

Lisbon Council Policy Brief

## The 2021 State of Co-Creation Delivering Services Together

By Charlotte van Ooijen, Francesco Mureddu and the Co-VAL Stakeholder Panel



Where do we come from  
What Are We?  
Where Are We Going?

## About the Understanding Value Co-Creation in Public Services for Transforming European Public Administrations (Co-VAL) project



The **Understanding Value Co-Creation in Public Services for Transforming European Public Administrations project**, or **Co-VAL**, is a 12-partner consortium funded by the European Union. The project received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 770356. For more, visit <http://www.co-val.eu/> or follow the consortium on Twitter at [https://twitter.com/CoVAL\\_eu](https://twitter.com/CoVAL_eu).

The 12 partner organisations are University of Alcalá, Athens Technology Center SA, SDA Bocconi School of Management, Corvinus University of Budapest, the University of Edinburgh, Inland Norway University of Applied Sciences-INN University, the University of Konstanz, the University of Lille, The Lisbon Council, PricewaterhouseCoopers Advisory S.p.A., Roskilde University and the United Nations University Maastricht Economic and Social Research Institute on Innovation and Technology (UNU-MERIT).

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Members of the **Co-VAL Stakeholder Panel** meet at **The 2019 Co-Creation Summit** in Cagliari, Italy

### About the principal authors

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Co-creation, or the involvement of users in developing public services and policies, has become a fundamental component of public-sector reform and digitalisation.<sup>1</sup> Government ministers have known for a while that something new was happening: *The 2017 Tallinn Ministerial Declaration on eGovernment* called for government to use digital means to “involve citizens more in the creation of public services” while *The 2020 Berlin Declaration on Digital Society and Value-Based Digital Government* proposed “wider participation in policymaking by involving society in the design of public services through co-creation, experimentation and collaboration.”<sup>2</sup> But it took the COVID-19 pandemic to accelerate the urgency of delivering easily accessible, well-designed public services to citizens in need.<sup>3</sup> More and more people see that improved service delivery and better service design cannot be achieved in isolation. Input from and interaction with end users and other key stakeholders in the public service chain are essential to create modern services that meet

citizens’ needs. And the good news is we have the tools, knowledge and experience to deliver them.

To make sure that potential becomes policy and that policy delivers improvement in people’s lives, researchers in the **Understanding Value Co-Creation in Public Services for Transforming European Public Administrations (Co-VAL)** consortium and a panel of 27 stakeholders who agreed to advise them created the [Co-Creation Dashboard](#), an interactive monitoring service that tracks public-service co-creation initiatives in the 27 European Union member states, the United Kingdom and six leading cities.<sup>4</sup> The monitoring is intended to be dynamic, using a traffic light system to judge the level of commitment and to measure progress as and when it happens. Green means a country or city is racing ahead in that particular field; yellow indicates that a country is on the right path; red means there has been relatively little adoption or there are other causes for concern. Black indicates

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1 See Francis Gouillart and Tina Hallett, “Co-Creation in Government,” *Stanford Social Innovation Review* Spring 2015; Jacob Torfing, Eva Sørensen and Asbjørn Røiseland, “Transforming the Public Sector Into an Arena for Co-Creation: Barriers, Drivers, Benefits and Ways Forward,” *Administration & Society* 1–31 2016; Stephen P. Osborne, Zoe Radnor and Kirsty Strokosch, “Co-Production and the Co-Creation of Value in Public Services: A Suitable Case for Treatment?” *Public Management Review* 18.5, 2016. Graham Smith, *Democratic innovations. Designing Institutions for Citizen Participation* (Cambridge: Cambridge University Press, 2009).

2 Council of the European Union, *The 2017 Tallinn Ministerial Declaration on eGovernment* (Brussels: Council of the European Union, 2017). Council of the European Union, *The 2020 Berlin Declaration on Digital Society and Value-Based Digital Government* (Brussels: Council of the European Union, 2020); European Commission, *EU eGovernment Action Plan 2016-2020*, (Brussels: European Commission, 2016).

3 David Osimo, “How Digital Government Has Risen as an Essential Tool in Times of Crisis and Lockdown,” *The Forum: A Lisbon Council Blog*, 24 August 2020.

4 The six cities are Amsterdam, Athens, Madrid, Milan, Paris and Turin. Having advanced practices concerning digital services and design thinking, these cities agreed to participate in the survey and allow themselves to be benchmarked against their peers. For more, visit <https://www.co-val.eu/dashboard/municipalities/>. For a list of the members of the Co-VAL Stakeholder Panel, see Annex 4 on page 66.

## ‘The Co-Creation Dashboard tracks the policies, practices and drivers of transformation in 28 countries and six cities.’

no data was available. Along with a handy visualisation designed to bring nuance and accuracy to the state of play in the countries in question, the traffic-light system aims to answer larger questions such as, how well are national administrations able to facilitate co-creation at the local level where it will affect citizens the most? What are the crucial areas that civil servants are overlooking where quick steady progress could be made?

Since the data was first compiled and analysed in **The State of Co-Creation**, a 2020 policy brief, the **Co-Creation Dashboard** shows more and more European countries and cities are taking the practice of co-creation to a higher level and making user involvement an integral part of digital government. At the same time, it reveals persistent challenges in several key areas and points to a need for better monitoring as a transversal challenge in all areas. In order to improve the uptake of digital public services by citizens and businesses, it is necessary to increase co-creation between national- and local-government stakeholders. This must happen not only through the ongoing development of centralised service modules, such as base registries and citizen portals, but also by aligning national and local efforts on the monitoring of digital government and co-creation.

The Co-Creation Dashboard tracks the policies, practices and drivers of transformation in 28 countries and six cities. Using a comprehensive set of indicators detailed in Annex I on page 26, the data is divided into five categories: 1) policy, 2)

interoperability and reuse, 3) collaboration, 4) skills and 5) monitoring. **Policy** measures the priority being given to co-creation and interoperability in digital government plans and procedures. **Interoperability and reuse** maps the extent to which public administrations share data and software solutions with other administrations. **Collaboration** tracks the involvement of users in the creation and design of services, as well as the acceptance of what are known as “trust services” for using services provided by public administrations. **Skills** measures the uptake of civil servant training on offer and the recruitment of managers with recent private sector experience. **Monitoring** deals with the effects implemented by public administrations to measure their progress on digital government and co-creation through key performance indicators.

