

# Analytical Report n16



Analytical Report 16

**OPEN DATA BEST PRACTICES IN EUROPE: LEARNING FROM CYPRUS, FRANCE, AND IRELAND.**

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*Note that the interviews performed for researching this report were collected before the COVID-19 medical emergency of early 2020. In many cases, in writing we refer to physical meetings and events that were part of the countries' approaches before COVID-19. The authors are not aware of how the use of physical meetings adapted to the restrictions on circulations, e.g. by being replaced with webinars or videoconferences.*

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## 1. Introduction

The enormous amount of data that is generated today pushes governments worldwide to carefully consider how it can best be used to benefit citizens, businesses, public bodies, and the economy and society at large. Since its launch in 2015, the European Data Portal (EDP) has acted as a single access point to open data from public administrations published across Europe. Open data refers to information that can be freely used, modified, and shared by anyone for any purpose. It must be available under an open licence and provided in a convenient and re-usable form that is machine readable.

The European Data Portal conducts an annual benchmark assessment of the current state of open data in the European Union countries and Europe in general. The latest Open Data Maturity Report (2019) covered the Member States, the EFTA countries Iceland, Liechtenstein, Norway and Switzerland, as well as the United Kingdom, and assessed the countries on four dimensions:

- **Open Data Policy:** development of specific policies and strategies to foster open data practice
- **Open Data Portal:** functions that enable users to interact with open data via the national portal
- **Open Data Impact:** activities to monitor and measure open data re-use and impact created
- **Open Data Quality:** measures to ensure a systematic high-level quality of data and metadata

The report provides an overview of the top performing countries to enable learning from them and is structured along those dimensions.

### What: overview of top performing countries in terms of open data maturity

In the latest Open Data Maturity (2019) report, the top performing countries – France, Spain, and Ireland – retained their leading position since the previous year. Cyprus moved up one spot since, from 5<sup>th</sup> to 4<sup>th</sup> place. At the time of writing this analytical report, Spain was unavailable to contribute to our research, so Cyprus, France, and Ireland are explored in this report.

### Why: enable other countries to learn from top performing countries

This report provides an overview of best practices implemented by top performing countries that can be transferred to other national and local contexts. This way, countries with a lower level of open data maturity can learn from their practices, insights, and advice. By sharing this knowledge, access to open data can be improved, quality of open data publication safeguarded, and impact of open data increased across Europe.

### How: approach and structure of this analytical report

The input for this report consists of both in-depth interviews with representatives of the national open data teams and their original responses to the extensive questionnaire that was filled out at the time of the Open Data Maturity assessment of 2019.

The report is structured along the four open data maturity dimensions – Policy, Portal, Impact, and Quality. For each dimension, each of the three countries is described in terms of their current situation, including developments over the last year as well as a future outlook. This will enable countries to see what activities the top countries performed for each of the dimensions and how they have or are planning to overcome dimension-specific challenges. First, an overview of key terms per country, such as their portal, national team name, key policy, and strategy, will be provided, followed by some tips for less mature countries.

## Overview of key terms per country



**data.gouv.fr**



## Top tips and advice for maturing countries



“Having a **COMPREHENSIVE OPEN DATA STRATEGY** and a **CLEAR STRATEGIC VISION** that is endorsed at the highest possible political level is of paramount importance when attempting to **CONVINCE** public sector bodies to publish their data.”

“**CREATE POLITICAL SUPPORT**, by showcasing the re-use of public sector data as much as possible to show **VALUE THAT IS CREATED** by it.”

“A legal framework should go **BEYOND THE PSI DIRECTIVE REQUIREMENTS** and set clear obligations for public sector bodies.”

“Create an action plan that includes measures and activities that aim at three directions:

(a) to **ENABLE DEMAND** (legal, infrastructure, training, etc.)

(b) to **STIMULATE SUPPLY** (well-designed awareness campaigns that target all potential stakeholders)

(c) to **FACILITATE AND PROMOTE DIALOGUE** between publishers and re-users (joint events aimed to bring them together or joint focus groups).”



data.gouv.fr

“Don’t rush into trying to have as much data as possible, the actual goal is to have **DATA THAT IS RE-USABLE.**”

“We need to **ENGAGE WITH THE RE-USERS** that provide feedback on what datasets they want to be published and engage more with administrations to **DEFINE THE KEY DATASETS** that should be published.”

“Engage with administrations and **SUPPORT** them to produce **HIGH-QUALITY DATASETS** as they often don’t yet have the **SKILLS** or the time.”

“As the **VOLUME** of the datasets is going to increase, we need to think about the way users can **DISCOVER THE RIGHT DATASETS.**”



“One of the key challenges that we are facing is really **KNOWING WHO IS USING THE DATA, HOW THE DATA IS USED, AND HOW OFTEN.** We have statistics of the website of course, but the real value comes from knowing **WHAT IS DONE WITH THE DATA** through interacting with re-users.”

“In addition to having a solid strategy in place, it is important to plan how it will be implemented. With an **IMPLEMENTATION PLAN** that has specific actions, a timeline and a responsible person/body, you make sure that everyone knows what is **EXPECTED** and you can keep them **ACCOUNTABLE FOR THEIR RESPONSIBILITIES.**”

“Open data does not stand on its own. It has to be integrated in supporting policies, such as data trust and general digital strategy.”



## 2. Open Data Policy

### 2.1. Cyprus

#### 2.1.1. Current situation and reflection

In Cyprus, the general open data policy is integrated into Cyprus' national Public Sector Information (PSI) law<sup>1</sup> which was adopted in 2015. The extensive law goes beyond the minimum requirements set by the European Directive on the re-use of PSI<sup>2</sup>. The main highlights of the policy are:

- 1) All public sector data is open by default, except for data where access is prohibited.
- 2) Public Sector Bodies (PSBs) must annually update their data catalogue and publish their data online on the national open data portal [data.gov.cy](http://data.gov.cy)<sup>3</sup>.
- 3) All data is made available under the Creative Commons Attribution and the Creative Commons Share-Alike Licenses<sup>4</sup> unless the Licensing Authority grants permission to public sector bodies to use any other licence or impose additional constraints.

#### *Supporting strategy*

In 2017, Cyprus adopted the Open Data Strategy 2017-2021<sup>5</sup>. The strategy is based on four pillars that guide all the activities that the national data team performs:

- 1) Providing the required legal framework to encourage the supply of high-quality PSI for re-use.
- 2) Providing the necessary infrastructure for the dissemination of PSI in the form of a national open data portal that is modern and fit for purpose.
- 3) Maintaining, expanding, and supporting (through the provision of training, guides, etc.) the existing network of PSI Liaison Officers in public sector bodies (PSBs).
- 4) Promoting PSI re-use in both private and public sector through joint events and facilitating constant dialogue between suppliers and users.

As part of the strategy, an Action Plan<sup>6</sup> was set up. It includes activities and timeframes for each of the four main pillars described above. Actions include, for example, strengthening the open data governance, improving the infrastructure (the national portal), and organising events to promote the re-use of open data in Cyprus (hackathons, open days, etc). The plan was updated last year to incorporate new actions that aim to strengthen the open data governance and to align the plan with the latest Open Data and PSI Directive<sup>7</sup>.

#### *Open data (PSI) team*

The open data team from Cyprus is responsible for Cyprus' open data portal [data.gov.cy](http://data.gov.cy) and for promoting open data among ministries and assisting them with their data publication process. The team also coordinates the engagement with PSI Liaison Officers at the ministries and private sector actors as well as academics. Through the team, a network of PSI contact points across government is formed and maintained. The team makes sure that their views are reflected in the Action Plan's proposals.

