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Status of Open Source Software Policies in Europe

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Authors

Vivien Devenyi (vivien.devenyi@wavestone.com)

Debora Di Giacomo (debora.digiacom@wavestone.com)

Clare O'Donohoe (clare.odonohoe@wavestone.com)

EUROPEAN COMMISSION

Directorate-General for Informatics

Directorate D — Digital Public Services

Unit D2 — Interoperability



EU-OSOR@ec.europa.eu



<https://joinup.ec.europa.eu/collection/open-source-observatory-osor>



@OSOReu

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Introduction

The Open Source Observatory (OSOR) is a European Commission project hosted on the Joinup collaborative platform. OSOR serves as the middle ground connecting European public administrations with other relevant stakeholders involved or interested in open source. It also continuously supports the dynamic community and promotes the use of open source software (OSS) in the public sector while providing relevant expertise and information. OSOR strives to play an active role in the open source community by promoting OSS and helping European public administrations with its adoption.

In order to map the status of OSS in the European public sector, OSOR published an Annual Report in 2016¹ to highlight the main trends in the deployment of open source by Europe's public administrations. In 2019, this was followed by the publication of a series of Open Source Software Country Intelligence Reports on its Knowledge Centre². These reports detail governance, policy and legal frameworks, and major initiatives pertaining to OSS. Additionally, each report is visually complemented by a short factsheet summarising its content. The individual reports were compiled through desk research. The findings were then validated and enriched via national contact points³ with extensive knowledge of OSS policies and initiatives in their home countries' public sector. For the purposes of this research, a national contact point is defined as an individual with country-specific expertise on the use of OSS in the public sector that has been acquired through their work with a public sector body or OSS interest group.

Building off the findings from the individual country intelligence reports, this report provides a consolidated view on the policies, governance, and initiatives relevant to OSS in the researched European countries. For the purpose of this research, the **'European countries' are the 27 EU Member States and the United Kingdom.**

Firstly, this report addresses how European countries have incorporated OSS as part of their policy and legal framework, be it through initiatives specifically focused on OSS or broader digitalisation initiatives. These political and legal initiatives are categorised by type. Secondly, the governance of the policy and legal frameworks is examined, with a focus on two key parties: governmental actors and strategic players. These parties are defined, and their distribution across Europe is outlined together with examples of collaboration between them. Furthermore, this report examines public sector OSS initiatives and categorises them. The sample of initiatives included in this study were identified through desk research and consultation with national contact points. While the sample is quite comprehensive, it

¹ Open Source Observatory (OSOR), 2016, *Open Source Observatory Annual Report 2016*, viewed 13 October 2020 <https://joinup.ec.europa.eu/sites/default/files/document/2017-01/open_source_observatory_annual_report_3.pdf>

² Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence*, viewed 20 July 2020 <<https://joinup.ec.europa.eu/collection/open-source-observatory-osor/open-source-software-country-intelligence>>

³ The country intelligence reports for Bulgaria, Croatia, Denmark, Estonia, Greece, Hungary, Lithuania, Luxembourg, Malta and Poland are based on desk research only as it was not possible to receive comments from national contact points in these countries.

cannot be deemed fully complete. The report concludes with key takeaways on the adoption of OSS in 28 European countries.

The report comprises the following chapters:

- Chapter 1 Policy and Legal Framework: how European countries incorporate OSS as part of their policy and legal framework.
- Chapter 2 Governance: the two key parties governing or promoting the use of open source software in the public sector - governmental actors and strategic players - and instances of collaboration between them.
- Chapter 3 Open source software initiatives: a categorisation of OSS initiatives in Europe at the national, regional, and local levels.
- Chapter 4 Key takeaways: the main findings regarding the adoption of OSS initiatives.



The analysis conducted in this report is holistic in its approach, addressing **the status** of OSS in the European public sector. Further details specific to individual European countries can be found in the **OSOR Knowledge Centre**⁴.

⁴ Open Source Observatory (OSOR), 2020, *Knowledge Centre*, viewed 20 July 2020 <<https://joinup.ec.europa.eu/collection/open-source-observatory-osor/knowledge-centre>>

1 Policy and Legal Framework

This chapter outlines how European countries are addressing OSS in their political and legal initiatives, either through initiatives exclusively focused on OSS or broader digitalisation schemes. Their adoption timeline is presented to show OSS initiative adoption trends in Europe over the last two decades. The initiatives identified in this research are also categorised by type, as explained below. Finally, an overview of the distribution of various political and legal initiatives throughout Europe is provided.

In the context of this research, **political initiatives are defined as non-legally binding documents**, such as guidelines, declarations, governmental programmes, and strategies. **Legal initiatives are legally binding documents**, which include parliamentary resolutions, laws, directives, and decrees. The political and legal initiatives examined in this research are further categorised by **initiatives referring to OSS in the context of a broader digitalisation initiative** and **initiatives exclusively focused on OSS**.

The research timeline for political and legal initiatives was set to ten years. The country intelligence reports also include the first such initiative that may date back further. The research identified 75 political and 25 legal OSS initiatives adopted in the European countries except Cyprus and Ireland. Out of these, 25 political and 6 legal initiatives focus **exclusively on OSS** while the remaining 50 political and 19 legal initiatives refer to OSS as part of the **broader issue of digitalisation** (see Figure 1 and Figure 2). The figures include the year of adoption and show whether the initiative refers to OSS in the context of a broader digitalisation initiative (indicated by ) or whether the initiative focuses exclusively on OSS (indicated by )

Status of Open Source Software Policies in 28 European Countries - 2020

Figure 1 List of political initiatives referring to open source software in Europe