Among the key findings:

- Regarding “policy,” a strategic approach to digitalisation with explicit consideration of the European Interoperability Framework (EIF) has become mainstream across Europe, but the same cannot be said for co-creation. **Estonia** is the only country that explicitly foresees co-creation in public service development as part of a national digital agenda. Several other countries mention co-creation or collaboration in their digital plans, but this is usually not (explicitly) related to public service design. This points to an overall lack of formal requirements for user involvement in digital government, which can lead to the

## 'Estonia is the only country that explicitly foresees co-creation for all digital service innovation projects of the national digital agenda.'

legitimacy of co-creation practices being questioned.<sup>5</sup>

- When it comes to “interoperability and reuse,” countries have made impressive strides on making base registries more widely available and developing national eID systems and other transversal key services, such as ePayment and digital mail. However, only a small minority of countries can demonstrate a high adoption of these services at the local level. For instance, all municipalities in **Denmark** and the **Netherlands** have implemented the national eID in the digital services offered to their constituents.
- Looking at “collaboration practices,” it is seen that while co-creation may not be mainstream in national digital plans, every country has adopted some form of co-creation in practice. **Austria** applies co-creation in several current top priority projects with citizen interface. **France** created a collaborative dashboard where citizens could inform the government about priorities in service digitalisation and their specific needs and preferences. Additionally, all countries display a high percentage of fully digital key services.
- In the area of “skills,” only a handful of countries and cities claim to have leveraged private sector knowledge and competences by hiring managers with such experience. And while several countries and cities have initiatives in place to boost public servants’ digital competences, most of them indicate having provided such training to less than 10% of their staff or not knowing how many public servants received such training. Only *La Escuela de Formación del Ayuntamiento de Madrid (EFAM)*, the **Madrid** city council training school, estimates having trained at least 10% of municipal employees on digital matters.
- “Monitoring” turns out to be a transversal challenge, since there is a lack of available data on important actions in all aforementioned key areas, such as formal requirements for co-creation (policy), the actual use of available application programming interfaces (APIs) and service module adoption by local authorities (interoperability and reuse), the uptake of eID and the number of co-creation exercises (collaboration) and the number of digitally skilled public servants (skills). The most fully fledged monitoring systems are found in **Denmark**, **Italy** and **Spain**, which regularly collect and publish uptake data on a large range of indicators. Among the countries that have key performance indicators (KPIs) on digital government in place, only Denmark, **France**, **Greece** and the **United Kingdom** measure aspects of co-creation.

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5 A detailed analysis of 56 best practices of co-creation across Europe equally supports this assessment. See [Charlotte van Ooijen and Francesco Mureddu, “Co-Creation at Scale: How Service Design, Living Labs and Innovation Networks Help Public Servants Deliver Better Services – and How Those Services Can Be Made Sustainable,” Lisbon Council Interactive Policy Brief, 26/2021.](#)

## ‘While co-creation may not be mainstream in national digital plans, every country has adopted some form of co-creation in practice.’

Alongside this report, the [Digital Government MetaMonitor](#) provides an additional analysis of countries’ efforts in monitoring users’ uptake of digital government.<sup>6</sup> Among other findings, the analysis shows that it is easier to find up-to-date and machine-readable data on the uptake of eID solutions than other key services, such as ePayment and Messaging. It also shows that Italy, quickly followed by the United Kingdom, Portugal and Spain provides the best data on the use of the national ePayment system. The Netherlands, followed by Denmark, performs at a high level on the provision of data on the national digital mail solution.

This policy brief is divided into four sections. Section I describes the structure and history of the Co-Creation Dashboard. Section II presents new insights from the Co-Creation Dashboard at the national level and discusses additional developments that have taken place since the 2020 edition presented in *The State of Co-Creation*. Section III discusses the Dashboard findings at the municipality level in conjunction with the national level

results to determine to what extent co-creation at the local level is supported by the central government. Section IV provides some concluding thoughts and proposes a more sustained monitoring effort to ensure that progress on the ground is real, that efforts deliver demonstrable wins and that public administration remains on the true path.

The policy brief also presents individual country overviews for 27 EU member states, the United Kingdom and six leading cities, beginning on page 29.<sup>7</sup> By providing an analysis on the state of co-creation in Europe, we want to support the many initiatives and efforts to use this novel tool to deliver better services to people in times of need. In particular, the analysis of the Co-Creation Dashboard could serve as a base measurement for progress on the Berlin Declaration, which places co-creation of public services at the centre of public-sector innovation. Additionally, the Co-Creation Dashboard and the MetaMonitor could fill an important hole, serving as a basis for monitoring progress and gaps in the years ahead.

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6 The Digital Government MetaMonitor (beta) represents an additional analysis undertaken by the Co-VAL consortium to give an overview of countries’ monitoring efforts regarding digital government uptake. It is an evolving tool, which may serve to harmonise the different approaches across Europe. Currently, the MetaMonitor considers nine countries: Denmark, Estonia, France, Germany, Italy, the Netherlands, Portugal, Spain and the United Kingdom. For more details on the methodology and for access to the project’s open data, visit <https://metamonitor.eu/>.

7 The country summaries can also be downloaded on the Co-VAL website at <https://www.co-val.eu/>.

## I. The Co-Creation Dashboard: Key Areas and Evolution

The Co-Creation Dashboard is an online tool for collating and mapping key initiatives on digital government and co-creation across EU member states, the United Kingdom and leading municipalities. The dashboard evaluates progress and adoption rates through 18 national level and 19 local level indicators, which largely overlap. Thirteen indicators are binary (Yes/No), five involve an integer number and three indicators are based on a percentage figure.<sup>8</sup>

Since its inception, the Co-Creation Dashboard has been enriched through three iterations (see Table 1).<sup>9</sup> The data have been collected using a combination of expert input by Co-VAL stakeholders and research partners, and desk research analysing websites and key policy reports at the EU, national and local levels of government.<sup>10</sup>

Table 1. Co-Creation Dashboard History

Phase	Completion	Scope
v 1.0	31/05/2019	Initial data collection for six pilot countries (Austria, Belgium, Denmark, France, the Netherlands, and Spain) and four pilot municipalities (Amsterdam, Madrid, Milan and Turin)
v 2.0	01/03/2020	Complementary data collection for remaining countries and one additional municipality (Athens)
v 3.0	31/03/2021	Final data collection for all countries and updated data for Madrid and Paris

8 See Annex 1 on page 26 for more explanation.

9 The first two iterations have been consecutively documented in the following reports: [Stéphanie Lepczynski, "Complete Co-VAL Dashboard," Co-VAL Deliverable 9.4, 2019](#); [Anthony Arundel, Francesco Mureddu and David Osimo, "The State of 'Co-Creation': How Countries, Cities and Regions Are Using New Thinking to Deliver Better Services," Lisbon Council Policy Brief, 13.1 \(2020\)](#).

10 The dashboard equally benefitted from the results of the Co-VAL project itself and the interaction with a network of European and international researchers. See the Resources section on the [Co-VAL website](#) for all relevant outputs. For a more detailed description of the dashboard methodology, including data collection methods and the construction of indicators, see [Francesco Mureddu, Marcello Verona and David Osimo, "Online Prototype Tracker," Co-VAL Deliverable 9.2, 2019](#).

## II. Progress at the National Level

The analysis of Co-Creation Dashboard data can generate answers to key questions, such as, how do co-creation policies and practices play

out on the ground and how did they evolve in the course of the year 2020?<sup>11</sup>

### Policy



- Overall excellent progress on aligning national digital plans with the European Interoperability Framework;
- In most countries, co-creation is not foreseen for all service innovation projects.

