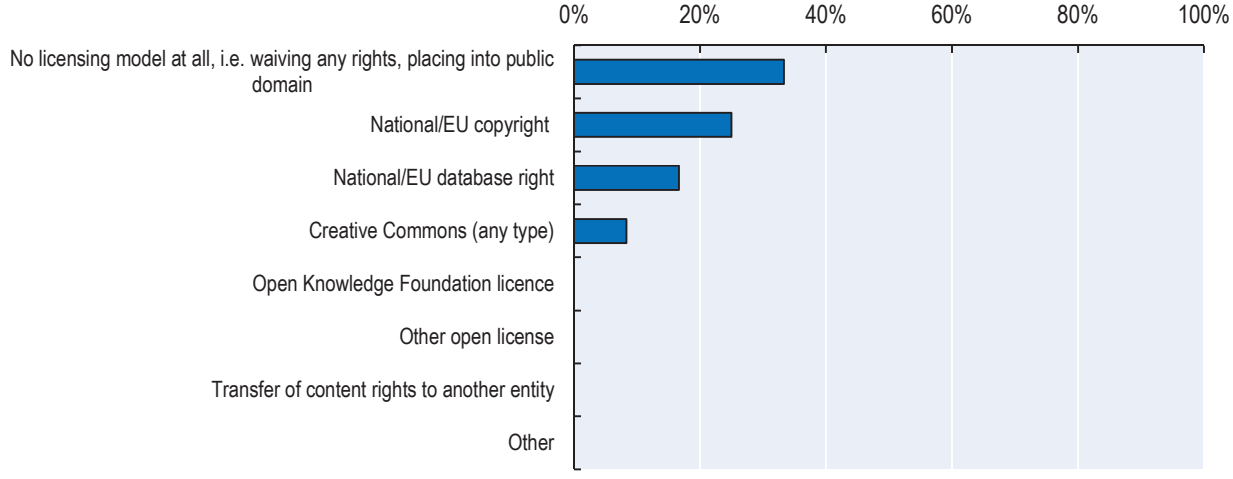


Figure A.22. **Which of the following licensing modes do you use?**

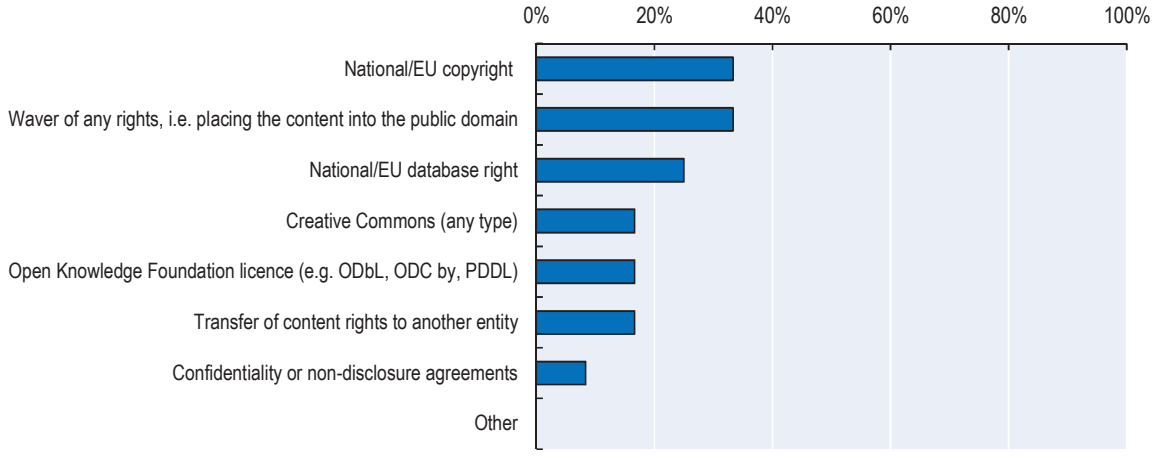


Figure A.23. **Which re-use conditions do you consider sufficient as a default case for public sector data?**