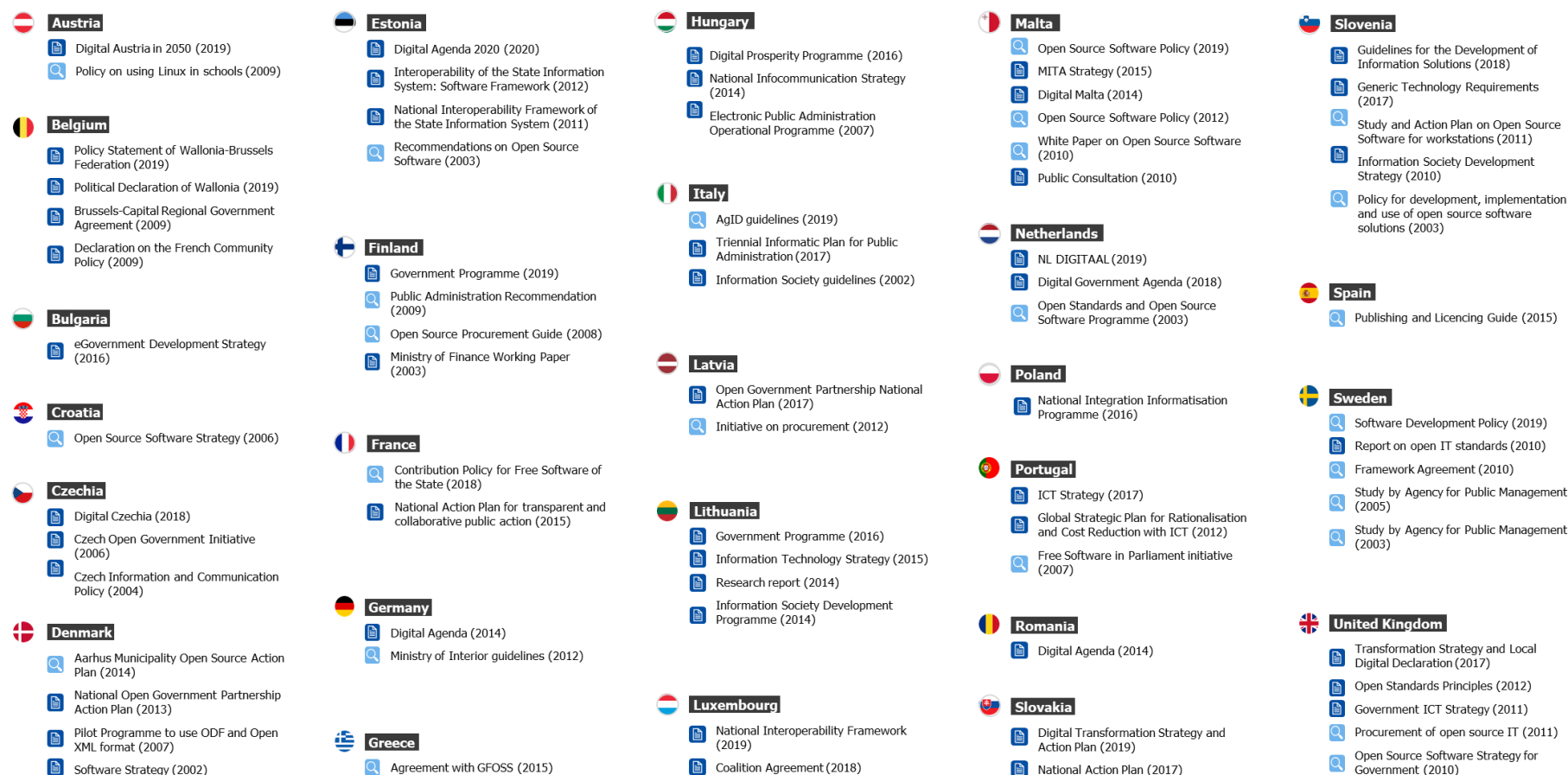


FIGURE LEGEND



- OSS in the context of a broader digitalisation initiative
- Initiative focuses exclusively on OSS

Source: Analysis performed by Wavestone, 2020.

Figure 2 List of legal initiatives referring to open source software in Europe



FIGURE LEGEND

-  OSS in the context of a broader digitalisation initiative
-  Initiative focuses exclusively on OSS

Source: Analysis performed by Wavestone, 2020.

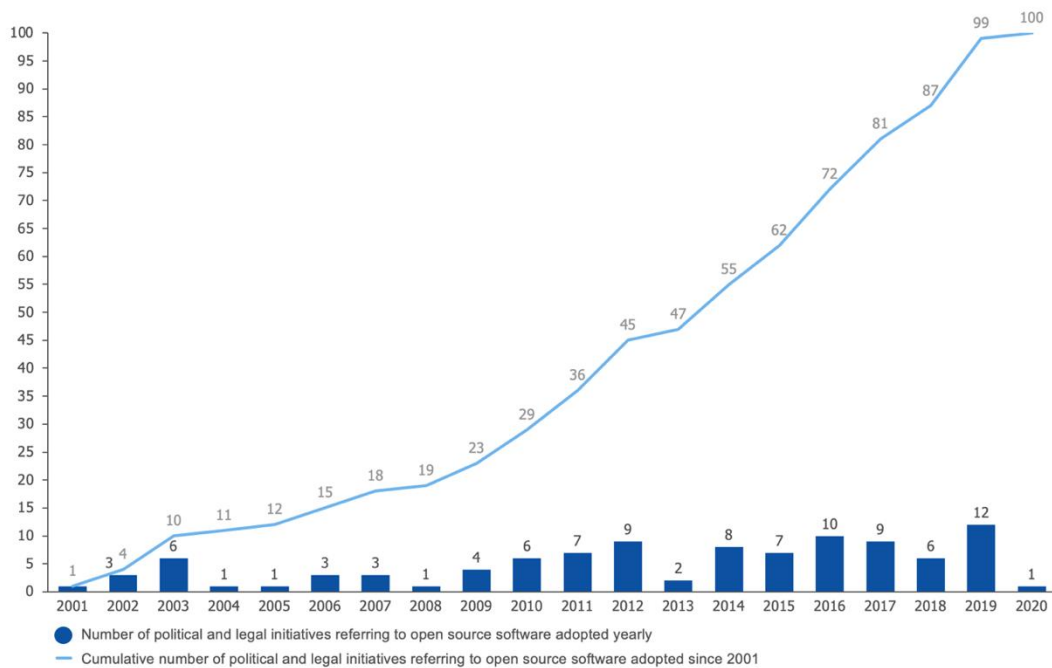
Regarding geographical coverage, 18 out of 28 European countries have adopted legal and/or political initiatives focusing exclusively on OSS. A further 9 countries have addressed OSS as part of a broader political or legal digitalisation initiative. Only two countries have not tackled OSS in their policy and legal frameworks (Cyprus and Ireland).

The research also found that the number of legal and political initiatives referring to OSS in the last decade has increased significantly, reaching an all-time high in 2019 (see Figure 3). In fact, a single initiative in 2001 has turned into 100 political and legal initiatives in 2020. The 2009 Malmö Ministerial

Declaration on eGovernment⁵ and the 2017 Tallinn Ministerial Declaration on eGovernment⁶ promoted the use of the open source model in eGovernment projects. It is possible that these declarations had an influence on the uptake of OSS and the adoption of political and legal initiatives in the years following their signature. Figure 3 shows that few initiatives were implemented in 2020, but this is because the research only covers the first five months of the year. By the end of 2020, it is thought that this number will probably have increased.

The extensive presence of policies addressing OSS, in combination with the timeline of adoption of the political and legal initiatives shown in Figure 3, shows that OSS plays an increasingly important role in Europe.

Figure 3 Adoption timeline of political and legal initiatives addressing open source software in 28 European countries



Source: Analysis performed by Wavestone, 2020.

This research also shows that legal and political initiatives adopted by European countries deal with prominent topics concerning OSS. All 100 political and legal initiatives were analysed and further broken down into four key subcategories (see Table 1):





























- ▶ *Initiatives addressing the adoption of OSS in the public sector:* focusing on the implementation of OSS in the public sector. They outline either specific software solutions that the public sector should use or specific guidelines on how to adopt OSS.