All countries on the dashboard have a national digital plan. According to the 2019 results of the European Commission’s monitoring exercise, they are well aligned with the European Interoperability Framework, albeit it with varying strengths per country.<sup>12</sup> For instance, **Croatia** with its eCroatia 2020 Strategy, **Slovenia** with its Digital Slovenia 2020 Strategy and **Slovakia** with its 2030 Strategy for the Digital Transformation show an overall good performance of the EIF implementation, with particularly positive results on interoperability layers). **Belgium**

with its Digital Belgium Action Plan also has a good EIF performance and excels on interoperability. **Cyprus** with its Digital Strategy for Cyprus can equally note an overall good EIF performance while showing particularly positive results within the scoreboard related to the Conceptual Model for Integrated Public Services Provision.

Regarding the question whether the national digital plan explicitly includes the use of co-creation for ALL innovation projects that involve services, only **Estonia** provides a convincing “yes.” Within the Smart Public Governance Pillar of the Estonian Digital Agenda 2020, activities to support the development and cooperative creation of services are explicitly foreseen. This strategic support for co-creation is reflected in a high progress for the country on collaboration

11 The data used in this analysis were accessed on 30 March 2021.

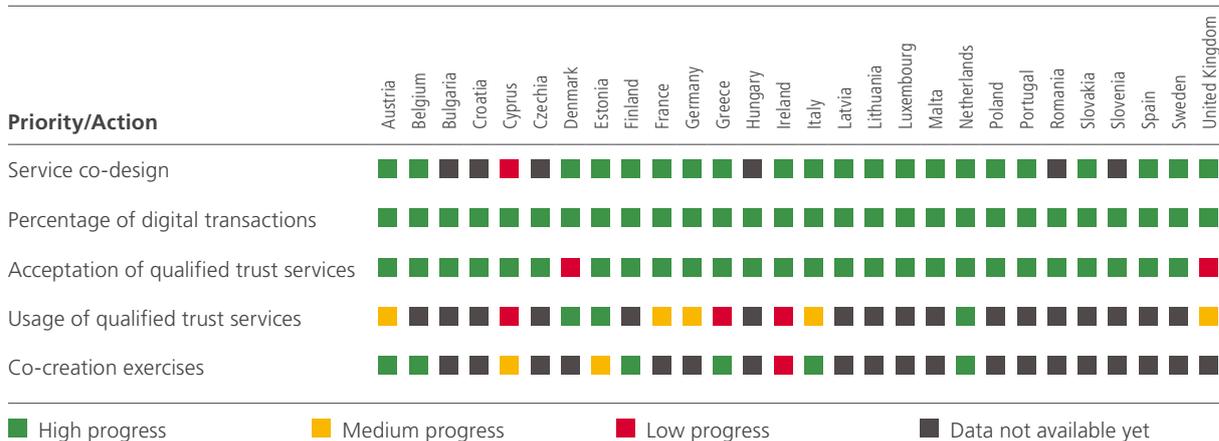
12 The country-specific results of the 2019 EIF monitoring exercise are available in the [Digital Government Factsheets 2020](#).

## 'All countries on the dashboard have a national digital plan aligned with the European Interoperability Framework.'

practices. A remarkable initiative is the commitment of Estonian reformers to develop a new information system for involving citizens in policy development. The system will open a user-friendly space for government officials and citizens to co-create policies.

Civil servants will be able to co-work on the same text across ministries and with experts outside of government through a collaborative environment similar to Google Docs or Microsoft Office Online.

### Collaboration



- Overall high progress on the use of service co-design, the percentage of digitally issued services and the acceptance of eIDAS qualified trust services;
- Varied level of progress on the use of eIDAS compliant eID and the level of co-creation exercises.

Even if they do not foresee co-creation for all service innovation projects, several countries do underline the importance of co-creation in their digital strategies and translate this into concrete collaborative action. The SIMPLEX programme for state modernisation in **Portugal** encompasses an innovative public consultation devised to involve citizens, businesses and public administration in the

co-creation of simplification measures. At the same time, LabX, an Experimentation Laboratory for Public Administration provides a space where public authorities can test innovative solutions in real contexts with citizens to improve public services. In **Ireland**, the Our Public Service 2020 strategy foresees involving the public in the design and delivery of services to support an increased focus on outcomes for the public of service delivery. The service portal gov.ie includes a page that sums up all the current public consultations where citizens can take part. **Malta** has included open government actions in the areas of open government data and eDemocracy in the Digital Malta Strategy 2014-20. Among other initiatives, the Maltese government

# 'It is clear that there is an overall lack of formal requirements for user involvement.'

plans to develop an eParticipation platform along with associated best practices and tools.

Even though several countries do mention co-creation in their digital plans, it is clear that

there is an overall lack of formal requirements for user involvement, which can lead to the legitimacy of co-creation practices being questioned.<sup>13</sup>

## Interoperability and Reuse



- Overall high progress on improving the accessibility of base registries and the provision of centralised service modules;
- Highly varied performance on the provision of application programming interfaces across countries;
- Low data availability on uptake-related indicators.

European countries have clearly made it a priority to improve the access to base registries, among other means by strengthening their open data initiatives and developing application programming interfaces (APIs), and now make a wide range of centralised service modules available to public organisations at different levels of government. However, on the reuse of these centrally provided solutions, the picture is less clear.

<sup>13</sup> A previous Co-VAL policy brief also pointed out the need to strengthen the legitimacy of co-creation in order for it to become a sustainable practice. For more information, see Charlotte van Ooijen and Francesco Mureddu, *Ibid.*

## 'European countries have clearly made it a priority to improve the access to base registries.'

One year along, it remains very challenging to collect comparable quantitative data on the three co-creation indicators related to digital government uptake: the number of users of government APIs, the average number of calls to the APIs per month and the percentage of local authorities adopting centralised service modules (e.g. eID and ePayment) in the provision of digital services to their constituents.

The government of **Greece** remains the only one able to provide an estimate on the number of API users, amounting to 75 users and around 2.7 million API calls per month for the 25 APIs made available by the Interoperability Center of the Ministry of Digital Governance (KE.D). A similar picture can be seen in **France**, which reports on average almost 2.5 million calls per month by an unknown number of French administrations to the 26 APIs to retrieve business data.

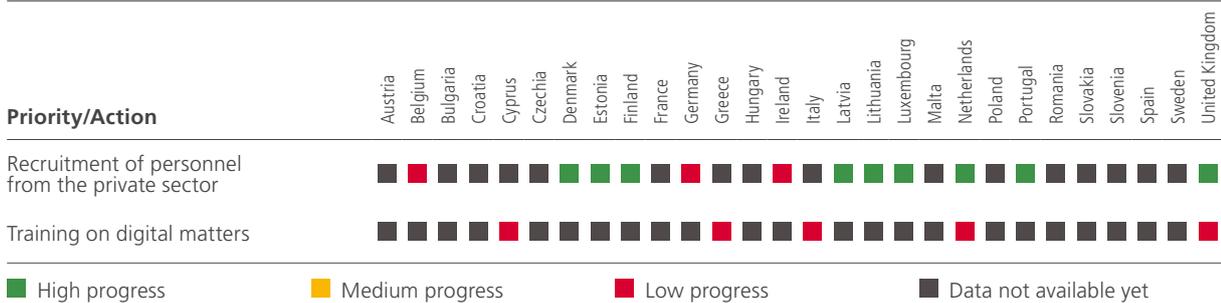
When it comes to the uptake among local authorities of centralised service modules, most countries with available data show high progress with a 100% adoption rate of central service portals in **Austria** and **Hungary**,

100% municipal use of the national eID in **Denmark** (NemID) and the **Netherlands** (DigiD), 89% in **Spain** (Cl@ve) and a 54% use of the tax registry operated by the Central Union of Local Authorities (KEDE) in **Greece**. Local authorities in **Germany** show medium progress with a 15% use of the federal eID service to offer access to local digital services.