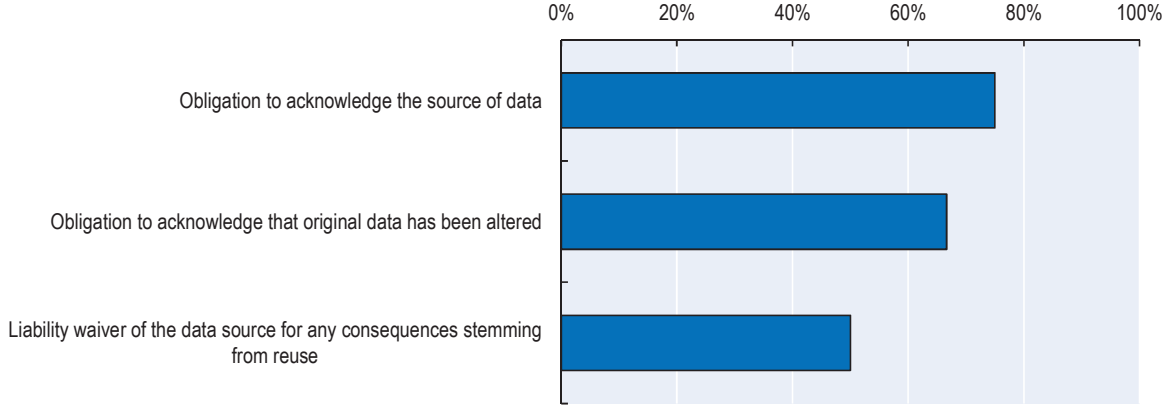
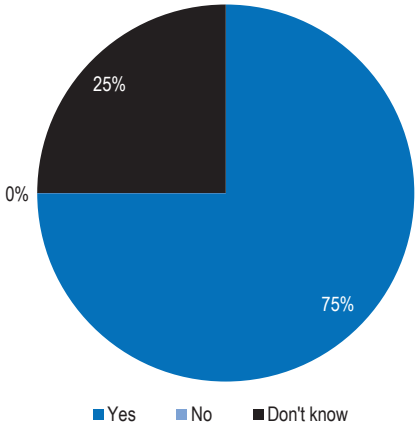


Figure A.24. **Has data held by your institution ever been re-used by external partners in their products or services, e.g. by businesses, education institutions or civil society?**



Yes	Don't know
Ministry of Health	Ministry of Economy
Central Statistical Office	Mazovian Voivodeship Office
Head Office of the State Archives	Ministry of Infrastructure and Development
Ministry of Justice	
GUGiK (Head Office of Geodesy and Cartography)	
Public Procurement Office	
National Library of Poland	
Ministry of Environment	
Ministry of National Education	

Figure A.25. **Can international licensing models (such as Creative Commons) or national licensing models be a basis for achieving interoperability at EU level?**