⁵ Ministerial Declaration on eGovernment or Malmö Declaration, 2009, viewed 17 November 2020 <<https://ec.europa.eu/digital-single-market/sites/digital-agenda/files/ministerial-declaration-on-egovernment-malmo.pdf>>

⁶ Ministerial Declaration on eGovernment or Tallinn Declaration, 2017, viewed 17 November 2020 <<https://ec.europa.eu/digital-single-market/en/news/ministerial-declaration-egovernment-tallinn-declaration>>

- ▶ *Initiatives addressing **the development and (re)use** of OSS in the public sector:* encouraging the public sector to develop their own OSS and/or reuse existing OSS.
- ▶ *Initiatives addressing the **promotion** of OSS in the public sector:* advocating the use of OSS within the public sector without, however, providing a specific programme or guidelines on how to achieve this.
- ▶ *Initiatives addressing **OSS in public procurement**:* setting guidelines on how to fairly include OSS in public tenders and ensure a level playing field for OSS with proprietary software in public procurement.

Table 1 Number of political and legal initiatives adopted by the 28 European countries per topic

COUNTRY	ADOPTION OF OSS	DEVELOPMENT AND (RE)USE OF OSS	PROMOTION OF OSS	OSS IN PUBLIC PROCUREMENT
 Austria			2	
 Belgium			4	
 Bulgaria		1	1	
 Croatia			1	
 Cyprus				
 Czechia	1		3	
 Denmark	2	1	2	
 Estonia	1	1	1	1
 Finland	1		2	1
 France	3	1	2	
 Germany		1	1	1
 Greece		1	1	
 Hungary	3		3	
 Ireland				
 Italy	1	1	1	1
 Latvia		1	1	1
 Lithuania			4	
 Luxembourg			2	
 Malta	2	1	3	1
 Netherlands			4	1
 Poland		1		
 Portugal	2		4	
 Romania			1	
 Slovakia	1	1	3	
 Slovenia	1	3		1
 Spain	1	1	2	
 Sweden		1	3	1
 United Kingdom	1	1	2	1
TOTAL	20	17	53	10

Source: Analysis performed by Wavestone, 2020.

As depicted above, initiatives promoting OSS in the public sector without providing a specific programme or guidelines on how to achieve this are the most prevalent in Europe. Non-binding, recommendatory OSS initiatives enable public sector actors to signal their willingness to progress in a certain area without any formal obligations to introduce binding measures. Regardless, any initiative promoting OSS can be seen as a positive development and serve as a starting point for future progress.

2 Governance

A key aspect of this research consisted of analysing the governance of OSS in European countries by seeking to understand who wields authority to influence and enact policies pertaining to this subject matter in each country. Our research identified two key categories of influencers: **governmental actors and strategic players**.

For the purpose of this research, a **governmental actor** is a body acting on behalf of a governmental entity such as a Ministry or Agency. **Strategic players** are non-governmental actors, such as non-governmental associations, organisations, and communities that aim to promote the use of OSS in the public sector at a national and/or international level. Strategic players may collaborate with the public sector to advocate for OSS. While they work to shape the open source ecosystem in their countries, their actual influence may vary greatly. The number and size of strategic players in a given country by no means determines their collective influence on policymaking.

The chapter begins with an overview of the various **governmental actors** working to promote the status of OSS in the public sector. After listing and categorising them by type, their main activities in relation to OSS (including examples) are discussed in further detail, namely **policymaking, development and implementation, and coordination**. Thereafter, the various **strategic players** are mapped to illustrate their presence across Europe. Their activities promoting the use of OSS in the public sector are also further clarified, namely **advocacy, capacity building, and development and implementation**. Furthermore, a dedicated section in this chapter then describes the ways in which the governmental actors and strategic players **collaborate**. It showcases instances where, for example, an event is co-organised, or OSS is co-developed by governmental actors in collaboration with strategic players.












2.1 Governmental actors

Formalised governmental actors, either implementing OSS policies or advocating for their introduction, play a crucial role in ensuring that OSS is recognised within the policy and legal framework of a given country. When there are no related policies in place, governmental actors may work to push for the adoption of a policy addressing OSS or take responsibility for the implementation thereof following its adoption. A survey conducted as part of OSOR's research into Guidelines for Sustainable Open Source Communities in the Public Sector⁷ found that support from governmental actors is a strong enabler of

⁷ Survey conducted as part of the Guidelines for creating sustainable open source communities, OSOR, 2020. Viewed 24 July 2020 <<https://joinup.ec.europa.eu/collection/open-source-observatory-osor/guidelines-creating-sustainable-open-source-communities>>. The survey results show that having political support for any type of OSS project is a pre-requisite for a sustainable public sector OSS project. More specifically, 62% of survey respondents believe the support of the political level to be a 'very important' factor in the sustainability of any community.

sustainable open source communities in the public sector, thus helping to formalise the importance of OSS and embed its use in public sector culture. When researching governmental actors advocating for OSS across the 28 European countries, it was discovered that, while they have all formalised governmental actors dealing with the general digitalisation of their country's public sector, only 11 of them⁸ have governmental actors specifically addressing OSS as part of their mandate (see Table 2). These 18 governmental actors are agencies, services, directorates, departments, offices, secretariats, or competence centres.

Table 2 Governmental actors specifically addressing open source software as part of their mandate

COUNTRY	GOVERNMENTAL ACTOR
 Belgium	Belgian Federal Public Service Policy and Support, the Directorate-General Digital Transformation (FOD BOSA DG DT)
	Digital Agency (<i>Agence du Numérique, AdN</i>)
	Flanders Information Agency (<i>Informatie Vlaanderen</i>)
 Denmark	Danish Agency for Digitisation (<i>Digitaliseringsstyrelsen</i>)
 France	Interministerial Directorate for Digital Services (<i>Direction Interministérielle du Numérique, DINUM</i>)
	Etalab (French Taskforce for Open Data)
 Germany	Competence Center Open Source Software (<i>Kompetenzzentrum Open-Source-Software, CC OSS</i>)
 Italy	Department for Digital Transformation within the Ministry for Technological Innovation and Digitisation
	Agency for Digital Italy (<i>Agenzia per l'Italia Digitale, AgID</i>)
 Malta	Malta Information Technology Agency (MITA)
 Portugal	Administrative Modernisation Agency (<i>Agência para a Modernização Administrativa, AMA</i>)
 Slovenia	Information Society Office within the Ministry of Public Administration Information Society and Informatics Directorate
 Spain	Technology Transfer Centre (<i>Centro de Transferencia de Tecnología, CTT</i>)
	General Secretariat of Digital Administration (SGAD) within the Ministry of Finance and Public Function
 Sweden	Agency for Digital Government (<i>Myndigheten för digital förvaltning, DIGG</i>)
	Swedish National Procurement Services (<i>Kammarkollegiet</i>)
 United Kingdom	Crown Commercial Services (CCS)
	Government Digital Service (GDS)

Source: Analysis performed by Wavestone, 2020.