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<sup>1</sup> <https://bit.ly/2s2dhgr>

<sup>2</sup> <https://eur-lex.europa.eu/eli/dir/2013/37/oj>

<sup>3</sup> <https://www.data.gov.cy/>

<sup>4</sup> <https://creativecommons.org/licenses/>

<sup>5</sup> <https://bit.ly/2YLkpvv>

<sup>6</sup> <https://bit.ly/2YLkpvv>

<sup>7</sup> <https://ec.europa.eu/digital-single-market/en/public-sector-information-psi-directive-open-data-directive>

### *PSI Liaison Officers*

Across government, PSI liaison officers are appointed. They are typically public sector body (PSB) employees, who are proficient in the field of IT, but are not experts. In addition, they are trained in PSI re-use issues such as legislation, licences, charges, formats, etc. The PSI liaisons have the duty to:

- 1) Support and advise PSBs on PSI issues (legislation, licensing, formats, etc.)
- 2) Identify, collect, and upload PSBs' new datasets to data.gov.cy
- 3) Be responsible for updating PSBs datasets that were already published
- 4) Process data requests
- 5) Promote an open data culture in their organisation

Being a PSI liaison is a separate role from Data Officers (which is GDPR related), but in many cases PSBs assign both the PSI Liaison Officer and the Data Officer duties to the same person.

### 2.1.2. Future outlook

#### *Moving from policies for governmental data to private data*

In Cyprus, the open data policy is largely focused on public sector information. Currently, the amount of private sector open data on the national portal is low. The future outlook for Cyprus will be focussing on adding more private sector data that has a high public interest and works towards having the right policies in place to enable that.

## 2.2. France

### 2.2.1. Current situation and reflection

In France, the framework for the publication and sharing of open data is set by the national open data policy<sup>8</sup>, which was adopted in 2015. In 2016, the Digital Republic Bill<sup>9</sup> was approved by the French Parliament and led to significant progress in terms of open data and national data policy. The legislation provides for better access to public data and aims to encourage the creation of new digital services for citizens and businesses.

A new decree, Decree No. 2018-1117 of 10 December 2018<sup>10</sup>, also identifies the administrative documents that can be published without the need for processing the personal data it contains. These documents are considered essential information for the public, such as organisation charts of public administrations, directories of regulated professions, etc.

#### *Supporting strategy*

The French national strategy for open data and open government is detailed in its National Action Plan 2018-2020<sup>11</sup>. The National Action Plan was developed through public consultations and collaboratively drafted by administrations, companies, and citizens. Yet, there are also multiple supporting strategies and policies in place which aid the open data strategy:

<sup>8</sup> Available under <https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECF11524250L/jo/texte>

<sup>9</sup> <https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECF11524250L/jo/texte>

<sup>10</sup> <https://www.legifrance.gouv.fr/eli/decret/2018/12/10/ECOJ1817657D/jo/texte>

<sup>11</sup> <https://www.etalab.gouv.fr/wp-content/uploads/2018/04/PlanOGP-FR-2018-2020-VF-FR.pdf>



- **Regarding the state digital strategy:** In early 2019, tech.gouv<sup>12</sup>, the new programme to accelerate the digital transformation of public services was launched. One of the key missions is to manage and control the data life cycle, from its collection to its exchange.
- **Regarding digital reform of the French state:** The governmental strategy Public Action 2022<sup>13</sup> defines the main goals to promote the transformation of public service in a digital matter.
- **Regarding open data and AI:** The National Strategy on Artificial Intelligence<sup>14</sup> gives a significant place to open data commitments. It advocates that private companies should be encouraged to share and open some of their data (for example private transportation companies' data).

#### *Setting up task forces: Etalab and Open Data France*

Etalab<sup>15</sup> is an open data task force was set up in the French Prime Minister's office. It is responsible for promoting open data among ministries and assisting them with their data publication process. At the national level, the task force follows a data publication plan driven by the latest decrees, such as the publication of public procurement data. Moreover, Etalab also defined a list of datasets with a high impact on economic and social life, which are prioritised to be published as open data. The task force also coordinates with the association of local authorities, Open Data France, which was mandated by the State Secretary on Digital to prepare the opening of local governments' data.

#### *Appointing data officers*

Two types of data officers are appointed within ministerial organisations:

- **Chief data officers (CDOs)** oversee the data policy within their ministry. The CDO is under the responsibility of the "General Data Administrator", the state CDO. Etalab leads this network and supports each CDO in the implementation of their mission, including the opening and circulation of data in their ministry.
- **Open data officers (ODOs)** are in charge of instilling the open data policy within their ministry and in some inter-ministerial services. The ODO identifies high-value databases, acts as an intermediary between Etalab and the divisions of his ministry, and reports needs and feedback.

### ■ ■ 2.2.2. Future outlook

#### *Tracking new bills and connect to open data*

By leveraging short communication lines with the ministries, e.g. via the chief data officers and open data officers, upcoming bills are tracked and potentially linked to open data. If there is a new bill on a specific topic, Etalab helps define what key data on that topic should be published as open data. In collaboration with the responsible ministry, Etalab can help prepare the right datasets for publication.

#### *Planning document*

Based on a large-scale reflection period of 6 months, a new strategy and planning document will be created by the end of 2020. Even though France is mature in terms of their open data policy and portal,

<sup>12</sup> <https://www.numerique.gouv.fr/actualites/tech-gouv-accelerer-la-transformation-numerique-du-service-public/>

<sup>13</sup> <https://www.gouvernement.fr/action/action-publique-2022-pour-une-transformation-du-service-public>

<sup>14</sup> <https://www.aiforhumanity.fr/>

<sup>15</sup> <https://www.data.gouv.fr/en/organizations/etalab/>

they will continue to look towards the new challenges on open data and how to address them by actions, projects, and support for administrations in the coming years.

## 2.3. Ireland

### 2.3.1. Current situation and reflection

In March 2019, the Irish Data Sharing and Governance Bill<sup>16</sup> was enacted into law. The Data Sharing and Governance Act<sup>17</sup> is expected to result in significant progress in terms of data sharing and re-use of open data by public bodies. The Act provides for the creation of base registries that will act as single authoritative sources of basic information for public bodies in respect of key categories of data, such as people, businesses, and locations. These base registries will underpin the development of a National Data Infrastructure for Ireland, which further supports and drives innovation in the delivery of public services and evaluating the outcomes of public policy making.

#### *Supporting strategies*

In Ireland, the vision for the publication and sharing of open data is set in the national Open Data Strategy for 2017-2022<sup>18</sup>. As the name suggests, this is a strategy specific to open data that builds on the achievements of the Open Data Initiative, initiated in 2014. The strategy decrees that all public bodies provide a list on their website of all published information relevant to their respective organisation – which is a requirement under Section 8 of the Irish Freedom of Information Act<sup>19</sup>.

The Open Data Strategy for 2017-2022 sets out actions under seven strategic themes:

- 1) Broadening the range of public bodies actively engaged in the Open Data Initiative
- 2) Broadening the scope of the Initiative and improving the quality, quantity, and range of datasets available on the national portal (data.gov.ie)
- 3) Engaging more actively with stakeholders and encouraging the re-use of open data
- 4) Supporting and encouraging various groups of open data users
- 5) Providing a framework to support and train public bodies in their open data activities
- 6) Evaluating the impact and benefits of the Open Data Initiative
- 7) Ensuring that effective governance structures are in place to implement the strategy

The necessary actions to achieve the objectives of the Strategy are set out in an Implementation Plan<sup>20</sup> that specifies the responsible body for each action and a timeframe for implementation.

The new Public Sector Data Strategy 2019-2023<sup>21</sup> document for Ireland was published in December 2018. Open data is a key component of this strategy: “a structured approach to open data and cross-departmental analytics is central to promoting the value of data, the generation of data-driven insights and delivery of evidence-based decision-making”.

#### *Open Data Liaison Officers*

In 2017, a network of Open Data Liaison Officers was established within public service organisations who act as points of contact for all matters related to open data. Their function is to promote the publication of open data and the availability of open data training, etc. within their respective

<sup>16</sup> <http://www.irishstatutebook.ie/eli/2019/act/5/enacted/en/html>

<sup>17</sup> <http://www.irishstatutebook.ie/eli/2019/act/5/enacted/en/html>

<sup>18</sup> <https://data.gov.ie/pages/open-data-strategy-2017-2022>

<sup>19</sup> <http://www.irishstatutebook.ie/eli/2014/act/30/enacted/en/html>

<sup>20</sup> [https://data.gov.ie/sites/default/files/files/Final%20Strategy%20online%20version\(1\).pdf](https://data.gov.ie/sites/default/files/files/Final%20Strategy%20online%20version(1).pdf)

<sup>21</sup> <https://www.gov.ie/en/publication/1d6bc7-public-service-data-strategy-2019-2023/>

organisations. About 70 Open Data Liaison Officers are now in place who actively promote open data and publication within their organisations.