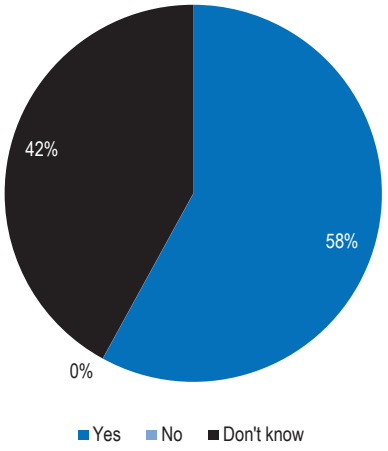
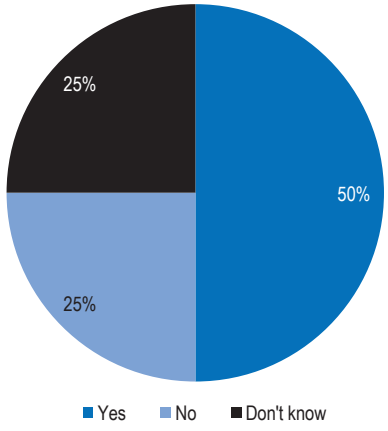
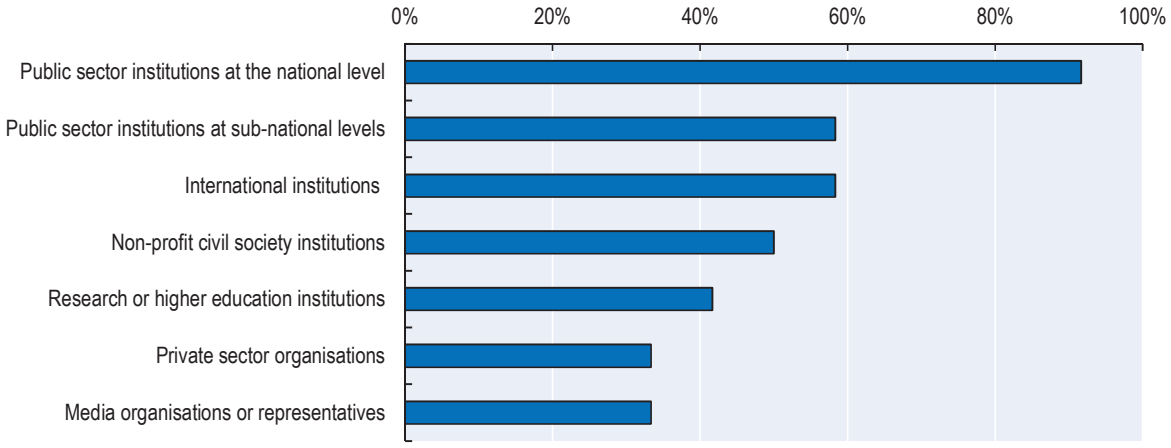


Figure A.26. **Do you consider it necessary to use different licences for commercial vs. non-commercial re-use of your data?**



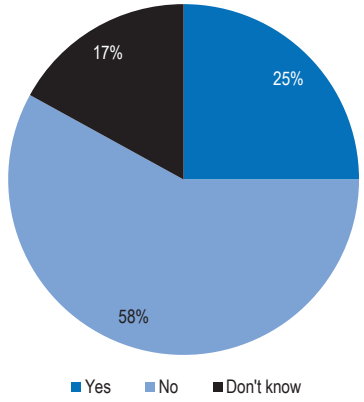
Yes	No	Don't know
Mazovian Voivodeship Office	Ministry of Economy	Ministry of Health
Ministry of Infrastructure and Development	Central Statistical Office	Ministry of Justice
GUGiK (Head Office of Geodesy and Cartography)	Head Office of the State Archives	Public Procurement Office
National Library of Poland		
Ministry of Environment		
Ministry of National Education		

Figure A.27. **Does your institution regularly partner with other institutions when it comes to collecting, producing or interpreting data?**



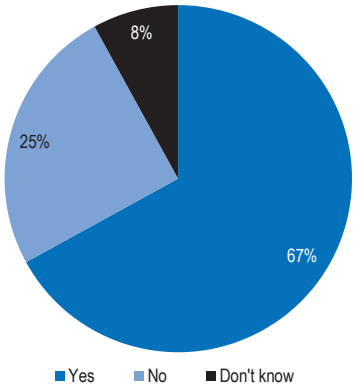
	Civil society	Higher education, research	Private sector	Media
Head Office of the State Archives	Yes			
Public Procurement Office				
Ministry of Justice	Yes			Yes
Ministry of National Education	Yes	Yes	Yes	
Ministry of Economy	Yes			Yes
Ministry of Infrastructure and Development	Yes	Yes	Yes	Yes
Ministry of Health	Yes	Yes	Yes	Yes
Mazovian Voivodeship Office				
GUGiK (Head Office of Geodesy and Cartography)		Yes		
Ministry of Environment		Yes	Yes	
Central Statistical Office				
National Library of Poland				