For the countries without available quantitative data for this specific indicator, the dashboard does present a wealth of related quantitative and qualitative data giving insight into digital government adoption across the public sector. For instance, in **France**, impressive progress has been made regarding the adoption of the national eID system FranceConnect, which moved to more than 720 available digital government services and 30 private services by the middle of 2020, up from around 500 at the end of 2019. Additionally, **Portugal** reports for 2020 that 123 connected public organisations had over 1,852 million interactions on the Interoperability Platform for the Public Administration (iAP), which connects several base registries and provides eID, ePayment and SMS service modules.

‘The government of Greece remains the only one able to provide an estimate on the number of application programming interface users.’

## Skills



- Almost a third of the countries have recruited officials in management positions from the private sector;
- None of the countries can confirm having provided digital skills training to more than 10% of public servants.

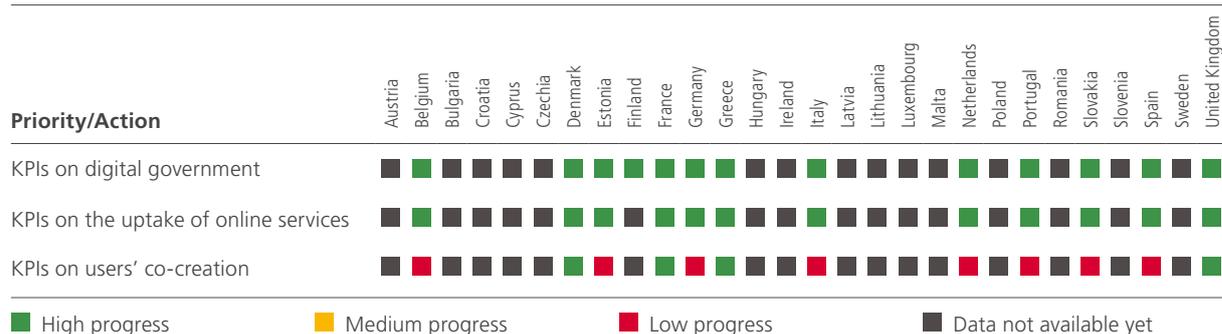
While all nine countries that have demonstratively attracted public managers with private sector experience have initiatives in place to involve users in the design of services (collaboration), it is far from sure that countries develop such innovative practices thanks to private sector insights. Twelve more countries are engaged in service co-design, for most of which the background of managers is unknown.

Whereas data on the number of trained public servants on digital matters is particularly scarce, information on the provision of such

training is more widely available. In addition to the initiatives mentioned in the 2020 policy brief, the following noteworthy practices have been documented on the dashboard in the course of the year. These illustrate different approaches towards getting the digital skills of public agents up to par. The Public Action 2022 Strategy in **France** foresees the creation of a public transformation university, dedicated to accompanying and training project managers on matters of user centricity, agility, innovation and digital transformation. **Ireland** offers open data training to public bodies all over the country. In **Italy**, the Italian government has created a syllabus on digital skills for the public administration and a course catalogue is currently under development. The National Institute of Public Administration (INAP) in **Luxembourg** proposes training on digital skills divided into different topics: basic digital skills, technical skills and digital skills for management.

'In the area of "skills," only a handful of countries and cities claim to have leveraged private sector knowledge.'

## Monitoring



- Almost half of the countries have developed KPIs on digital government, which in almost all cases include indicators measuring the uptake of digital services;
- Four countries have indicators on co-creation among the digital government KPIs;
- For more than half of the countries it is not clear whether they have digital government KPIs outside the EU measurement frameworks.

While several EU measurement frameworks include digital government indicators at the national level, it is not clear to what extent member states use these to drive or account for their performance.<sup>14</sup> Twelve EU countries and the United Kingdom have demonstratively developed national level key performance indicators (KPIs), which for

most countries include indicators related to the use of digital services. The inclusion of indicators measuring co-creation is far from common ground. Notable exceptions are found in **Denmark, France, Greece** and the **United Kingdom**. In Denmark, the Agency for Digitisation publishes indicators on the uptake of its key digital services, such as the eID solution NemID, Digital Post and the citizen portal [Borger.dk](https://borger.dk).<sup>15</sup> The Danish dashboard also presents several indicators related to user satisfaction. The Digital Public Services Dashboard in France includes an indicator on user satisfaction, which is seen as an important indicator of service quality.<sup>16</sup> This indicator goes beyond simply asking citizens to indicate their level of satisfaction with the service they just used. Users are able to give detailed feedback on the service experience, for instance on ease of use and comprehensiveness of information. In Greece, KPIs on co-creation have been defined for

14 The EU digital agenda captures several key performance indicators linked to digital public services, e.g. the Digital Public Services Pillar of the [Digital Economy and Society Index \(DESI\)](#), the [eGovernment Benchmark](#) and [eHealth indicators](#).

15 The Statistics Dashboard of the Agency for Digitisation can be consulted at <https://digst.dk/tal-og-statistik/> (in Danish).

16 The Digital Public Services Dashboard can be consulted at <https://observatoire.numerique.gouv.fr> (in French).

## ‘Local authorities in Germany show medium progress with a 15% use of the federal eID service.’

the evaluation of the Public Sector Reform Programme 2014-2020. These include the number of projects aimed at enhancing citizen participation and the number of projects to enhance information. The Government Digital Service in the United Kingdom provides detailed instructions to public organisations on measuring user satisfaction and provides a standard GOV.UK feedback page for them to use.<sup>17</sup>

Even though **Spain** and **Italy** do not have KPIs related to co-creation, both countries show a highly impressive monitoring system for digital government. The Spanish online dashboard DATAOBSAE of the Electronic Administration Observatory (OBSAE), presents data related to a wide range of digital services.<sup>18</sup> Depending on the type of service, the data is updated on a monthly or yearly basis and can be downloaded in machine-readable format, thereby facilitating and encouraging further reuse of the data. Besides providing statistics related to citizens and businesses as end users, the platform

also allows for a detailed analysis of the adoption of centralised service modules at different levels of government. The Digital Transformation Progress dashboard of the Agency for Digital Italy (AGID) shows indicators for the digital transformation of the Italian public sector, which in most cases are updated on a monthly basis and are available in machine-readable format.<sup>19</sup> The uptake of the eID service SPID and ePayment service pagoPA are among the indicators. Furthermore, the link between the presented indicators and the European Digital Economy and Society Index is explicitly recognised.<sup>20</sup>

*The 2020 State of Co-Creation* already signalled the challenge of low data availability on the uptake of digital public services. This has led the Co-VAL consortium to perform a broader assessment of digital government uptake data in selected European countries. This additional analytical effort has been made available as an online monitor: the Digital Government MetaMonitor.

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17 For more information, see <https://www.gov.uk/service-manual/measuring-success/measuring-user-satisfaction>.