### *Governance*

In Ireland, the governance structure for open data consists of two main bodies: the Public Bodies Working Group on Open Data and the Open Data Governance Board. In addition, there is a small Open Data Policy Unit that supports the Minister for Public Expenditure and Reform. The Public Bodies Working Group provides technical advice on open data and is responsible for the Technical Framework, which ensures that datasets are published in a consistent way. This group consists of representatives from 30 public sector bodies and meets quarterly. The Open Data Governance Board provides strategic leadership and oversees the implementation of the Open Data Strategy. The Board is tasked with designing and strategically reviewing measures to improve the capacity and capability of public bodies in implementing open data and in considering opportunities to maximise the value of public sector data and information for long-term economic, social, and democratic benefit.

### ■ ■ 2.3.2. Future outlook

#### *Promote holistic view of open data strategy*

The Irish open data strategy is largely successful because open data is embedded in other policies. The Irish national open data team plans to keep promoting that open data is not something that needs to be considered in isolation. Instead, it should be included in other kinds of policies, like data trust or broader data management, and needs to be integral to the national digital strategy.

#### *Continuously update implementation plan*

The open data strategy in Ireland is accompanied by an implementation plan. This implementation plan contains specific actions and a timeline for its execution. Going forward, this implementation plan is used to make sure all involved parties know what is expected of them and can be held accountable to update the actions.

## 2.4. Conclusion - Open Data Policy

One of the common themes that we see in the open data policies of each of these three countries is a specific open data legislation and a clear strategy. To make the strategy more tangible and actionable, an action plan or implementation plan help these countries to track the progress of, and keep the responsible parties accountable for, the different actions that need to be taken.

There are also supporting strategies in which the national open data strategies are incorporated in some way or form. This shows that open data is not something that should be considered in isolation, but it is connected to other policies and needs to be integrated.

Lastly, a dedicated national open data team can push the national efforts on open data further. They should act as a safekeeper of the strategy and follow up on the actions needed by other stakeholders. To be successful, the team needs to set up contact points of open data ambassadors at the necessary places in government, public sector bodies as well as in the private sector and maintain close contact with and between these actors.

### 3. Open Data Portal

#### 3.1. Cyprus

##### 3.1.1. Current situation and reflection

The open data portal of Cyprus, [data.gov.cy](http://data.gov.cy) offers functionalities that enable the interaction between publishers and re-users. The homepage shows the themes of the datasets available on the portal and several news items.



Figure 1: Homepage of [data.gov.cy](http://data.gov.cy)

#### Interaction

[Data.gov.cy](http://Data.gov.cy) displays a set of information for each dataset. A new feature that was added this year is the opportunity to provide quick feedback to specific datasets through a “rating system” ranging from 1 to 5-star review (see Figure 2).

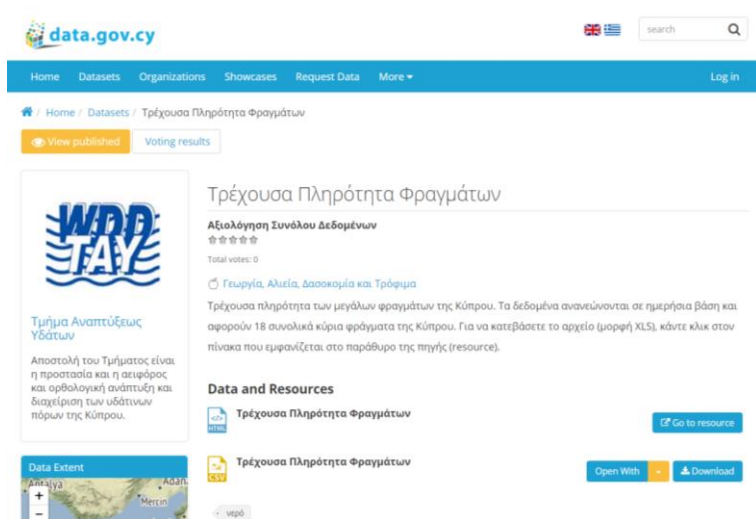


Figure 2: Dataset page on [data.gov.cy](http://data.gov.cy)

In addition, a feature - that is included based on feedback via the user satisfaction survey - enables to provide dataset-level feedback (see Figure 3). This allows users to provide feedback or pose questions directly to the data publisher. The national open data team also monitors the messages that have been sent via this tool.

Figure 3: Dataset page including feedback option on data.gov.cy

### Improving the portal

Apart from the feedback obtained through the daily interaction of the open data team with both publishers and re-users, the open data team conducts a user satisfaction survey about the portal every two years. The latest results are shared on the portal (see Figure 4) and feedback is incorporated in the development plan of the portal.

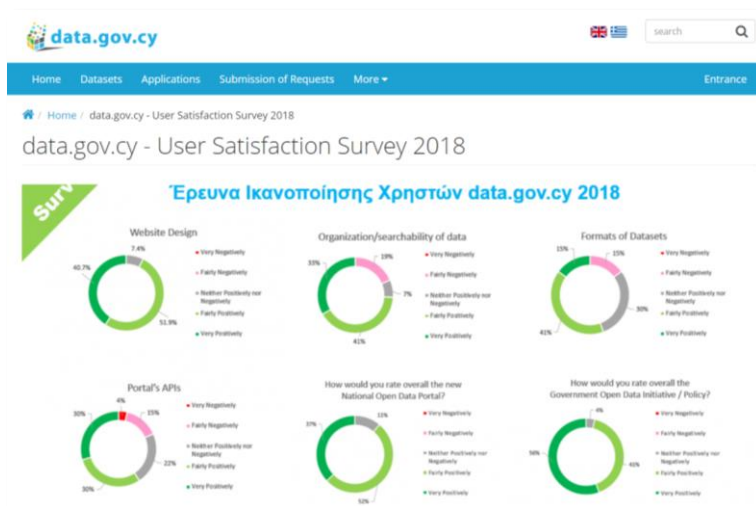


Figure 4: User satisfaction survey on data.gov.cy

### 3.1.2. Future outlook

#### Dataset update reminder

To help public sector bodies to continuously update their datasets, there are plans to develop a dedicated tool. This will be incorporated in the portal to automate the process of notifying public sector bodies that there are datasets with overdue updates.

#### Statistics dashboard

There are also plans to incorporate a portal statistics dashboard, similar to the one available on the French and Irish national open data portals. This was mentioned by the users of the portal as one of the development areas in the latest user satisfaction survey.

### Moving from PSI to open data by both public and private sectors

Cyprus' national open data portal is currently focused on public sector information. The national open data team envisions the platform to develop into one that will host not only public sector, but also private sector data. This is already piloted in collaboration with GreenDot Cyprus<sup>22</sup>, the first private sector organisation to publish data on the national portal.

## 3.2. France

### 3.2.1. Current situation and reflection

The French open data portal<sup>23</sup> offers advanced functionalities that enable the interaction between publishers and re-users and is user friendly on many aspects. There are various features that enable improvement of the datasets and the portal in general.

The French open data portal provides an overview of the key themes of the datasets, as well as a Dashboard<sup>24</sup> with statistics on its key performance indexes – e.g. volume of datasets and use cases published and the recent activities in the community (see Figure 5).