Figure A.28. **Has your institution ever organised or contributed to the organisation of a public event or contest to re-use some of your data, e.g. hackathon, mash-up, app development?**



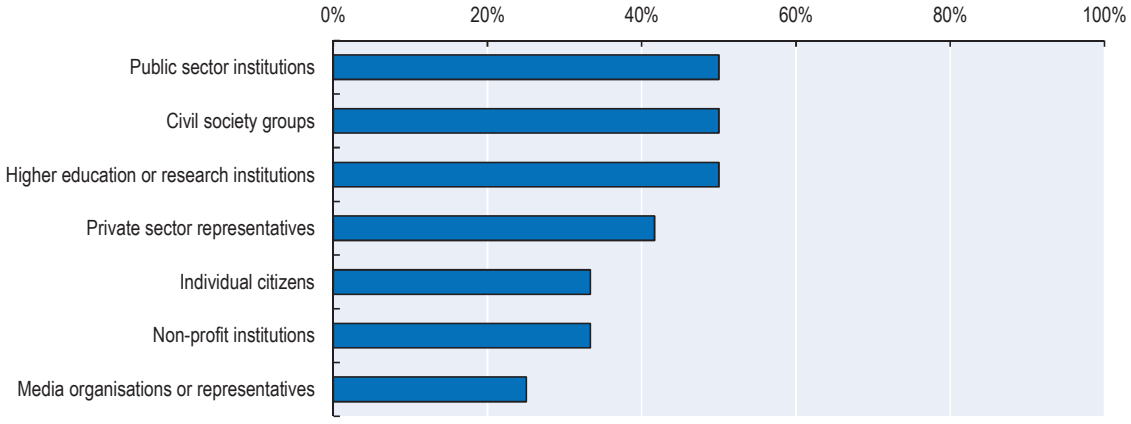
Yes	No	Don't know
Ministry of Economy	Ministry of Health	Ministry of Justice
National Library of Poland	Public Procurement Office	Ministry of Infrastructure and Development
Ministry of Environment	Central Statistical Office	
	Head Office of the State Archives	
	Mazovian Voivodeship Office	
	GUGiK (Head Office of Geodesy and Cartography)	
	Ministry of National Education	

Figure A.29. **Does your institution use social media to encourage the re-use of data collected or generated by your institution?**



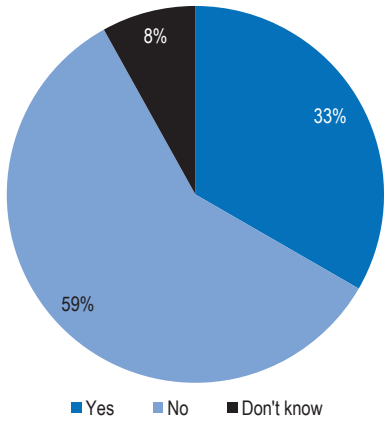
Yes	No	Don't know
Head Office of the State Archives	Public Procurement Office	Ministry of Justice
Ministry of National Education	Mazovian Voivodeship Office	
Ministry of Economy	Central Statistical Office	
Ministry of Infrastructure and Development		
Ministry of Health		
GUGiK (Head Office of Geodesy and Cartography)		
Ministry of Environment		
National Library of Poland		

Figure A.30. **Has your institution ever consulted with any of these user groups on the data they would like to have access to?**