18 The DATAOBSAE can be consulted at [https://dataobsae.administracionelectronica.gob.es/cmobsae3/dashboard/Dashboard.action?request\\_locale=en](https://dataobsae.administracionelectronica.gob.es/cmobsae3/dashboard/Dashboard.action?request_locale=en).

19 The Digital Transformation Progress Dashboard can be consulted at <https://avanzamentodigitale.italia.it/it> (in Italian).

20 See <https://avanzamentodigitale.italia.it/it/faq#come-funziona> (in Italian).

**'Data on the number of trained public servants on digital matters is particularly scarce.'**

### **The Digital Government MetaMonitor**

The Digital Government MetaMonitor (beta) is a pilot project that provides an overview of the wealth and diversity of digital government uptake data in nine European countries: Denmark, Estonia, France, Germany, Italy, Portugal, Spain, the Netherlands and the United Kingdom. For different groups of service stakeholders (citizens, businesses and public sector institutions) it assesses the completeness, update frequency and machine readability of uptake data on five key digital services: eID, ePayment, Messaging, Transparency and General Digital Services and brings the original uptake data together in one place. Is the relevant data available? How often are these updated? Are they available in machine-readable format? These three questions have guided the meta-analysis of the 51 selected key uptake indicators, among which are featured: the cumulative number of activated eID accounts, the cumulative number of public organisations using the central ePayment system and the annual number of messages sent to businesses using the government digital mail system. Visit [www.metamonitor.eu](http://www.metamonitor.eu) for more insight.

D'où Venons Nous  
Que Sommes Nous  
Où Allons Nous



### III. Supporting Co-Creation at the Local Level

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In this section, the dashboard findings at the municipal level are discussed in conjunction with the findings from their central or federal level counterparts to determine to what extent co-creation at the local level is supported by the central or federal government.

#### Athens

When considering the digital co-creation landscape in Athens in relation to that of Greece at the national level, a weak alignment can be seen, which hinges on the connection through centralised service modules.

The City of Athens has aligned its Digital Roadmap with the Greek e-Government Interoperability Framework, which in turn is aligned with the EIF. A key priority of the Athens Digital Roadmap is to engage with government institutions to deepen collaboration for the design and implementation of digital services. The city's co-creation activities take place through local initiatives rather than being incited by the national government. Athens has been involved in co-creation through the Athens Digital Lab, which is a research and development lab for smart cities' digital solutions that supports the development and maturation of applications addressing needs and challenges of the city.

Athens is internationally active, connecting with several cities worldwide through projects like the Living in EU network aimed at

boosting sustainable digital transformation and participating in over 15 EU projects.

The City of Athens has adopted two centralised service modules: the E-authentication Service oAuth 2.0 to provide citizens with access to municipal digital services and the e-payment module for e-parking. Unlike the Greek national government, its capital has not developed any initiatives to make base registries accessible, including the provision of APIs. Athens does not appear to be linked to the Interoperability Center of the Ministry of Digital Governance (KE.D), which is the national information system interconnecting the electronic services of the public administration.

#### Paris

When considering the digital co-creation landscape in Paris in relation to that of France at the national level, it becomes apparent that Paris has the ambition to be a digital co-creation champion without relying on support from the national government.

The city's initiatives for user involvement in digital service development seem to be quite disconnected from developments at the national level, but very much connected to the international level. The city's collaboration efforts first and foremost focus on creating value for Parisians and their businesses. In the strategic plan Paris. Smart and Sustainable. Looking Ahead to 2020 and Beyond, Paris has explicitly adopted the "Open City Method," emphasising "the belief that the solutions of tomorrow will emerge through collective intelligence and the collaboration

**‘The inclusion of indicators measuring co-creation is far from common ground. Notable exceptions are found in Denmark, France, Greece and the United Kingdom.’**

between public stakeholders, businesses, researchers and citizens.”<sup>21</sup> The city thus places people at the centre by giving them the means to understand and take ownership of the material and data flows that traverse the city.

As one of the pioneers of the Open Government Partnership (OGP), Paris is one of the leading cities worldwide when it comes to promoting transparency and open government, fighting corruption and using new and digital technologies to strengthen citizen participation. This leading role is also expressed through Paris’ involvement in several other international networks on smart cities and urban science: the Fab City Network, the Smart City Charter and Data City International. Consequently, Paris has developed an Open Data and Data Governance Policy leading to the mass release of financial, social, urban planning, environmental and transportation data consolidated in 281 published datasets on the municipal open data portal, which are equally available on the national open data portal. The national portal even offers 456 datasets produced by the City of Paris, pointing to a less than airtight synchronisation between the two portals.<sup>22</sup>

“La Transfo” was one of the co-creation projects that Paris was involved in. This project, launched in September 2016, aimed to test and co-create a public innovation

laboratory with city officials. A group of 20 testers from all city departments worked over the course of 18 months with designers, researchers and users to provide a new perspective on the recurrent issues faced by city administration.

The eID-system FranceConnect is in full development nation-wide, but the adoption by the city of Paris is very limited. While other big French cities Lyon and Toulouse offer access to their citizen portal through FranceConnect, Paris holds on to its own authentication system “Mon Paris.” One municipal service is available for FranceConnect users: the reservation of tennis courts.

No evidence has been found of the existence of a monitoring system, despite the city’s expressed ambition to develop a dashboard with key indicators, with which it would have followed in the footsteps of its national counterpart.

## **Milan and Turin**

When considering the digital co-creation landscape in Milan and Turin in relation to that of Italy at the national level, it becomes apparent that the thus far weak national-local link is slowly strengthening through centralised service modules and a strongly coordinated effort regarding the population registry.

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21 [City of Paris, “Paris. Smart and Sustainable. Looking Ahead to 2020 and Beyond,” 2018.](#)

22 The authors consulted the municipal open data portal, [opendata.paris.fr](https://opendata.paris.fr) and the national open data portal [data.gouv.fr](https://data.gouv.fr) on 31 March 2021.

## 'Athens has been involved in co-creation through the Athens Digital Lab.'

Milan and Turin are both well-connected urban hubs that are active in international and European networks on digital government. Both cities demonstrate a vibrant participation in EU projects: 15 in the past five years for Milan and more than 18 for Turin. Milan spearheads an initiative called Digital Bridges, where the city makes partnership and connections with top European and international cities that excel in digital services. For instance, Stockholm helped Milan push for digital payments, and in exchange, Milan helped Stockholm with an Industry 4.0 agenda. Tel-Aviv offered strategic advice on security platforms while Milan shared insights on their women in STEM and ICT careers strategy. The strategy behind the Digital Bridges is to make sure Milan can compare itself against the best in class and improve accordingly.

Even though neither of the cities put an emphasis on co-creation in their digital plans, both engaged in several co-creation exercises in the past five years. For instance, Turin has a dedicated digital platform for social involvement and co-creation called "First Life" (<https://www.firstlife.org/>). Milan ran about 10 co-creation exercises per year for the past five years. The city uses co-creation in several domains, including in IT, where they insert user-centric co-creation with employees and citizens in all new projects.