While differing in terminology, **agencies, services, directorates, departments, offices, and secretariats** share similar characteristics. They are a government body **responsible for a specific**

⁸ Belgium, Denmark, France, Germany, Italy, Malta, Portugal, Slovenia, Spain, Sweden, and the United Kingdom.

policy area or service. For example, an agency is a governmental body, either permanent or semi-permanent, responsible for the oversight and administration of specific functions. **Malta's** Information Technology Agency (MITA)⁹ is a permanent governmental body tasked with being the central driver of the government's ICT policy, programmes, and initiatives. Additionally, the MITA manages the implementation of IT programmes in government to enhance the delivery of public services, and it supplies the government with the necessary IT infrastructure for these services. Similarly, a directorate is a section of a government department in charge of a specific activity. The **French** Interministerial Directorate for Digital Services (*Direction Interministérielle du Numérique*, DINUM)¹⁰, together with its French Taskforce for Open Data (Etalab)¹¹, is in charge of open data and OSS policies. While the terminology used for these six types of governmental actors may vary, their roles and responsibilities are very much aligned.

In contrast, **competence centres are collaborative entities established and led by industry or government and resourced by researchers.** They concentrate on digitalisation and innovation. This research identified a competence centre in **Germany** that can be deemed as a governmental actor. The Competence Centre Open Source Software¹², forming part of the German Federal Centre for Information Technology (ITZBund), was launched by the Ministry of Finance. Its role is to promote the use of OSS in the federal administration and act as the central point of contact on the subject matter.

Our research also shows that the **main activities carried out by governmental actors** in relation to OSS are **polymaking, development and implementation, and coordination** where:

- ▶ *being involved in polymaking* refers to tangibly contributing to the drafting of national policies pertaining to OSS. In **Sweden**, for example, the Agency for Digital Government (*Myndigheten för digital förvaltning*, DIGG)¹³ helps to draft national OSS policies such as an OSS development policy to standardise and regulate software ownership and to set the conditions for sharing OSS solutions. Similarly, the Agency for Digital **Italy** (AgID)¹⁴ ensures that the objectives of the Italian digital agenda are implemented and achieved in full. It also contributes to the promotion of ICT and encourages the public sector to transition from using proprietary software to using OSS solutions and open source formats. As evident in these two examples, involvement in polymaking implies that the governmental actor in question must contribute to the development of a policy or strategy in a concrete manner, either by drafting policies or ensuring that specific goals are met;

⁹ MITA, 2020, *Home*, viewed 20 July 2020 <<https://www.mita.gov.mt/>>

¹⁰ DINUM, 2020, *La DINUM*, viewed 20 July 2020 <<https://www.numerique.gouv.fr/dinum/>>

¹¹ Etalab, 2020, *Le blog d'Etalab*, viewed 20 July 2020 <<https://www.etalab.gouv.fr/>>

¹² ITZBund, 2020, *Leistungsangebot*, viewed 20 July 2020 <https://www.itzbund.de/DE/Leistungsangebot/Beratung/OSS/oss_node.html>

¹³ DIGG, 2020, *Digitalisering av offentlig förvaltning*, viewed 20 July 2020 <<https://www.digg.se/>>

¹⁴ AgID, 2020, *Home*, viewed 20 July 2020 <<https://www.agid.gov.it/>>

- ▶ *being involved in development and implementation* consists of actively developing or helping to implement OSS through various national initiatives, as outlined in the individual Open Source Software Country Intelligence Reports¹⁵. **Portugal's** Administrative Modernisation Agency (AMA)¹⁶ helps the Ministry of State Modernisation and Public Administration to implement policies and carry out its duties in the areas of digital government administrative modernisation and process simplification. AMA also develops¹⁷ as well as implements¹⁸ OSS within the Agency. Other governmental actors, such as the **French** DINUM and **Italy's** AgID contribute to the development of OSS by publishing new developments to government-owned source code on their respective GitHub repositories;
- ▶ *being involved in coordinating open source activities* involves organising and overseeing progression in the use of OSS at a national or international level. In **Belgium**, all three governmental actors are involved in overseeing OSS development at the national or regional levels by supporting the regional and federal governments. The Belgian Federal Public Service Policy and Support, the Directorate-General Digital Transformation (FOD BOSA DG DT)¹⁹, the Digital Agency (*Agence du Numérique, AdN*)²⁰, and the Flanders Information Agency (*Informatie Vlaanderen*)²¹ contribute to coordination by overseeing federal digitalisation, advising the Walloon government, and supporting the Flemish government.

The 18 governmental actors that deal with OSS were all found to be involved in at least one of three abovementioned activities (see Figure 4). 15 governmental actors play a role in the development and implementation of OSS while 9 are involved in policymaking and 7 in coordination.

¹⁵ Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence*, viewed 20 July 2020 <<https://joinup.ec.europa.eu/collection/open-source-observatory-osor/open-source-software-country-intelligence>>

¹⁶ AMA, 2020, *Home*, viewed 20 July 2020 <<https://www.ama.gov.pt/web/english>>

¹⁷ AMA, *GitHub*, viewed 1 October 2020 <<https://github.com/amagovpt>>

¹⁸ For examples, please refer to Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence Report on Portugal*, <<https://joinup.ec.europa.eu/collection/open-source-observatory-osor/open-source-software-country-intelligence>>












¹⁹ DG Digitale Transformatie, 2020, *Homepage*, viewed 20 July 2020 <<https://dt.bosa.be/en>>

²⁰ AdN, 2020, *Presentation of the Agence du Numérique (AdN)*, viewed 20 July 2020 <<https://www.adn.be/en/agence-du-numerique-2/>>

²¹ Vlaanderen Departement Economie, Wetenschap En Innovatie, 2020, *Home*, viewed 20 July 2020 <<https://www.ewi-vlaanderen.be/>>

Figure 4 Governmental actors specifically addressing open source software as part of their mandate



	Belgium	<p>Belgian Federal Public Service Policy and Support, the Directorate-General Digital Transformation (FOD BOSA DG DT)</p> <p>Digital Agency (<i>Agence du Numérique, AdN</i>)</p> <p>Flanders Information Agency (<i>Informatie Vlaanderen</i>)</p>		Malta	Malta Information Technology Agency (MITA)
	Denmark	Danish Agency for Digitisation (<i>Digitaliseringsstyrelsen</i>)		Portugal	Administrative Modernisation Agency (<i>Agência para a Modernização Administrativa, AMA</i>)
	France	<p>Interministerial Directorate for Digital Services (<i>Direction Interministérielle du Numérique, DINUM</i>)</p> <p>Etalab (French Taskforce for Open Data)</p>		Slovenia	Information Society Office within the Ministry of Public Administration Information Society and Informatics Directorate
	Germany	Competence Center Open Source Software (<i>Kompetenzzentrum Open-Source-Software, CC OSS</i>)		Spain	<p>Technology Transfer Centre (<i>Centro de Transferencia de Tecnología, CTT</i>)</p> <p>General Secretariat of Digital Administration (SGAD) within the Ministry of Finance and Public Function</p>
	Italy	<p>Department for Digital Transformation within the Ministry for Technological Innovation and Digitisation</p> <p>Agency for Digital Italy (<i>Agenzia per l'Italia Digitale, AgID</i>)</p>		Sweden	<p>Agency for Digital Government (<i>Myndigheten för digital förvaltning, DIGG</i>)</p> <p>Swedish National Procurement Services (<i>Kammarkollegiet</i>)</p>
				United Kingdom	<p>Crown Commercial Services (CCS)</p> <p>Government Digital Service (GDS)</p>