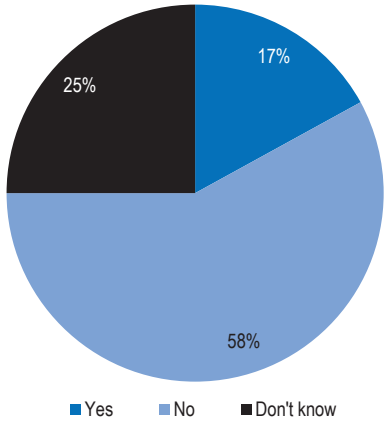
	Public sector	Civil society	Higher education, research	Private sector	Individuals	Non-profit	Media
Ministry of Justice							
Ministry of Infrastructure and Development	Yes						
Ministry of Health	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public Procurement Office							
Central Statistical Office	Yes	Yes	Yes				
Head Office of the State Archives		Yes					
Mazovian Voivodeship Office							
GUGiK (Head Office of Geodesy and Cartography)	Yes	Yes	Yes	Yes			
Ministry of National Education	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ministry of Economy				Yes	Yes	Yes	Yes
National Library of Poland			Yes				
Ministry of Environment	Yes	Yes	Yes	Yes	Yes	Yes	

Figure A.31. **Please indicate if your institution has guidelines or rules concerning fees for data re-use (e.g. fees for non-public or commercial users to access government datasets).**



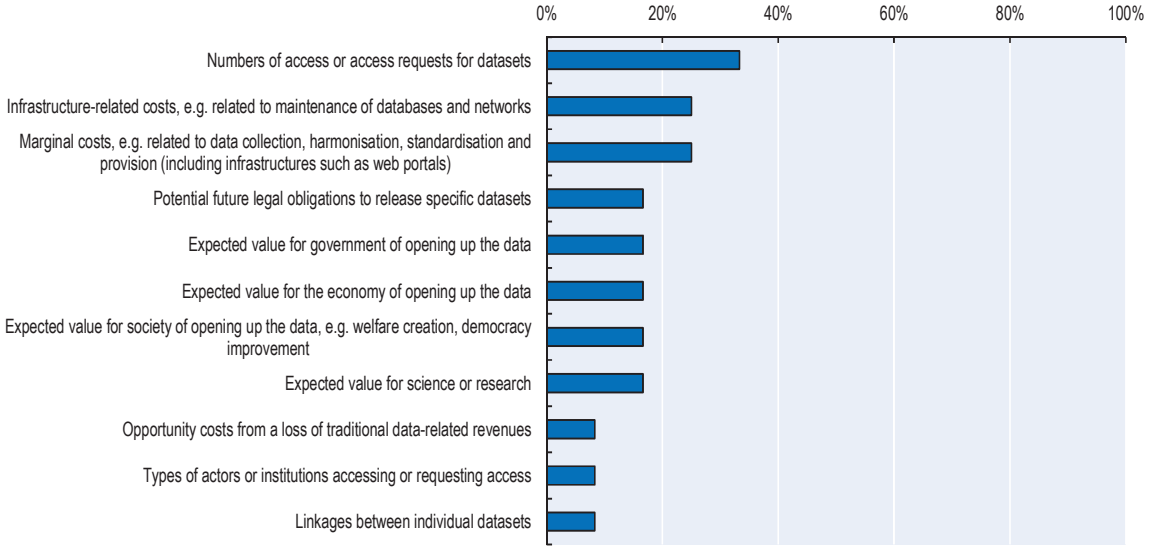
Yes	No	Don't know
Ministry of Economy	Ministry of Justice	Ministry of Infrastructure and Development
GUGiK (Head Office of Geodesy and Cartography)	Public Procurement Office	
Ministry of Environment	Mazovian Voivodeship Office	
National Library of Poland	Central Statistical Office	
	Head Office of the State Archives	
	Ministry of National Education	
	Ministry of Health	

Figure A.32. **Did your institution develop an *ex ante* value proposition (e.g. a business case) to prioritise opening up certain datasets?**



Yes	No	Don't know
Ministry of National Education	Ministry of Infrastructure and Development	Ministry of Justice
Ministry of Economy	Public Procurement Office	Ministry of Environment
	Mazovian Voivodeship Office	National Library of Poland
	Central Statistical Office	
	Head Office of the State Archives	
	Ministry of Health	
	GUGiK (Head Office of Geodesy and Cartography)	

Figure A.33. **You indicated that your institution did not develop an *ex ante* value proposition to prioritise opening up certain datasets. Please indicate which of the following cost and benefit factors are in your view important to prioritise datasets for future re-use**



Glossary

This Glossary was compiled for the purpose of this Review and describes how the following terms are used:

Application programming interface (API): A protocol intended to be used as an interface by software components to communicate with each other. Such interface helps developers extend reach of their apps and/or services.