Milan and Turin are making their base registries accessible to other public administrations. In Italy, the National

Digital Transformation Team created an App IO channel where base registries are made available – and Milan uses it. They make their population register, property taxes and car pass for residents registers available. As of 30 April 2019, 160 APIs were available to other administrations and private companies, resulting in 1.8 million calls per month on average. In Turin, public and public-private bodies use services via 20 APIs developed by the local authority (most of them are services called "servizi in cooperazione applicativa").

Both cities have adopted the key centralised service modules on eID (SPID) and the National Population Register (ANPR). Turin enables access to its citizen portal called "TorinoFacile" (easy Turin) through SPID, used by 30% of its users in 2018. Milan reports over 50% of new users logging in through SPID authentication.

Milan uses KPIs to monitor digital government, via the "Penetration Index," which represents the percentage of use of digital services compared to traditional ones.<sup>23</sup> There is no specific indicator for users' co-creation. The Turin Digital Agenda announces the development of a monitoring system including digital government indicators and a scoreboard, but the current status is unknown. For the moment, the city only partially monitors digital government projects with specific KPIs, sometimes including adoption rate of online services. KPIs on users' co-creation are also partially included, such as in the

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23 For more information, see <http://dati.comune.milano.it/rendiconto/home.html> (in Italian).

## 'Paris has the ambition to be a digital co-creation champion without relying on support from the national government.'

MONICA (Management of Networked of IoT Wearables – Very Large Scale Demonstration of Cultural Societal Applications) pilot project, which aims to demonstrate the relevance of technology solutions at concerts, festivals, and sporting events, where 10,000 citizens are called on to engage in the evaluation process.<sup>24</sup> Neither of the municipal monitoring efforts seems to be aligned with the national framework expressed in the Digital Transformation Progress Dashboard.

### Amsterdam

When considering the digital co-creation landscape in Amsterdam in relation to that of the Netherlands at the national level, a strong link is found when it comes to the use of base registries and centralised service modules.

The importance of co-creation is expressed in the city's *I-Visie* (Vision on Information) and the municipal digital agenda *A Digital City*, which pledges to actively involve Amsterdammers, scientists and artists in the quest to find answers to the city's issues. Service design, co-creation and user involvement are used where possible. This vision has been developed through co-creation with residents and experts and applied in the development of the municipal citizen portal *Mijn Amsterdam* as well as several apps used by civil servants and residents.

Amsterdam is lead partner in SCORE, an interregional project for open source and code for public services and takes part in

Smart City networks, Resilience Network, Cities Coalition for Digital Rights, CGCC (a network of city chief technology officers and chief information officers) and City Protocol. The city also participates in a number of EU projects.

Like most Dutch municipalities, Amsterdam is a keen user of the service modules provided by the central government. The city makes user authentication for its digital services available through the eID modules eHerkenning (for businesses) and DigID (for citizens). It also adopted "Berichtenbox," the central digital mail service. In addition, Amsterdam is connected to the national base registry system, both as a provider and user of data. It also publishes its base registries on the municipal open data portal, which provides 59 APIs to enable data reuse.

Unlike the national government, Amsterdam does not have a coherent monitoring system for digital government. However, several KPIs related to digital government are reported on a yearly basis as part of a general accountability effort on municipal policy developments.

### Madrid

When considering the digital co-creation landscape in Madrid in relation to that of Spain at the national level, the main link between the national and local context consists of the support of municipal digital service provision.

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<sup>24</sup> For more information, see <https://www.monica-project.eu/>.

## ‘Milan and Turin are both well-connected urban hubs that are active in international and European networks on digital government.’

With the upcoming Digital Transformation Strategy, Madrid is on the verge of further formalising its digitalisation and co-creation efforts undertaken in the last couple of years, which have received a boost over the past year due to the increased need among Madrileños for digital services during the COVID-19 pandemic.<sup>25</sup> Like its national counterpart, the City of Madrid links its digital strategy to the EIF, thereby ensuring that adequate considerations on interoperability are taken into account. Madrid will do so in the eGovernment Plan, which is part of the overarching Digital Transformation Strategy, along with other strategies, such as fifth-generation communication networks (5G), data governance, artificial intelligence, sensorisation, Internet of Things and cybersecurity.

Madrid participates in more than 20 international networks, most of which have working groups and committees related to digitisation and interoperability. Of particular note are the actions carried out with the Union of Ibero-American Capital Cities (UCCI), United Cities and Local Governments (CGLU), POLIS (the leading network of European cities and regions working together to develop innovative technologies and policies for local transport), EUROCITIES (joint work, knowledge-sharing and coordinated Europe-wide activity, including experiences of digitisation among 190 cities in 39 countries) and ISA<sup>2</sup> (Supporting the development of digital

solutions that enable public administrations, businesses and citizens in Europe to benefit from interoperable cross-border and cross-sector public services).

Madrid is making its base registries accessible to other public administrations. The city is also active in a number of EU projects related to digital government: the mobility-related Horizon 2020 project SCALE UP (Madrid, Turku and Antwerp) for the management and integration of data and digitalisation, the Mobility as a Service (MaaS) project in the metropolitan area of Madrid, the ECCENTRIC CIVITA project for the innovative management of parking using occupancy and energy criteria, with an innovative and participatory approach to road safety in the districts. Madrid coordinates the LEAD project to create on-demand logistics networks in a public-private environment where digital innovation is the protagonist, also part of the Horizon 2020 programme. In addition, a series of projects have been identified to benefit from European funds earmarked for recovery (Next Generation EU) favouring the digital transformation process.

The municipality of Madrid has a portal (<https://datos.madrid.es>) for accessing open and interoperable data. In Madrid, the policy of open data is quite extensive. API REST offers 72 operations to request data from the 489 available datasets in different formats. The open data portal of Madrid offers a repository with 35 apps developed by business

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<sup>25</sup> At the time of writing, a Digital Transformation Strategy has been fully developed but still awaits formal approval by the City Council.

## ‘France foresees the creation of a public transformation university.’

and entrepreneurs independent from the public administration.

Madrid leverages several service modules made available by the Spanish government. 77% of authentications on the Madrid Citizen Portal were realised through one of the centrally provided eID-solutions (DNIE; Cl@ve). The city also uses state registry systems (SIR), the invoice system (FACE), the Electronic Notification for Traffic Penalties (DEV) and the publication of Edicts through the BOE (Official State Gazette). A series of municipal services, such as Social Services, is made available through the central government’s data intermediation platform (PID) for (bi-lateral) use by other public administrations and to ensure interoperability with professional associations, such as notaries.

Regarding the development of co-creation initiatives with citizens, Madrid does not seem to rely on support from the national government. Developing user-centred services was among the main goals in the 2015-2019 government plan of Madrid. A key initiative that is still flourishing is the web portal

“Decide Madrid” that allows citizens to take part in deciding future policies, government actions, and services. In addition, the new system for economic activity permits (e.g. starting a business) is designed through co-creation with various groups.

To execute the IT and digital skills programme designed as part of the annual training plan for municipal employees, Madrid relies on the courses provided by the Madrid City Council Training School (EFAM).

The Business Intelligence system of the Madrid City Council shows indicators related to electronic services, including some on uptake, such as the use of the Electronic Registry and the Citizen Folder. New indicators are being defined for the creation of an Observatory to measure the digitalisation proposed in the upcoming Digital Transformation Strategy. In this endeavour, the city may take inspiration from the well-elaborated digital government dashboard at the national level.