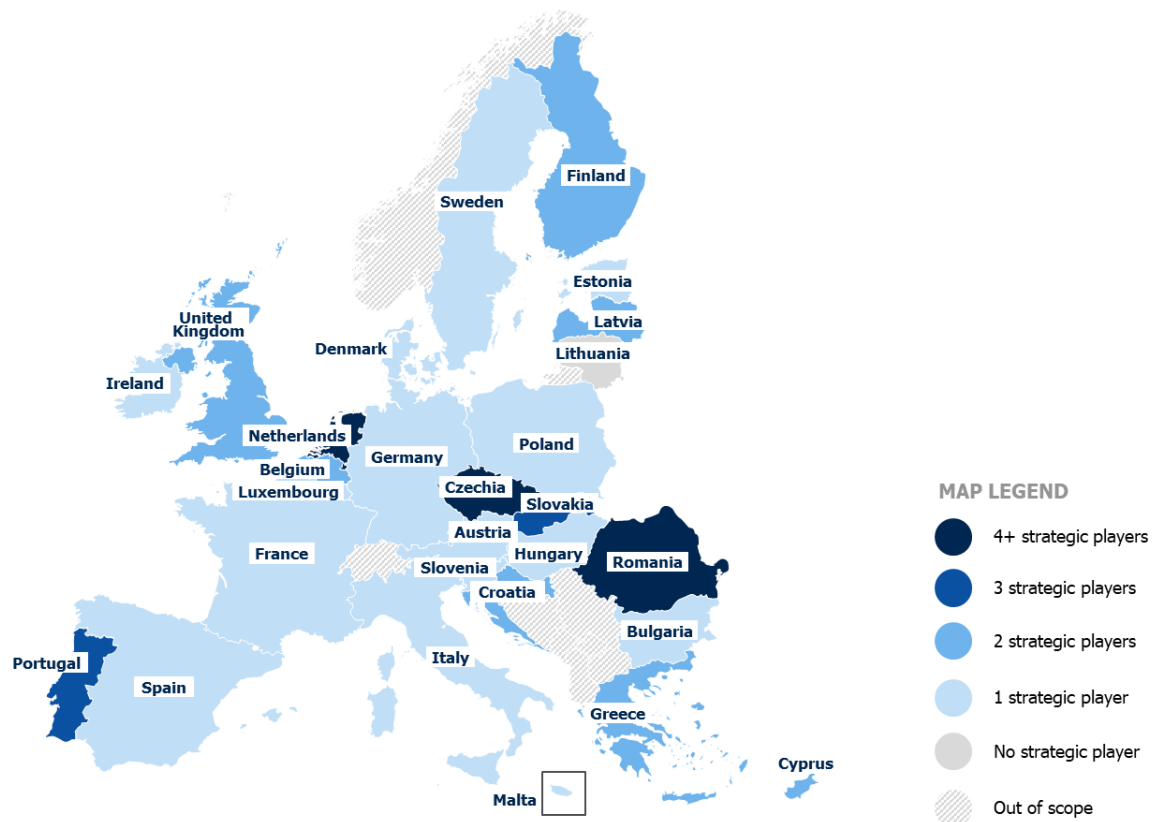
Source: Analysis performed by Wavestone, 2020.

2.2 Strategic players

While not every country included in this study has a governmental actor tackling OSS, a second type of actor was identified as one helping to promote the status of OSS in the public sector – **strategic players**. The term refers to, among others, non-governmental associations, organisations, and communities that aim to promote the use of OSS in the public sector at a national and/or international level and may collaborate with the public sector on OSS. While they work to shape the open source ecosystem in their countries, their actual influence may vary greatly. Furthermore, the number and size of strategic players in a given country by no means determines their collective influence on policymaking. Indeed, in countries where several strategic players were identified, their role and influence in shaping the open source ecosystem is often not so significant. There appears to be no correlation between the number of strategic players and the strength of the open source ecosystem in a given country.

This research identified a total of 58 strategic players spread across the 28-country sample, of which 52 are active. For the purposes of this research, only the 52 active strategic players were considered for analysis. All of the European countries were found to have at least one strategic player addressing the topic of OSS in the public sector as part of their work, with the exception of Lithuania (see Figure 5).

Figure 5 Number of strategic players involved in open source software in the public sector in 28 European countries



Source: Analysis performed by Wavestone, 2020.

To be classified as a strategic player, the body in question had to conduct at least one of the three following activities:

▶ *Advocacy:*

In the context of this research, advocacy refers to publicly supporting or recommending OSS or a specific OSS policy. While it is somewhat intuitive that all 52 strategic players would advocate for the use of OSS, in 10 instances, advocacy was found to be the only role of certain strategic players, meaning that they do not conduct further activities beyond voicing their support for OSS. In **Denmark**, OS2²² is considered to be a strong advocate for OSS. OS2 is an open source community and association that specifies, develops and governs digital solutions by municipalities and for municipalities. OS2 situates itself in the gap between solutions created by or on behalf of government, municipalities or suppliers. The **Belgian** Abelli²³ is an association for the promotion of free software. Their objective is to inform the broader public about alternative software that respects digital privacy. While voicing support for OSS is indeed helpful for the cause, tangible acts of support, such as capacity building, development, or implementation, are crucial to further boost the use and understanding of OSS and reduce the digital disconnect in the public sector.

▶ *Capacity building:*

Capacity building encompasses any activities or initiatives in place that promote OSS and/or help the public sector to better use or understand OSS solutions. Activities and initiatives may take the form of training sessions, workshops, presentations, and events for the public sector and citizens to learn about OSS and its benefits. For example, the **Latvian** Open Technology Association (LATA)²⁴ is highly active in capacity building efforts across the country, helping to carry out awareness-raising activities in schools and public sector training sessions as well as organising hackathons and conferences. Such activities seem to be highly popular with strategic players across all countries, with 27 of the 52 engaging in some form of capacity building on OSS, some of which is carried out specifically in schools so as to educate the younger generations from an early age.