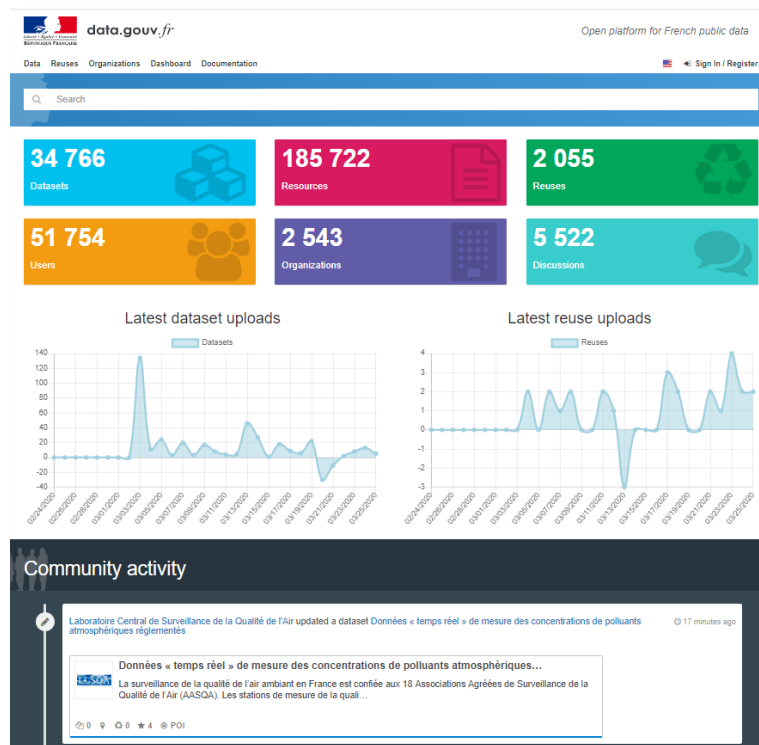


Figure 5: Dashboard page of data.gov.fr

The nature of the source of each dataset is highlighted by displaying a pictogram of a stamp to characterise official data providers. The “stamp” shows users that the provider is certified by the national portal as an official data provider (see Figure 6).

### Discussion

To foster interaction between data publishers and data re-users, or between re-users themselves, a discussion forum for registered users is available on the national open data portal. Here, users can

<sup>22</sup> <http://greendot.com.cy/en>

<sup>23</sup> <http://data.gouv.fr/>

<sup>24</sup> <https://www.data.gouv.fr/en/dashboard/>

discuss issues and express their opinions that are not related to a specific dataset. A general discussion forum remains a common and valid choice to support the communities surrounding the portals for topics that are not related to any specific datasets, but are more general, such as skills or best practices. Moreover, there is a discussion forum available for each dataset. This allows users to express their opinions about the published dataset and makes it possible to report areas for improvement to the data provider.

### Interaction

Anyone has the possibility to create a user profile on the portal, follow the activity of other users (public organisations or individuals), and view statistics on the registered publishers' portal activity<sup>25</sup>, such as the volume of datasets published, use cases developed based on that data, etc. Figure 6 below shows an example of such user profile pages.



Figure 6: Publisher profile page on data.gov.fr

Portal visitors have the possibility to provide feedback to each dataset, and most importantly to easily contribute data and/or use cases to the portal through the “contribute” function. The latter element highlights the advanced understanding of the portal managers of what a modern portal should entail and a broader approach to the definition of portal contributors limited to public sector bodies. Data.gov.fr also enables users to directly contact data providers, follow datasets of interest, integrate and/or share the dataset or check the errors that were recorded for the given datasets (see Figure 7).

<sup>25</sup> Available under <https://www.data.gov.fr/fr/organizations/>

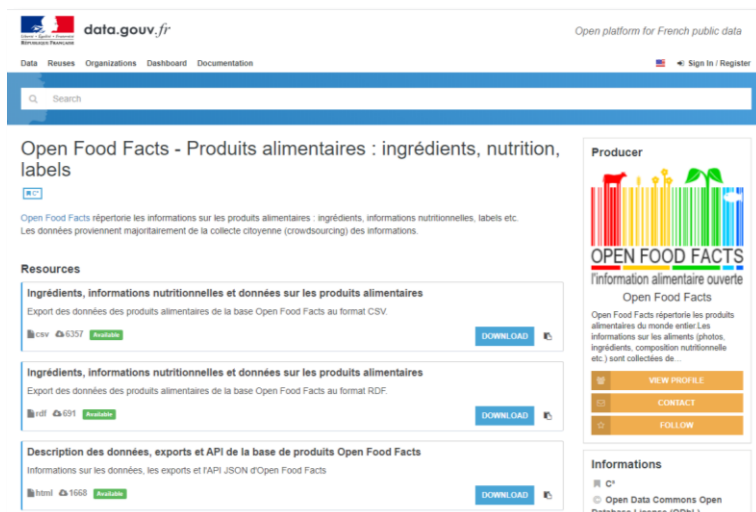


Figure 7: Dataset page on data.gov.fr

### 3.2.2. Future outlook

#### Visualisations

Etablab aims to improve the way in which users can interact with the datasets through the visualisation of datasets. A tool was already developed, called CSV API, that can visualise CSV files and will be extended to other formats as well. This will enable users that lack the skills to re-use the data to interact with the datasets.

#### Creating a one-stop-shop for open data

Every six months the national portal team organises a seminar to review the projects developed by the national portal and the possible improvements. Discussions are based on user feedback, the needs expressed by the public and private stakeholders, and log analysis carried out over time. After the seminar, a plan which specifies the key objectives set to address those needs. The vision for the portal is to create a one-stop-shop for open data-related information, linking the new tools of the portal, but also other tools, documents, guides, and websites that are developed to the national open data portal.

## 3.3. Ireland

### 3.3.1. Current situation and reflection

Advanced features to enable better open data publication, discoverability, access, and re-use are also provided by the open data portal of Ireland. This year, the portal has been updated to include an Irish language version.

The homepage shows the number of datasets and publishers as well as the overview of dataset themes, and directly enables users to search for datasets (see Figure 8). The Irish Open Data Portal gives special attention to newly added datasets by flagging them, and features datasets that are related to a current hot topic, such as the latest general elections in Ireland at the time. There is also a section of open data showcases, where a dataset from data.gov.ie is re-used in an application or visualised.



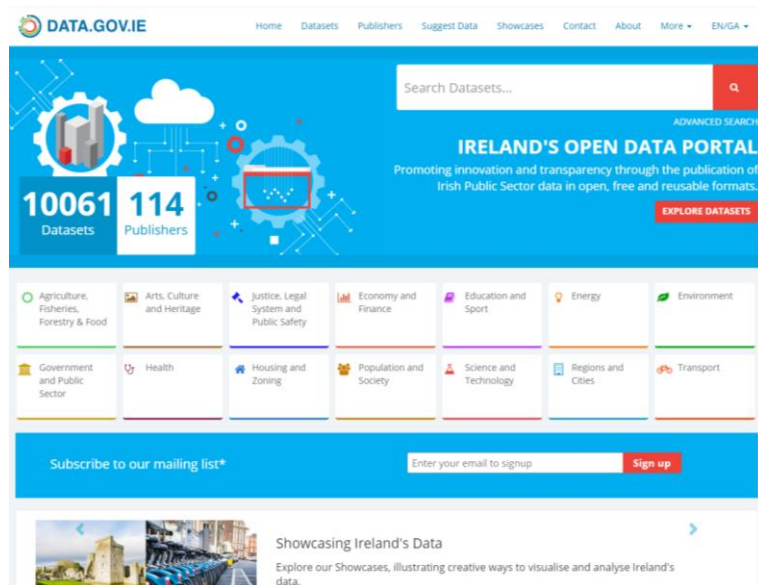


Figure 8: Homepage of data.gov.ie

### Interaction

For each dataset data.gov.ie displays the publisher, licence, theme, number of views, and the dataset's openness rating. Moreover, users can view the dataset's history, consult use cases based on the dataset and can contact the dataset owner. A new feature that was added this year is the opportunity to provide quick feedback to specific datasets through a rating system by "liking" or "disliking" datasets by giving them a thumbs-up or a thumbs-down (see Figure 9).



Figure 9: Dataset page on data.gov.ie

An innovative feature of the Irish portal is the possibility to add additional resources to datasets (as seen in Figure 10). By using the "data resources" function, data providers can upload additional documentation to a dataset and provide re-users with additional context for the published data. Another new feature that was added this year is the "Developer's Corner". It offers sample pieces of code that enable developers to run different scenarios with the data. These serve to introduce the core concepts for connecting to the data.gov.ie API as well as more advanced usage for the purposes of data enrichment and visualisation.