## IV. User-Centred Digital Government Needs Co-Creation in Monitoring

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The 2021 Co-Creation Dashboard results show encouraging progress in European countries and cities on taking co-creation practices to a higher level and making user involvement an integral part of digital government.

Most countries have taken appropriate actions in light of the European Interoperability Framework and the eIDAS regulation (policy), resulting in numerous initiatives to make base registries more widely available, the development of national eID systems including qualified trust services and the increased availability of other centralised service modules, such as ePayment, Digital Mail and Citizen Portals (interoperability and reuse). Even though at the strategic level co-creation is rare for all service innovation projects, most countries and cities have put in place initiatives for service co-design and have undertaken several co-creation exercises (collaboration). While private sector-bred co-creation skills generally do not seem to be brought in through management hiring practices, governments do pay attention to improving the digital skills of existing personnel. However, exact statistics on both topics are rare (skills). Almost half of the countries and half of the cities have developed key performance indicators on digital government, which in almost all cases include indicators measuring the uptake of digital services, but hardly ever consider co-creation (monitoring).

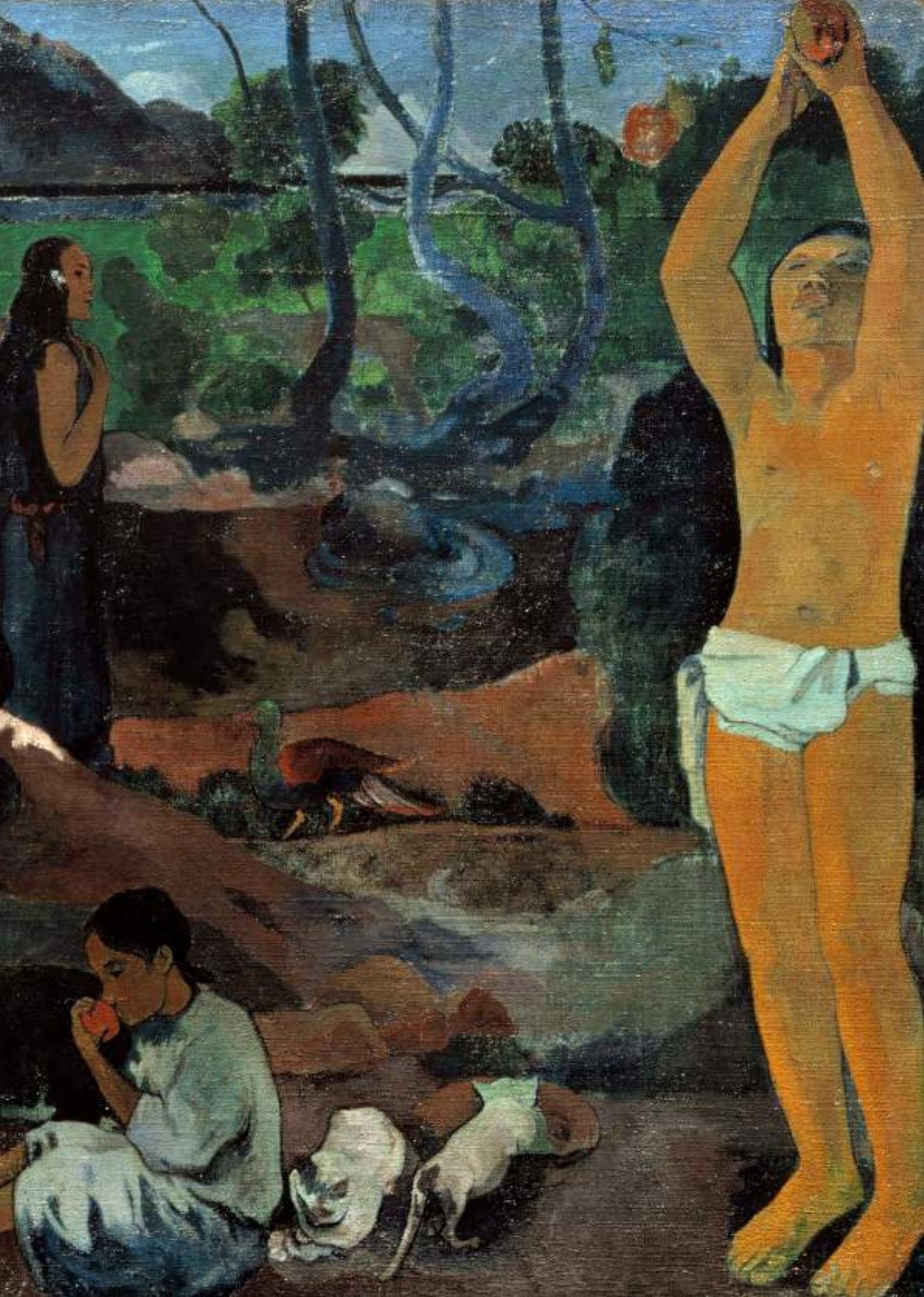
The key challenge related to all these developments lies in boosting the digital service uptake among citizens and businesses, for which it is critical that the solutions developed by the central or federal government are connected to the services that matter to these end users. Such services, like social care and business support, often find themselves close to home, at the local level of government. Therefore, it is crucial for member states to ensure a good strategic and operational alignment between centrally developed service modules, ranging from a base registry system to eID services and APIs, and local service needs.

This does not only imply increased co-creation with local government stakeholders on the (further) development of these service modules, but also aligning national and local efforts on digital government monitoring. Digital government uptake at the local level should be monitored at the national level to allow for fine-tuning in national coordination and support efforts. The big challenge ahead is to convert the plethora of often unconnected indicators at the European, national and local level, and the way the data is gathered and shared, into one coherent monitoring system.

## Annex I. The Co-Creation Dashboard Indicator Framework

Area/indicator	Indicator question	Government level	Type of data	
Policy	National digital plan aligned with European Interoperability Framework	Do you have a national digital plan aligned with the European Interoperability Framework?	National	Binary (Yes/No)
	Government digital strategy consistent with European Interoperability Framework	Do you have a digital government strategy explicitly aligned with the European Interoperability Framework?	Local	Binary
	Participation in European Union projects	Number of European Union projects on digital government participated in by the local authority in the last five years.	Local	Integer number
	Participation in international networks	Does the local authority participate in international networks on digital government?	Local	Binary
	Co-creation policy	Does the digital plan include explicitly the use of co-creation (user involvement) for all innovation projects that involve services?	National and local	Binary
Interoperability and reuse	Base registries	Do you have initiatives in place to make base registries accessible to other public administrations? Specify which ones.	National and local	Binary
	Application Programming Interface provision	Number of APIs provided to other administrations and to private companies.	National and local	Integer number
	API users	Present number of third parties using the APIs.	National and local	Integer number
	API calls per month	Average total number of calls to APIs developed per month.	National and local	Integer number
	Centralised service modules provided to local authorities	Do you provide centralised service modules to local authorities, such as ID, base registries, payments? Specify which ones.	National	Binary
	Percentage of uptake of these services by local authorities	Percentage of local authorities using centralised service modules provided by the central authority. Specify for which service.	National	Number (Percent)
	Reuse of software and service components	Do you use centralised service modules provided by the central authority, such as ID, base registries, payments?	Local	Binary