▶ *Development and implementation:*

Similar to governmental actors, strategic players involved in development and implementation actively develop OSS itself or help to implement it through various national initiatives. In **Czechia**, for example, the Open Source Alliance²⁵ contributes to development and implementation by helping to develop a repository of OSS for public sector bodies that are interested in making the switch from proprietary

²² OS2, 2020, *OS2 in English*, viewed 6 October 2020 <<https://os2.eu/node/332>>

²³ Abelli, 2020, *Home*, viewed 3 August 2020 <<https://abelli-asbl.be/>>

²⁴ LATA, 2020, *Home*, viewed 20 July 2020 <<https://www.lata.org.lv/?lang=en>>

²⁵ Open Source Alliance, 2020, *Goals*, viewed 20 July 2020 <<https://www.osalliance.cz/en/>>

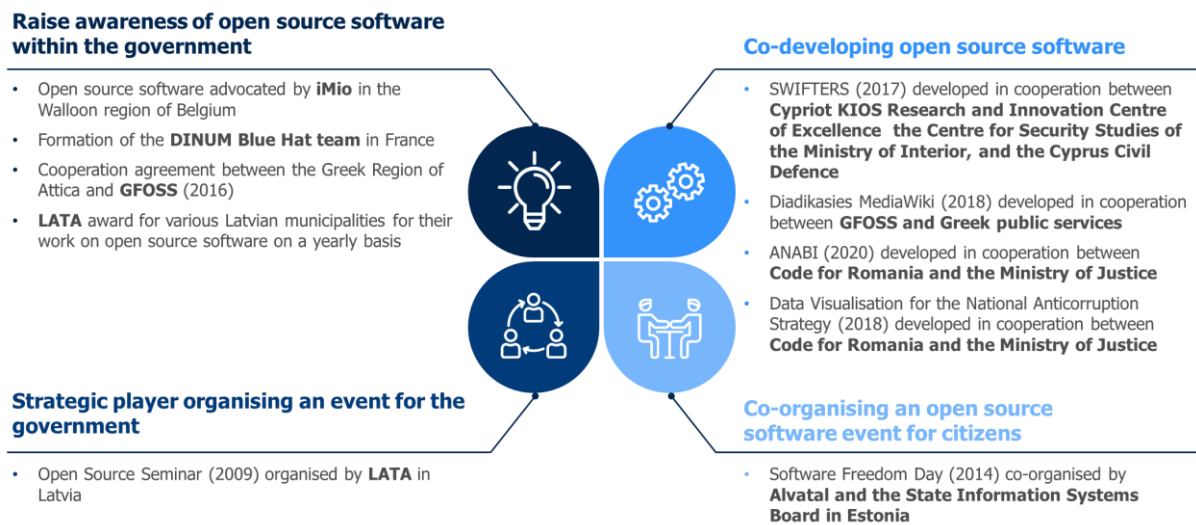
software. Similarly, the **French** Adullact²⁶ created an OSS repository for the public sector in addition to generally promoting the use and reuse of OSS nationwide. 24 of the 52 strategic players identified in this research were found to engage in some form of OSS development or implementation.

2.3 Collaboration between governmental actors and strategic players

Collaboration is one of the key principles behind the success of OSS, which contrasts with the well-established and set organisational nature of the public sector. Many public sector bodies are not fully aware of the collaborative open source values and their benefits. Therefore, the bodies are more likely to work in silos rather than cooperate with non-governmental actors, such as strategic players, on a joint initiative.

There are several instances throughout the OSS country intelligence reports of governmental actors and strategic players collaborating to promote the use of OSS in the public sector (see Figure 6): raising awareness of OSS in the public sector, co-developing OSS, co-organising an event, or even the government representatives following a training session organised by a strategic player.

Figure 6 Instances of collaboration between governmental actors and strategic players



Source: Analysis performed by Wavestone, 2020.

The collaboration is mutually beneficial to both governmental actors and strategic players. On the one hand, governmental actors can learn from strategic players who may have a stronger understanding of OSS and its benefits while strategic players can leverage support from governmental actors to increase the visibility and impact of their work and support their overall aims. 10 instances of collaboration in Figure 6 represented a minority from among all the initiatives, which is presented in the next section, Open source software initiatives. In fact, this research demonstrates that the majority of initiatives originate from public sector bodies and are not established thanks to collaboration with strategic players.

²⁶ Adullact, 2020, *Accueil*, viewed 20 July 2020 <<https://adullact.org/>>

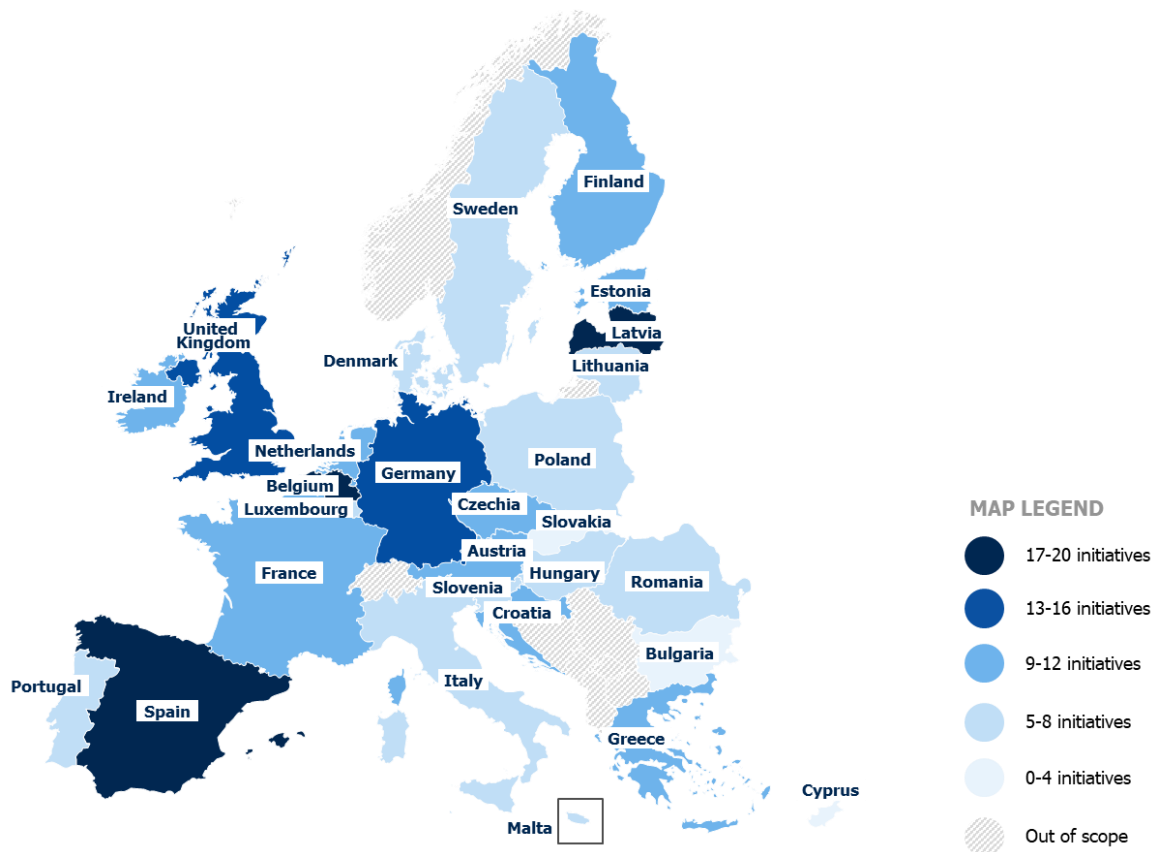
Nevertheless, it is a positive signal for strategic players and governmental actors to work together to promote OSS in the public sector.