## Monitoring

Furthermore, the “Statistics” page<sup>26</sup> of data.gov.ie (see Figure 11) also provides information on the most viewed datasets, most downloaded resources, the top keywords searched, as well as on the key website and usage metrics (visitors, sessions, and page views). A good practice here is also the monitoring of the level of compliance with the Technical Framework for open data publication. The tool shows information on the compliance with the open licence specifications, the format for dataset publication (in line with the 5-star open data model), the type of standard used for the publication of the dataset and the compliance level with the metadata schema DCAT-AP v1.1. Figure 12 shows this monitoring feature on data.gov.ie to assess compliance with the Technical Framework.



Figure 10: Statistics page on data.gov.ie

Compliance with Technical Framework					
Metric	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020
<b>Datasets Under Open Licence</b>	8937	9513	9570	9545	9579
<b>Datasets Formats</b>	8964 datasets scored, from which: 27 None 58 ★ 45 ★★ 8831 ★★★ 0 ★★★★ 3 ★★★★★	9540 datasets scored, from which: 27 None 70 ★ 46 ★★ 9394 ★★★ 0 ★★★★ 3 ★★★★★	9598 datasets scored, from which: 28 None 80 ★ 46 ★★ 9441 ★★★ 0 ★★★★ 3 ★★★★★	10027 datasets scored, from which: 482 None 79 ★ 45 ★★ 9418 ★★★ 0 ★★★★ 3 ★★★★★	10062 datasets scored, from which: 483 None 85 ★ 71 ★★ 9420 ★★★ 0 ★★★★ 3 ★★★★★
<b>Metadata Schema for Open Data</b>	All datasets are compliant with DCAT-AP v1.1.	All datasets are compliant with DCAT-AP v1.1.	All datasets are compliant with DCAT-AP v1.1.	All datasets are compliant with DCAT-AP v1.1.	All datasets are compliant with DCAT-AP v1.1.
<b>Standards For Open Data</b>	3720 dataset(s) indicate usage of INSPIRE, DATEXII, etc.	3759 dataset(s) indicate usage of INSPIRE, DATEXII, etc.	3688 dataset(s) indicate usage of INSPIRE, DATEXII, etc.	4163 dataset(s) indicate usage of INSPIRE, DATEXII, etc.	4189 dataset(s) indicate usage of INSPIRE, DATEXII, etc.
<b>URI Usage</b>	N/A	N/A	N/A	N/A	N/A

Figure 11: Statistics page including compliance with Technical Framework table on data.gov.ie

## 3.3.2. Future outlook

### Feedback

A dataset-specific feedback system will be launched on the Irish portal soon after the interview this report is based upon took place. This will allow users to give feedback to specific datasets and interact with the data providers. The aim is to foster interaction between data providers and re-users and ultimately create better quality datasets based on the needs of re-users.

<sup>26</sup> <https://data.gov.ie/stats>

### *Impact stories and showcases*

To make the value of available datasets more tangible, “impact stories” will be created in addition to the showcases – which already highlight one dataset. An impact story will combine multiple datasets and provide an example of how these datasets together generate insights.

#### Example

An example of an impact story is the Dublin bike scheme. It shows how data such as availability of the bicycles and their location, creates value when combined with maps data. This data can be visualised over the course of a specific time period, such as a week, to show how the bicycles move throughout the city. For example, most bicycle journeys begin at a train station, move around during the day, and terminate at a bicycle hub at the end of the day.

### 3.4. Conclusion - Open Data Portal

The national portals of Cyprus, France, and Ireland show some admirable features that can inspire other countries to improve their portals. A common focus is on the interaction between data publishers and re-users through the portal, by enabling dataset-specific feedback systems, options to directly contact data publishers, and rating systems. This will foster the interaction between publishers and re-users, so they can create better quality datasets that serve the needs of the re-users.

In addition to providing the datasets, the portals want to enable (potential) re-users to more easily visualise the data. Even when users do not yet have the required skill level, they can get a feeling for the data that is available. Through showcases and examples, the value that is created by open data re-use is further underscored.

There is finally also a vision for the national portals to become a one-stop-shop for open data. Including not only public sector data, but also data published by the private sector that are valuable to the public. Eventually, all necessary and useful information regarding open data, its publication, re-use, etc. should be available from this one common platform.

## 4. Open Data Impact

### 4.1. Cyprus

#### 4.1.1. Current situation and reflection

The Open Data Strategy Vision of Cyprus states: “To make Cyprus one of the leading countries in the field of Open Public Data by creating an environment where the release of public sector data for re-use is among the priorities of public bodies and where the benefits of open data are recognized by everyone”<sup>27</sup>. To reach this goal, the national open data team focusses its efforts around the four pillars of the open data strategy previously described in section 2.1.1.

In addition to providing the required legal framework, the national open data portal provides the infrastructure and maintains the existing network of PSI Liaison Officers in public sector bodies. The team aims to create impact by expanding this network and by promoting re-use in both the private and public sector through joint events and facilitating constant dialogue between suppliers and users.

#### *Interacting through the portal*

On [data.gov.cy](https://data.gov.cy), users can request a dataset they need. The data portal team monitors these requests and follows up on them to start interactions with users and contact the responsible PSI Liaison Officer in the respective ministry. This way, the national data team facilitates contact between re-users and data publishers.

There is a focus on showcasing re-use examples<sup>28</sup> to underscore the impact created by open data. The re-users sometimes contact the data portal team proactively, but the team also actively searches for news or posts on re-use to identify new re-use cases in the form of applications and websites. With the consent of the re-user, these examples are published as a showcase on the portal.

In addition, the team monitors portal performance indexes such as the number of visitors, datasets downloads, traffic through APIs, and how these changed over time gives a proxy on the extend of re-use, especially in those areas where re-use does not take the form of applications.

#### *Offline community engagement: Creation of thematic focus groups*

The data team of Cyprus organises and supports events such as seminars, hackathons, and events, that promote open data re-use by the private, public, and academic sectors, such as Open Data Day. In many of these events, participants showcase open data re-use cases to one another. There is a special focus on developing an open data ecosystem around certain thematic areas of data. The team has taken the lead in bringing together publishers and data professionals as well as universities and potential re-users in so-called Joint Thematic Focus Groups. Through these groups, the Cyprus open data team facilitates the dialogue between publishers and re-users. So far, there have been three Joint Thematic Focus Groups that resulted in dataset publications that focus on: air quality data, road traffic data, and transport data. A fourth Focus Group on government vehicle fleet management data has had its first couple of meetings. At these Joint Thematic Focus groups, the public sector bodies that generate the data related to the topic can meet with their data re-users, to not only understand the re-use of their data but also to benefit from insights gained by the analysis and the re-use of their data.

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<sup>27</sup> <https://bit.ly/2YLkpvv>

<sup>28</sup> <https://data.gov.cy/application-showcases?language=el>

### *University engagement*

Cyprus puts a particular focus on engaging with universities, its researchers as well as students, to push open data further. Not only are university representatives often attending events related to open data, they are also collaborating partners with the open data portal and national data team. To further engage with and educate students on open data, there are open data related projects incorporated in courses of certain study programmes.

#### 4.1.2. Future outlook

##### *Continue development of communities on thematic focus groups*

The fourth Joint Thematic Focus Group on government vehicle fleet management data will be continued. Moreover, there are plans to develop more of these communities that focus on one specific data area.

##### *Open data impact study*

One of the major limitations currently refers to the fact that not all re-use cases are known or easily traceable. It is quite a challenge to know who really uses the data. There is re-use that results in specific new services, applications or websites, which are often promoted in some way or form. There is, however, also a large amount of “silent” re-use of data that takes place within private and public organisations by people that rely on the datasets in their day-to-day work.