Apps: Computer software designed to help the user to perform specific tasks using smart phones.

Blog: A discussion, or informational site, published on the World Wide Web and consisting of a number of entries ("posts") typically displayed in reverse chronological order (the most recent post appears first).

Crowd-sourcing: The practice of obtaining needed services, ideas, or content by soliciting contributions from a large group of people, rather than from traditional employees or suppliers. This process can occur both online and offline. It combines the efforts of crowds of self-identified volunteers, part-time workers, etc, where each one on their own initiative adds a small portion that combines into a greater result. Crowd-sourcing differs from an ordinary outsourcing since it is a task or problem that is outsourced to an undefined public rather than to a specific named group.

Datasets: A collection of data, usually presented in tabular form.

Data analytics: A process of inspecting, cleaning, transforming, and modelling data with the goal of highlighting useful information, suggesting conclusions, and supporting decision making and achieved through multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains.

Data mining: The computational process of discovering patterns in large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics, and database systems. The overall goal of the data mining process is to extract information from a data set and transform it into an understandable structure for further use. Aside from the raw analysis step, it involves database and data management aspects, data processing and inference considerations, interestingness metrics, complexity considerations, post-processing of discovered structures, visualization, and online updating.

Economic and financial challenges: Economic and financial challenges mainly refer to the question whether an institution can make a business case for opening up government data, and if it can finance its implementation. Government departments that traditionally earn revenue from the provision of data might lose this source of revenue when the data becomes freely available for re-use. Furthermore, the preparation of data that has only been used internally can require significant financial investments towards

additional infrastructure as well towards the establishment of procedures to collect, harmonise and convert data into re-useable format.

Geographic Information Systems (GIS): In a general sense, geospatial tools are information systems that integrate, store, edit, analyse, share and display geographic information for decision making. GIS applications are tools that allow users to create interactive queries (user-created searches), analyse spatial information, edit data in maps, and present the results of all these operations.

Institutional challenges: Institutional challenges refer to the preparedness of public sector institutions and civil servants to understand and capture the value of open government data. Public sector institutions can show hesitance to giving up control over "their" data, can be sceptical as to the positive impacts and at times even weary of potential negative impacts.

Legal challenges: Legal challenges refer to legal, regulatory or other issues that can impact on the opening up of government data and its re-use. Clear licensing guidelines, and clear legal and regulatory frameworks are essential prerequisite to support data opening (e.g. access to information laws or equivalent) and sharing (e.g. laws granting government and non-government actors the right to access and use data held by one institution). Additionally, fragmented and diverse legislations concerning privacy and security can create confusion for end users or can make it more difficult for governments to open data.

Linked data: A term coined by Tim Berners-Lee that describes a method of publishing structured data so that it can be interlinked thus becoming more useful. It builds upon standard Web technologies such as HTTP and URIs, but rather than using them to serve web pages for human readers, it extends them to share information in a way that can be read automatically by computers. This enables data from different sources to be connected and queried.

Mashup: Using and combining data, presentation or functionality from two or more sources to create new services through a web page, or web application. The term implies easy, fast integration, frequently using open application programming interfaces (API) and data sources to produce enriched results that were not necessarily the original reason for producing the raw source data. The main characteristics of a mashup are combination, visualization, and aggregation. It is important to make existing data more useful, for personal and professional use. To be able to permanently access the data of other services, mashups are generally client applications or hosted online. In the past years, more and more Web applications have published APIs that enable software developers to easily integrate data and functions instead of building them by themselves. Mashups can be considered to have an active role in the evolution of social software and Web 2.0. Mashup composition tools are usually simple enough to be used by end-users. They generally do not require programming skills; therefore, these tools contribute to a new vision of the Web, where users are able to contribute.