3 Open source software initiatives

In addition to policy and legal frameworks, this research sought to identify OSS initiatives to further account for the status of OSS in the European public sector. For the purpose of this research, **initiatives are defined as plans, actions or projects implemented at the national, regional, or local level to achieve a particular aim or solve a problem.**

The research identified 259 public sector OSS initiatives across the 28-country sample. The distribution of these initiatives is shown in Figure 7. Interestingly, public sector OSS initiatives were found in every European country, even in those lacking a specific OSS policy and legal framework or a governmental actor working to promote the status of OSS.

Figure 7 Number of open source software initiatives in 28 European countries



Source: Analysis performed by Wavestone, 2020.

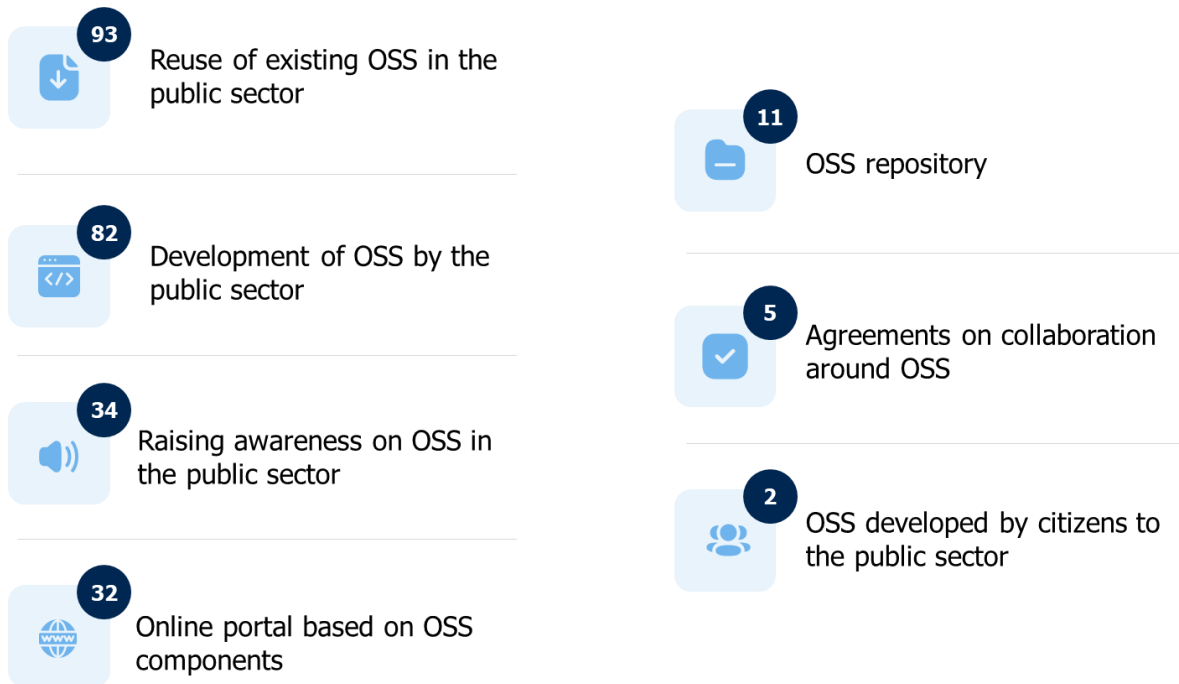
While it is not possible to claim that these 259 OSS initiatives are indeed the only examples of OSS in the public sector in Europe, the sample of observations combined with validation from the various national contact points strengthens the representativeness of the research findings, even in light of various research limitations, as outlined below.

Research Limitations

Our research is based on a sample of OSS initiatives identified through desk research. It is therefore not possible to claim that the 259 public sector OSS initiatives identified account for all initiatives in Europe. Language barriers, a lack of national contact point for certain countries²⁷, difficulties in uncovering data, and a lack of publicly available information regarding the use of OSS in the public sector mean that this sample may not be fully representative, even with extensive desk research and input from national contact points. It is highly plausible that many other public sector bodies are indeed using OSS, but this information is not publicly available or made known to a wider audience beyond the civil servants using the software.

The 259 OSS initiatives were categorised as outlined in Figure 8.

Figure 8 Categorisation of open source software initiatives



Source: Analysis performed by Wavestone, 2020.

The types of initiatives are explained below and complemented with examples from the individual Open Source Country Intelligence Reports²⁸. Given the research limitations, as explained above, the total numbers may not reflect reality.

- ▶ *Reuse of existing OSS in the public sector*: It allows public sector bodies to save valuable resources and benefit from a pre-existing community working around the software solution.

²⁷ The country intelligence reports for Bulgaria, Croatia, Denmark, Estonia, Greece, Hungary, Lithuania, Luxembourg, Malta and Poland were based solely on the desk research and were not validated by a national contact point.

²⁸ Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence*, viewed 20 July 2020 <<https://joinup.ec.europa.eu/collection/open-source-observatory-osor/open-source-software-country-intelligence>>

This research identified **93 initiatives** of software reuse in the public sector, including the use of Open Document Formats, Linux workstations, other desktop software in public sector bodies, and various pre-existing solutions being used for education, library and health services.

- ▶ *Development of OSS by the public sector:* As opposed to the reuse of existing solutions, the public sector also develops its own OSS solutions. Building new software is preferable when there are no existing solutions on the market that either fully meet the needs of a public sector body or can be adapted to meet these needs. This research identified **82 initiatives** of public sector bodies developing tailor-made OSS solutions from scratch for the delivery of public services in the areas of healthcare, education, library services, and general governmental services from public authorities.
- ▶ *Raising awareness of OSS in the public sector:* This can be done in various ways, and the research encountered **34 initiatives**. Events were found to be one of the most popular ways to advocate for and raise awareness of OSS. These can be, for example, conferences organised for the general public, training events or workshops for governmental civil servants, educational events for students, or awards for OSS projects in the public sector. Raising awareness of OSS was also encountered in initiatives such as launching a survey, citizens' initiative to encourage the public sector to use OSS, and forming OSS communities.
- ▶ *Online portal based on OSS components:* Developing online portals or websites that are based on OSS components, either partially or in full. Using open source components to build portals (e.g. Drupal and CKAN) can leverage the advantages of an OSS community's work in terms of interoperability, maintenance, upgrades, security, etc. Countries have built portals based on OSS in **32 initiatives**, be they the national open data portals, citizen portals, or various other governmental portals and websites.
- ▶ *OSS repository:* Listing and cataloguing various OSS solutions available for reuse either by other public sector bodies or anyone with a general interest in OSS. **11 such initiatives** were identified. Administrators can look for solutions, check the vitality of projects, explore the source code, and get in touch with the community working with the software solution. A comprehensive list of national OSS repositories is available on OSOR.²⁹ The list is updated on a regular basis.