#### Example

A few months before writing this study, Cyprus’ national data portal experienced a disruption to the web-services used by one of the major publishers of geospatial data. Due to this disruption, both the open data team and the publisher's helpdesk were flooded with calls from individuals and companies that constantly use these services in their day to day work. These include civil servants of ministries, but also urban planners that use datasets such as maps data, and even consultants from the big four consultancies. This disruption exposed the extent of re-use of these data which was much higher than initially thought.

To get a better view of the impact that is created by the data available on Cyprus’ data portal, an impact study is planned for 2020 to monitor and quantify the impact of re-use. Part of this study will also include the development of tools and methodologies to assist the national team in creating a better view of the re-use of data. This study will specifically focus on shedding light on this silent re-use of data.

## 4.2. France

### 4.2.1. Current situation and reflection

In France, the adoption of the Digital Republic Bill had a great impact on the re-use of open data. In particular, the “open as default” legislative measure<sup>29</sup> enabled public bodies to access and re-use the data collected by other administrations, free of charge. Not only were organisations mandated to publish datasets, but there was also an increase in the number of downloads and re-use cases recorded on the national portal. It also provided impulses for public administrations to re-use the published open government data for their own public service activities.

<sup>29</sup> <https://www.legifrance.gouv.fr/eli/loi/2016/10/7/ECFI1524250L/jo/texte>

To ensure impact, automatically generated reports on the activity on the portal are analysed on a daily basis. This includes dataset views, comments, or re-use. Also, the statistics on portal visitors, API use, etc. are gathered in [statistics.gouv.fr](https://statistics.gouv.fr). Based on these, Etalab can define the key datasets that are in high demand and will give these datasets more visibility. Moreover, Etalab wants to link and highlight certain datasets that are related to major issues and the latest developments. To do this, they aim to have datasets related to current issues more visible, such as new legislation or topics that are currently discussed in the parliament. In turn, these datasets can help understand the topic better. This way, impact is created by having the right datasets at the right time, highly visible and promoted on social media channels.

#### Example

In light of the upcoming elections, the French national portal published several datasets that are related to the municipal elections, such as the lists of candidates. These datasets are given a prominent place in the portal and are promoted on social media as they are published at a time when they are highly relevant.

#### *Metrics to measure the impact*

Besides the statistics from the national open data portal, such as the number of visitors, downloads, and re-use, another strong KPI for the French open data team is the number of data providers that benefit from opening up their data. Moreover, Etalab aims to estimate the costs that are saved by publishing datasets as open data, e.g. an administration does not have to manually reply to all requests for data.

#### *Offline community engagement: Hackathons and Open Data Forum*

Several events are organised by Etalab to bring together data providers, public servants, the private sector, and re-users. Not only are physical meetings important, but these events are also useful to identify new data to open and to enable commitments on behalf of organisations to provide access to this data. When large, important datasets are published, hackathons are organised that bring together re-users and data providers to, for example, create apps for data visualisation<sup>30</sup>. The Open Data Forum (Forum open d'Etat) is also held every trimester on a specific governmental topic, e.g. public procurement. During this event, challenges are identified, and solutions jointly developed, e.g. for public procurement an interface that makes it easier for re-users to understand the data. The exchange between open data providers and re-users within these communities of practice and events have positively contributed to enhancing the impact and quality of data publication as well as fostering more demand-driven publication.

#### ■ ■ 4.2.2. Future outlook

##### *Gather more user feedback*

As for most national open data portals in Europe, users do not have to state why and how they intend to re-use the datasets. It is therefore difficult to measure re-use. The French national data portal team aims to continue to engage in a dialogue with re-users, like citizens, associations, and private companies. At meetings and events, they are asked to discuss the difficulties they encounter related to re-using the portal's data. Through these interactions, Etalab gets a better and more specific

<sup>30</sup> <https://app.dvf.etalab.gouv.fr/>

understanding of the current needs and demands of (potential) re-users. Moreover, a large-scale online survey for data publishers and re-users will be run. It is intended to more systematically create insights into the needs of these stakeholders, such as what difficulties they experience, what are key datasets to them, what datasets are currently missing, and what type of datasets they would like to be published.

#### *Focus on data discoverability*

The number of available datasets is increasing. At the time of writing, data.gouv.fr has approximately 30.000 datasets. The main challenge for the French national portal is no longer prioritising getting more datasets published, but rather to make the data discoverable. One way in which they want to achieve this is by carefully monitoring all new datasets and by giving them the best visibility in their respective thematic areas. Another way is to link the different datasets that relate to the same topic, so that when searching for a specific topic the right, most relevant datasets are displayed.

#### **Example**

France will be hosting the Olympic Games in 2024. Hosting this event is a big investment in terms of creating infrastructure, for example. French citizens might not be clear on why, what, and how public funds are spent for the Olympic Games, and what the benefit for them it is to host such a large event. Therefore, a new program will need to be proposed to make the public spending related to the Olympic Games more understandable and transparent.

### 4.3. Ireland

#### ■ 4.3.1. Current situation and reflection

To make sure that impact is created on the right topics, the Irish national data portal team analyses the activity on the portal. There are statistics on dataset views, dataset requests, comments, and re-use. Also, the statistics on portal visitors, such as most downloaded resources, page views, etc., are gathered on the ‘Statistics’ page of data.gov.ie.

The data portal team aims to interact with data publishers and re-users through the portal, via the “Request a dataset” section, comments, and via a survey. However, the Irish national portal team believes that the best insights are derived from face to face interaction with data publishers and re-users. These insights are used to tailor the activities of the portal team to the needs of the users – thus creating the most valuable impact.

#### *Interacting with users through the portal*

On the Irish portal, users can leave comments and request a dataset. The data portal team monitors these requests and comments and follows up on them to start interactions with users. Moreover, the data portal team aims to receive feedback from the portal’s users through a survey that is prompted when downloading a dataset from the portal. This survey asks users to provide some information about their re-use. Even though the response rate to the survey is currently limited, there are some useful insights derived from it that help the team to ensure impact where it is needed most.

#### *Offline community engagement: Impact Series Events*

The Irish open data team attends various events, such as conferences and seminars. They also organise the Open Data Impact Series, a series of events that focus on a particular data domain, such as

transport, business or environment, which were previously held editions. The series aims to monitor the impact of open data in the different thematical fields and to support the publication of high-quality open data in these sectors. The challenges of working with data from these fields are addressed and several re-use cases presented. In these events, a broad range of publishers and re-users, both public and private, are invited to discuss what data they use, how they use it, what data they would like to become available, and which kinds of data need to be of higher quality. These events are perceived as highly valuable as there is close interaction with various re-users that bring about new ideas on how to use data even if it was not known before that the data was used in that way or by that type of re-user.

#### Example

The third Open Data Impact Series event on environmental data took place on 29th April 2019. This event looked at how data is being adopted and used, what challenges users face, and what other environmental data could potentially be made available. There is a large amount of open environmental data available in Ireland, including meteorological and waste data, information about air and water, land usage, and energy consumption. The Open Data Impact Series events allow the Irish data team to monitor how this is being used.

The event brought data publishers and data re-users together to discuss the use of open data to deal with environmental issues such as waste management, climate change, etc. Some 80 people from the public and private sectors attended the event which comprised three panel discussions on waste, climate change, and water and the marine.

#### *Engagement fund*

Ireland supports an annual Open Data Engagement Fund to promote re-use of open data available via the national portal. This annual grant-scheme is available to projects that use data from data.gov.ie by members of the public, academia, private companies, as well as public servants. The showcases supported by the Engagement Fund are increasingly showing a more innovative use of the data.

#### ■ ■ 4.3.2. Future outlook

##### *Tracker system for requests*

The Irish open data portal is currently working on a tracker system for all the queries that are received. This will enable them to have a clear overview of the number and types of requests. Insights that are derived from this overview can help guide the team to develop the open data portal further.


##### *Setting up KPIs*

Along the same lines of strategic awareness, Ireland also introduced an action item in their national Open Data Strategy to encourage the development of metrics that allow to measure the benefits derived by open data re-use. To this end, a dedicated researcher will start to develop a set of KPIs and focus on measuring the benefits for the public sector, in terms of efficiency and effectiveness of service delivery.