Metadata: Metadata attribute information to content and are related to the contents of works such as periods, authors and descriptions, and the information related to right holders and conditions for use. They are of big importance for content preservation because they give information on existing collections. Their harmonisation facilitates common access to, and search for, information as well as re-use of information. Meta-data helps to standardise data definitions and improve comparability.

National context challenges: National context challenges refer to the preparedness of the wider public (including civil society organisations, private sector, etc.) and the group of actors that compose the open data ecosystem to recognise and realise the added value that open government data can provide for better government and welfare creation. The general public or interest groups might not know or be indifferent about the availability of open government data to support their causes. Their awareness, demand of data and data re-use are essential to produce value.

Open source: In IT production and development, open source is a philosophy, or pragmatic methodology that promotes free redistribution and access to an end-product's design and implementation details.

Organisational challenges: Organisational challenges refer to issues that might arise with reference to the actors, procedures and workflows that data needs to go through in an administration before it can be opened up and re-used by the wider public. This includes questions of who bears responsibility and liability for opened datasets or of whether central guidelines are clearly formulated and can be implemented. These challenges moreover refer to the ways non-government actors are empowered to collaborate in the design and implementation of open government data initiatives.

Policy challenges: Policy challenges refer to the existence of clear policy guidance – e.g. policy documents – setting the overall vision and objectives of the national open data initiatives. Policy guidance on the national open data agenda is normally provided by national open data strategy and action plan. Policy challenges, for example, include conflicts between open government data objectives and policies that limit information disclosure or that make the data subject to complex copyright procedures. Policy challenges can moreover refer to conflicts arising from different institutions' priority to showcase some sort of action in the short run versus long-term objectives to be achieved through OGD.

Resource Description Framework (RDF) : RDF is a framework for representing information on the Web. RDF Concepts and Abstract Syntax defines an abstract syntax on which RDF is based, and which serves to link its concrete syntax to its formal semantics. It also includes discussion of design goals, key concepts, data typing, character normalization and handling of URI references

Screen scraping: The act of capturing data from a system or program by snooping the contents of some display that is not actually intended for data transport or inspection by programs.

Search function: A search function that searches a Website/portal offers users a way to find content/data. Users can locate content by searching for specific words or phrases, without needing to understand or navigate through the structure of the Web site/portal. This can be a quicker or easier way to find content, particularly on large sites.

Smart Disclosure: The practice of expanding access to data in machine-readable formats so that innovators can create interactive services and tools that allow consumers to make more informed important choices in sectors such as health care, education, finance, energy, transportation, etc; and enables them to benefit from new products and services powered by data.

Social Media: The means of interactions among people in which they create, share, and exchange information and ideas in virtual communities and networks.

Social network platforms/ service: An online service, platform, or site that focuses on facilitating the building of social networks or social relations among people who, for example, share interests, activities, backgrounds, or real-life connections. A social network service consists of a representation of each user (a profile), his/her social links, and a variety of additional services. Most social network services (e.g. Facebook, Twitter, Google+) are web-based and provide means for users to interact over the Internet, such as e-mail and instant messaging to share ideas, activities, events, and interests within their individual networks.

Technical challenges: Technical challenges refer to issues of data format, data access and standardisation that, if not considered carefully, can impact the success of open government data initiatives. Data formats might for example differ from ministry to ministry – is it clear if and how they should be standardised. Certain formats lend themselves more to re-use than others – is it clear which ones are to be preferred? Finally, this set of challenges also includes issues around infrastructure, applications, privacy and information security.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

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Open Government Data Review of Poland

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