²⁹ Open Source Observatory (OSOR), *OSS Repositories*, viewed 15 October 2020 < <https://joinup.ec.europa.eu/collection/open-source-observatory-osor/oss-repositories>>

- ▶ *Agreements on collaboration around OSS:* Signing an agreement on collaboration towards advocating the use of OSS. When two parties work together, they can pool their resources as well as exchange and learn from one another's experiences. Among the **five instances** of formal cooperation agreements, three are between the public sector and an organisation to pursue OSS (one in Greece³⁰ and two in Italy^{31,32}). The remaining two (in Lithuania³³ and in the United Kingdom³⁴) involve signing a framework between municipalities.
- ▶ *OSS developed by citizens for the public sector:* Open source projects developed by citizens for their advantage to participate in governmental processes. There were **two instances** in Estonia: Open Tartu³⁵ where a team gathers comments from citizens on governmental documents that can be presented to the city administration, and CitizenOS³⁶, a platform for starting petitions and collecting votes to be sent to the Estonian Parliament.

The OSS initiatives identified in this research has shown that throughout the 28 European countries studied, these initiatives can be grouped into seven categories. The top three categories, considering the advantages of OSS, are not surprising. 'Reuse of existing OSS by public sector' has the highest number of initiatives with 93. This number reflects the advantage of reusing an existing software or solution which can be adapted or customised according to specific needs. 'Development of OSS by public sector' category ensures transparency that governments aim for: the open source code makes software trustworthy. Finally, 'Raising awareness of OSS in the public sector' is mostly done through events spreading knowledge about the advantages and benefits of OSS.

³⁰ Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence Report on Greece (Section Open source software initiatives: "Region of Attica, 2016")*, viewed 28 July 2020 <https://joinup.ec.europa.eu/sites/default/files/inline-files/OSS%20Country%20Intelligence%20Report_GR.pdf>

³¹ Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence Report on Italy (Section Open source software initiatives: "Trento's Protocol of Understanding, 2017")*, viewed 28 July 2020 <https://joinup.ec.europa.eu/sites/default/files/inline-files/OSS%20Country%20Intelligence%20Report_IT_0.pdf>

³² Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence Report on Italy (Section Open source software initiatives: "Memorandum of Understanding between the Province of Pisa, the Tuscany Region, the University of Pisa, and the Technological Centre of Navacchio, 2008")*, viewed 28 July 2020 <https://joinup.ec.europa.eu/sites/default/files/inline-files/OSS%20Country%20Intelligence%20Report_IT_0.pdf>

³³ Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence Report on Lithuania (Section Open source software initiatives: "Memorandum on Open Data, 2017")*, viewed 28 July 2020 <https://joinup.ec.europa.eu/sites/default/files/inline-files/OSS%20Country%20Intelligence%20Report_LT.pdf>

³⁴ Open Source Observatory (OSOR), 2020, *Open Source Software Country Intelligence Report on the United Kingdom (Section Open source software initiatives: "Local Government Drupal initiative, 2020")*, viewed 28 July 2020 <https://joinup.ec.europa.eu/sites/default/files/inline-files/OSS%20Country%20Intelligence%20Report_UK.pdf>

³⁵ GitHub, *Open Tartu*, viewed 28 July 2020 <<https://github.com/infoaed/opentartu>>

³⁶ CitizenOS, *Home*, viewed 28 July, <<https://citizenos.com/>>

4 Key takeaways

This report presents a consolidated overview of the data that was gathered as part of the individual Open Source Software Country Intelligence Reports³⁷, examining the manner in which the 28 studied European countries address OSS in their respective policy and legal frameworks. It also lists the governmental actors and strategic players that influence and implement OSS policies along with various initiatives on OSS that were identified throughout the research process. This final chapter presents the key takeaways based on the findings of this research.

Takeaway: The **importance of OSS in public sector across Europe** is affirmed by governments **increasingly incorporating** OSS as part of their country's **political and legal framework**, with 26 out of the 28 countries studied having put in place legal and political initiatives referring to OSS. Most commonly, OSS policies and legislation are embedded in the broader digitalisation initiatives within the policy and legal framework of these countries.

The first identified initiative within the policy and legal framework addressing OSS dates back to 2001. Since then, every year, both political and legal initiatives have increased significantly, reaching a total of 100 initiatives over the course of two decades.

Takeaway: Among the 100 initiatives identified in this research, 25 political and 6 legal initiatives focus **exclusively on OSS** (adopted by 19 countries) while the remaining 50 political and 19 legal initiatives refer to OSS as part of the **broader topic of digitalisation**.

The relationship between political and legal frameworks and the type of governance in each country vary considerably. It is worth noting that almost all of the eleven countries³⁸ with a designated governmental actor assigned to OSS have policies that focus exclusively on OSS. However, this research found that it is not necessary for a country to have a designated governmental actor addressing this subject matter. Indeed, eight countries were found to have implemented political or legal initiatives focusing exclusively on OSS without having a designated governmental actor responsible for OSS in their country. Rather, such initiatives were adopted by public sector bodies appointed for broader digitalisation initiatives. Our findings on the importance of a specific category of OSS governance are inconclusive.

Takeaway: Public sector **OSS initiatives** were found in **every European country**, even in those which lacked a specific OSS policy and legal framework or a governmental actor working to promote the status of OSS in their country. However, most initiatives are led by countries with either policy

³⁷ Open Source Observatory (OSOR), 2020, *Knowledge Centre*, viewed 20 July 2020 <<https://joinup.ec.europa.eu/collection/open-source-observatory-osor/knowledge-centre>>

³⁸ Out of the eleven countries presented in Figure 4Table 2, only Belgium does not have a political or legal initiative focusing exclusively on open source software in place.

and legal frameworks explicitly addressing OSS or governmental bodies that have included OSS in their mandate.

Another key finding was the prevalence of public sector OSS initiatives in all European countries studied. 259 were identified across the country sample³⁹. Almost half of open source initiatives presented in this study are led by countries with governmental bodies that have included OSS in their mandate (see Figure 4). Most of the OSS initiatives (66%) are led by the 18 countries which have adopted a policy and legal framework explicitly addressing OSS.

The report consolidates the data on European OSS initiatives and policies. Building off the findings from the individual country intelligence reports, the report provides a clear overview of the policies, governance, and initiatives relevant to OSS in the researched European countries. Furthermore, it offers insights regarding the adoption of OSS initiatives in Europe and tracks the marked increase in their uptake over the last two decades. This trend underscores the increased importance being given to OSS by public sector bodies in the wake of a renewed European commitment to the digital transformation of Europe.

Takeaway: Although OSS is just one digital technology that can help guide the **digital transformation**, the benefits afforded to users in terms of **transparency, adaptability, and collaborative** potential positions OSS as a highly unique offering available to all **public sector** bodies. This report highlights the impact of this gradual realisation across Europe, culminating in the implementation of various OSS initiatives and the establishment of OSS bodies.

It appears as though European public administrations are realising the potential for OSS in providing interoperable, adaptable, and secure digital public services, and it is hoped that this positive trend will continue in the years to come.

³⁹ The number of initiatives per European country is detailed in chapter 3 Open source software initiatives