##### *Impact stories*

To make the value of available datasets more tangible, impact stories will be identified and captured. An impact story will combine multiple datasets and provide an example of how these datasets can





generate insights. At the moment, these impact stories will be created by the data.gov.ie team. The intention is that once users and re-users see the value of these impact stories, they will be created by collaborating data providers.

#### *Open Data Re-use Incubator*

A strategic review was conducted with the Open Data Governance Board in February 2019. This resulted in the adoption of several new initiatives aimed at taking open data to the next level in Ireland. One of these is the Open Data Re-use Incubator - a partnership between industry, media, academia and funding bodies to deliver transparency and economic prosperity through the re-use of open data.

#### 4.4. Conclusion - Open Data Impact

Based on the input from the open data teams, several common ways in which they create impact can be observed. One of the ways is the close monitoring of the activity on the portal. Based on the activity, specific measures can be taken to give visibility to the datasets that are most impactful at a certain point in time.

This is not only done through monitoring and analysing the activity on the portal. There are also ways in which (potential) re-users can proactively contact the portal or data publisher with requests for datasets. In addition, the data teams keep an eye out for datasets that are relevant for topics that are currently in the news. This enables impact creation as the right datasets are available at the right time, when demand is the highest.

Lastly, there is a large focus by each of the national data teams on community engagement through events such as conferences, seminars, hackathons, etc. They mention that these are the moments in which they can really get to know the different types of re-users as well as explore why and how they re-use the datasets – which is oftentimes difficult. Moreover, these events as well as setting up communities around specific data topics brings together the re-users and data providers and enables them to engage in a dialogue. Frequent and consistent participation in these events helps to build the open data community which is essential to the further development of open data.

## 5. Open Data Quality

### 5.1. Cyprus

#### 5.1.1. Current situation and reflection

The open data strategy of Cyprus states the commitment to provide training and support to public sector bodies. In addition to manuals and online guidelines, a huge learning by Cyprus was that ministries need guidance in delivering high quality metadata and data.

#### *Manuals and guidelines*

There are several guides available at the national portal of Cyprus that help data providers with the preparation of the dataset and ensure that they adhere to specific guidelines. There is the national Technical Guideline<sup>31</sup> for the publication of open data and a series of online Publisher's Guides<sup>32</sup> for, among others, selecting data for publication, preparing and formatting data, publishing and updating datasets on the national open data portal, and publishing data through the open data portal's datastore APIs.

#### *Metadata*

When publishing data on the National Open Data Portal, public sector bodies are required to provide several mandatory metadata items. The backend of the portal is set in such a way that no dataset can be submitted for publication on the portal unless the mandatory metadata fields are completed. The submitted dataset and the related metadata then undergo a quality review for (a) format compliance and (b) metadata completeness, before being published on the portal.

#### *Guiding mechanism for delivering high quality data.*

To ensure a high level of quality throughout the open data portal of Cyprus, a methodology based on three roles the contributor, administrator, and coordinator, was set up. It guides public sector bodies in delivering high quality metadata and data, and has enabled the national team of Cyprus to keep tight control over the quality of the portal.

The process is initiated when a public sector body, the contributor, is invited and agrees to publish its data on the national portal. The upload is not directly done by the contributor. Instead, the contributor delivers the metadata to a member of the Cyprus open data team, i.e. the administrator, who assesses the quality of the data. If the quality is insufficient, the administrator will guide the contributor to reach the needed quality that complies with the technical guidelines. Once a department or ministry has gained more experience and the level of quality is sufficient according to the open data team, a PSI Liaison Officer, i.e. the coordinator role, is trained and set up at the department and through that role, the public sector body can publish data from that point in time.

The methodology thus continues with the following steps:

- 1) Assignment of PSI Liaison Officer by the public sector body (PSB)
- 2) PSI Liaison Officer undergoes the offered training program
- 3) PSB finalises its data publication plan with the assistance of a member of the open data team (template and guidelines as well as support provided by the open data team)
- 4) PSB gradually publishes data on the open data portal according to its data publication plan

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<sup>31</sup> <https://www.data.gov.cy/technical-guidelines>

<sup>32</sup> <https://www.data.gov.cy/publishers-support>

- 5) Open data team monitors the progress by comparing each PSBs data publication plan against the datasets published on the national open data portal and “pokes” the PSB if necessary.
- 6) PSBs are required to update and submit their data publication plans at least every 2 years—then the open data team reiterates the process described in step 5.

### *Training top management*

One of Cyprus’ key learnings reflects the importance of top management commitment on the side of public sector bodies. The Open Data Strategy Action Plan refers to the design and delivery of a half-day training program for middle-management and top-management civil servants in collaboration with the Cyprus Academy of Public Administration. This program promotes open data to the highest hierarchical levels and includes modules on open data and government policies, public sector bodies’ obligations under the PSI law, showcases of re-use, and the benefits and opportunities of open data.

### 5.1.2. Future outlook

At the time of writing this report, Cyprus has no regional or other portals. All data is published on the national portal. However, there are currently new portals being developed. The Cyprus open data portal team will guide the new portals to have a similar quality system in place, ensuring high-quality metadata and data. In turn, the national data portal will develop efforts to start harvesting data from these portals to the national portal directly.

## 5.2. France

### 5.2.1. Current situation and reflection

In France, numerous efforts were made to ensure the quality of data. There are several rules and guidelines for publishing the datasets. Also, there are data schemes available that help data providers and tools that help to automatically detect errors.

### *Guides for preparing datasets*

In previous phases of the French data portal, the national team provided support in preparing the dataset for, and dealt with each question from, each data provider individually. This was a time-consuming task. Now, there are several guides available at [guides.etalab.gouv.fr](https://guides.etalab.gouv.fr) that help data providers with the preparation of the dataset before publication itself. This way, a lot of questions that a provider can ask are already covered by the guide. These guidebooks are updated based on what the most frequently asked questions are and are available on [data.gouv.fr](https://data.gouv.fr) to provide guidelines to the data producer. Moreover, these guidelines accompany the data producer through the user story of creating a profile on the national portal, to the publication and the updating process of data. A guidebook on technical and legal best practices was also published<sup>33</sup>.

Moreover, any provider who wishes to publish a dataset has the possibility to contact the Etalab team in order to obtain support in the publication of their data, such as assistance in the creation of data schema, choosing the format, improving data quality, documenting datasets, and publishing data on [data.gouv.fr](https://data.gouv.fr). For example, in 2019, Etalab supported the Directorate General of Public Finance in the publication of the database of land valuation.

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<sup>33</sup> <https://www.cnil.fr/sites/default/files/atoms/files/guide-open-data.pdf>

### *Metadata*

There is a system in place that requires data publishers to provide several mandatory metadata fields when publishing on the national open data portal. Metadata is published only after fulfilling a quality checklist, with questions such as:

- Is the dataset described and are keywords added?
- Is a channel for feedback to the data provide made available?
- Is the dataset up to date?

There is also a functionality that shows what parts of the metadata are missing and a tool that detects if a link to the dataset is broken.

Etalab also supports the Validata project<sup>34</sup>, whose partners are Open Data France, Jailbreak, Fing and Dataactivist. Validata is a platform for validating the quality of future open data dataset. The publication of high-quality metadata is a key criterion for the validation of the dataset.

### *Data schemas*

To improve data standardisation, data schemas are available at [schema.data.gouv.fr](http://schema.data.gouv.fr). Data schemas are used to describe data models: defining how the data is organised, what the different fields are, how data is represented, what the possible values are, etc. Using these schemas enables an increase in the quality of the data, especially when several data producers produce a similar dataset.

### *Ensuring quality at the local level*

Another noteworthy initiative in France is the Observatory on Open Data at Local Level<sup>35</sup>. This initiative aims to monitor the number of local administrations involved in open data policies, the evolution of datasets published in the field, and identifies the different platforms involved in publishing open datasets. The observatory also tracks the use of data through concrete re-use cases and traffic on the portal, as well as by identifying the way in which the local levels are using (open) data.

Open Data France has published various guidelines for local authorities to help them open up their data<sup>36</sup>, such as a list of standardised datasets that should be prioritised for opening<sup>37</sup>, guides for implementation including a step-by-step approach for smaller local public bodies, and a series of educational resources, including a serious game (“Les explorateurs des données territoriales”<sup>38</sup>).

## **5.2.2. Future outlook**

### *Quality tools*

The French open data team plans to introduce new tools to help the data providers to publish better quality datasets. There are already several tools that support data providers. These and new tools are planned to be incorporated into the portal. Instead of having different sources or websites in which quality measures can be found, the goal is to have all these measures, guides, and training possibilities integrated into one platform on the national portal.

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<sup>34</sup> <https://validata.fr/doku.php>

<sup>35</sup> <http://www.observatoire-opendata.fr/>

<sup>36</sup> <https://doc.data.gouv.fr/>, <https://opendatafrance.gitbook.io/odl-ressources>

<sup>37</sup> <https://scdl.opendatafrance.net/docs/>

<sup>38</sup> <http://opendatalocale.net/jeu-serieux-les-explorateurs-des-donnees-territoriales/>

## 5.3. Ireland

### 5.3.1. Current situation and reflection

To safeguard the quality of the data, the Irish portal uses several measures. In Ireland, data.gov.ie harvests metadata automatically from its sources on a nightly basis. Like the other two countries' portals, the Irish portal offers small data holders the possibility to upload metadata manually if necessary. The portal team also ensures that technical assistance is provided to publishers via guidelines and handbooks.

#### *Technical Framework*

The Open Data Technical Framework<sup>39</sup> describes rules and guidelines as well as the recommended metadata schema for the publication of open data in Ireland, in line with the EU DCAT-AP standard. The Irish data portal insists that the guidelines and standards of the Technical Framework are followed by anyone that links datasets to the portal. The data that is linked to the portal is regularly monitored to ensure that it complies with the guidelines that have been set in the Technical Framework. Further assistance is provided to data publishers that upload metadata via the portal. When manually adding a dataset, publishers are guided through the editing of metadata. For harvesters, metadata is carefully mapped so that it is comprehensible and compliant. Metadata is validated to ensure DCAT-AP compliance.

#### *Training courses*

The Irish open data team has rolled out a training course that also contains a module on open data publishing. Potential data publishers are encouraged to attend the course before starting to publish datasets on the portal. To provide additional support for publishers, the Irish portal also integrated the European Data Portal training modules<sup>40</sup>, hence ensuring the dissemination of EU-level developed content to national audiences.

#### *Legacy datasets*

A great practice from Ireland is also the cooperation with several public agencies to scale out datasets that were harvested from legacy IT systems and replace them with up-to-date, machine-readable datasets, to achieve at least 3-stars level of the 5-star Open Data model<sup>41</sup>. As additional efforts to improve the quality of publication, the portal managing team is reaching out to publishers that publish data in non-machine-readable formats and assists them towards data publication in machine-readable, and ideally open formats. These efforts have led to a significant increase in the number of machine-readable datasets published in non-proprietary formats on the national Irish portal.

#### *Open Data Audit tool*

The Irish national portal data.gov.ie provides an Open Data Audit Tool<sup>42</sup> to support public bodies who want to start publishing Open Data but are unsure which datasets are suitable for publication. As the user guide<sup>43</sup> states, the Open Data Audit Tool is an internal tool that enables public bodies to list and describe all datasets that exist within their organisation, so that together with management and/or

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<sup>39</sup> <https://data.gov.ie/pages/opendatatechnicalframework>

<sup>40</sup> <https://data.gov.ie/edpelearning/en/#/id/co-01>

<sup>41</sup> <https://5stardata.info/en/>

<sup>42</sup> <http://audit.data.gov.ie/>

<sup>43</sup> <http://audit.data.gov.ie/Guide.for.Open.Data.Audit.Tool3.pdf>

the Open Data Officer, datasets can be reviewed and those that are suitable for publication as open data are selected and approved. These datasets can then be published directly on the national portal.

### 5.3.2. Future outlook

#### *Continue training*

To progress open data in Ireland, large numbers of public servants require data literacy training to understand the opportunities and challenges of making public data open and available to citizens. The Irish open data team is working to implement a certified data literacy course for people inexperienced in working with data as a starting point followed by more advanced modules for people tasked with managing and implementing data projects.

#### *Data quality hackathon*

The Irish open data team plans to organise a hackathon focused on the quality of data. The aim of this hackathon is to drive data providers to look at their data more critically and be motivated to provide depth and quality to the data they publish.

## 5.4. Conclusion - Open Data Quality

Regarding open data quality, there are several best practices applied by the top performing countries of the Open Data Maturity 2019 report. There are established manuals and technical guidelines that rely on the feedback of publishers and re-users as well as the learnings from other countries, e.g., the technical guidelines from Cyprus and Ireland show a high level of similarity. Data publishers are also actively trained by the national open data teams. These training courses provide a better understanding of the opportunities and challenges of making data openly available.

Therefore, there is a common focus on safeguarding the quality of the data and metadata that can be observed in each of these countries. However, it is performed to different extents. In France, responsibility is largely given to the publishers themselves. Through manuals and guidelines, they are provided the tools to ensure quality in their data. Whereas in Cyprus, the publishers are taken by the hand and guided through the process of publishing datasets through extensive collaboration between the publisher and the open data team. Ireland shows a middle way, by providing both technical guidelines and manuals as well as extensive training courses that data providers should ideally take before starting to publish datasets.

Instead of having different sources or websites where quality measures can be found, one of the goals regarding quality is to have all the above-mentioned measures, guides, and training possibilities integrated into one platform on the national portals.

## 6. Conclusion

As it has been observed throughout the different chapters of policy, portal, impact and quality, the countries show several best practices that they have in common. These practices can be of interest for other countries to learn from, depending on their specific situation and country-specific needs.

In each of the three countries, a dedicated open data **POLICY**, legislation, and strategy has been set up. Less mature countries should start with developing these, where missing. Moreover, with an implementation plan, the strategy can be made actionable and different actors know their responsibilities. These typically consist of a national open data team and public and sometimes private sector open data ambassadors.

The features of the national open data **PORTALS** are moving beyond merely enabling users to find available datasets. There is a common focus on the interaction between data publishers and re-users through discussion forums, data-specific feedback systems, and rating systems. Through showcases and examples, the portals give exposure to valuable open data re-use cases. Other countries can consider these features to make their portals more interactive and valuable to both re-users and data publishers. The three countries envision their portal to become a one-stop-shop for open data, including both public and private datasets as well as different types of useful information such as manuals, schemas, trainings etc. This way, the positive user experience is expected to further increase as it becomes easier to find all the necessary information regarding open data in one place.

The national open data teams aim to increase **IMPACT** through not just fostering but monitoring and analysing the re-use of open data. This is important for less mature countries to invest in as well. Because of resource constraints, this might not be as easy for all countries, but by documenting impact, political support and related resources available to open data publishing can also increase. In addition to monitoring and analysing the activity on the portals, there are several ways to create impact by ensuring that the right datasets are available at the right time. The data teams consider the topics that are currently in the news and aim to ensure that relevant datasets are published and given special attention on the portal. Re-users can also proactively contact the portal with requests for datasets. Through interaction via open data events, the demands from re-users can be more clearly understood. In these events, where both data publishers and re-users come together, a joint understanding of why and how the datasets are re-used is created. This would be beneficial for other countries to support the further development of open data.

A common focus on safeguarding the **QUALITY** of the data and metadata can be observed in each of the top performing countries. However, it is performed and achieved to different extents. Other countries can follow these practices and choose the form that is best suited to their local setting. There are manuals and technical guidelines that rely on feedback from publishers and re-users, as well as the learnings from other countries. In addition to providing support through FAQ-pages, manuals, and guidelines, data publishers are also actively trained by the national open data teams. These training courses provide a better understanding of the opportunities and challenges of making data openly available. These courses should ideally be available to all levels, from top management of national public sector bodies to the local level.

The best practices on each of the open data maturity dimensions explored in this report can be of great benefit for all countries in Europe and beyond to be inspired, learn from, and implement to improve their own practices.