Area/indicator	Indicator question	Government level	Type of data	
Collaboration	Service co-design	Are there initiatives in place to involve users in the design of the service?	National and local	Binary
	Percentage of digital transactions	Percentage of total transactions (certificates, etc.) issued entirely digitally by the central or local authority.	National and local	Number (Percent)
	Acceptation of qualified trust services in line with the eIDAS regulation	Do you accept the use of qualified trust services in line with the eIDAS regulation?	National and local	Binary
	Percentage of transactions or users that have used eIDAS compliant eID	What percentage of transactions or users (of local authority services) have used eIDAS compliant eID?	National and local	Number (Percent)
	Co-creation exercises	How many co-creation exercises (user research, face-to-face and online co-creation exercises) did you carry out over the last five years?	National and local	Integer number
Skills	Recruitment of personnel from the private sector	Did you bring in, over the last five years, personnel from the private sector in management positions?	National and local	Binary
	Training on digital matters	Did you provide training on digital matters to at least 10% of the staff in the last three years?	National and local	Binary
Monitoring	Use of Key Performance Indicators for the digital government's monitoring	Do you have KPIs to monitor digital government?	National and local	Binary
	Use of KPIs for the uptake of online services	Do your KPIs include uptake of online services?	National and local	Binary
	Use of KPI for users' co-creation	Do your KPIs include users' co-creation?	National and local	Binary



## Annex II. Country Profiles

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The Co-Creation Dashboard measures national progress in five areas: 1) policy, 2) interoperability and reuse, 3) collaboration, 4) skills and 5) monitoring. The main body of this policy brief is devoted to thematic analysis and county-to-country comparisons.

In this section, we restate the data in a series of country factsheets covering the 27 member states of the European Union and the United Kingdom. In addition, we also analyse the state of co-creation in six leading cities, beginning on page 59.



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The Austrian Government Programme, [Out of a Sense of Responsibility for Austria - Government Programme 2020-2024](#), gives the subject of digitisation a high priority and includes numerous measures to establish and further ensure Austria's role as a leading digital nation. The development of a Vision "Digital Austria in 2050" was started in 2019 under the auspices of the Ministry of Digital and Economic Affairs. The first [European Interoperability Framework Monitoring Mechanism](#) data collection for Austria in 2019 shows an overall good performance of the country with particularly positive results within the second scoreboard (interoperability layers). The [Austrian Interoperability Framework](#) promotes and supports the delivery of Austrian public services by fostering cross-border, cross-organisation and cross-sector interoperability. The [2008 guidelines for public participation are currently under review](#). An updated version is expected to be published by the end of 2021.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

Austria has taken a number of steps to improve cooperation among government agencies and other public stakeholders. Highlights include:

- The [Electronic Data Processing Register](#) has been online since 01 September 2012 and allows for free and anonymous insight into online public registries;
- The [national open data portal](#) offers access to 28,330 datasets, including a number of base registries;
- The [Portal Group](#) links 100% of local administrative portals and provides the basic infrastructure for the authentication and authorisation of public sector employees when accessing restricted online resources;
- A federal ID service, called [Citizen Card \(Bürgerkarte\)](#) is used by all relevant governmental applications and can also be used to sign documents securely and electronically.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

With regards to service co-design, co-creation exercises, the acceptance of qualified trust services and digital transactions Austria shows a high level of progress. Highlights include:

- The Austrian [portal for entrepreneurial services](#) has been co-designed with entrepreneurs;
- [Ninety-seven percent](#) of public services in Austria can be completed entirely online;
- Austria counts [four active qualified trust service providers](#);
- In November 2020, [1.5 million Austrians used mobile eID](#), amounting to 17% of the population.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

There is no information available on the recruitment of personnel from the private sector and training on digital matters in Austria.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

Currently, there is no information on the use of national Key Performance Indicators on digital government, the uptake of online services or co-creation in Austria. However, related KPIs are captured by the European [Digital Economy and Society Index](#).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

[Digital Belgium](#) is the action plan outlining the country's digital long-term vision. The country shows an overall good performance on the level of [implementation of the European Interoperability Framework](#), with particularly positive results within the third scoreboard (Interoperability principles). Digital Belgium doesn't explicitly mention the use of co-creation (user involvement) for all innovation projects that involve services.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The federal government has put in place several measures to enable increased interoperability and data reuse between government institutions. Highlights include:

- [BELGIE](#), the Belgian Government Interoperability Framework, which provides a mapping of European Interoperability Framework recommendations to various interoperability initiatives at the federal, regional and local level;
- The [MAGDA platform](#) enables the exchange of data between federal and regional base registries in Flanders;
- Multiple service modules are available, e.g. the Belgian eID-card for electronic signature, the "Itsme" mobile application for digital authentication and the eBOX for digital mail to citizens and businesses;
- At least [four APIs](#) have been made available to administrations and private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Belgium has taken several actions to enhance collaboration between government organisations and with other public stakeholders. Highlights include:

- Service co-design initiatives, e.g. prototyping MyProfile with citizens and service user feedback on [kafka.be](#);
- The eHealth platform has been co-created with health professionals;
- [Eighty-eight percent](#) of key public services in Belgium can be completed entirely online;
- Belgium has [11 active qualified trust service providers](#);
- The total number of logons per year to the [Federal Authentication Service](#) has increased to almost 135 million in 2020, up from 68 million in 2019 and 55 million in 2018.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

Even though a group of thought leaders from the private sector, the Digital Minds for Belgium, have co-authored the Digital Belgium action plan, Belgium has not recruited personnel from the private sector in management positions. The Federal Administration Training Institute proposes IT trainings for all public servants at the federal level.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

The [Digital Barometer of the Federal Government](#) displays a range of digital government indicators. It includes a "Government Use Index," which since 2014 has tracked the adoption rate of the Federal Service Bus and the Crossroads Bank for Social Security by authorities. It also includes a "Citizen Use Index" and a "Company Use Index," which track the use of several key digital services, such as MyBelgium and MyEnterprise.

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

[Digital Bulgaria 2025](#) aims to promote the deployment of smart information- and communications-technology decisions in all areas of economics and social life, building upon the achievements of previous programmes and on the new European strategic and programmatic guidelines to achieve smart, sustainable and inclusive digital growth by 2025. The [Strategy for the Development of eGovernment](#) has been updated and aims to improve the quality of the provision of services to citizens, optimise the processes and business relationships between the administration and economic entities, foster effective interaction between administrative structures and increase internal efficiency and effectiveness. The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall good performance of the country, with particularly positive results on interoperability layers.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

In terms of interoperability, Bulgaria's well-developed base registries and centralised service modules provided to local authorities stand out. Highlights include:

- The [Register Information Exchange System](#), an infrastructure that currently enables the automated interconnections between 62 Bulgarian registers, as well as information systems, in the form of machine-to-machine services;
- The [Unified Portal for Access to Electronic Administrative Services](#), which constitutes an entry point for the provision of electronic administrative services, offering a secure channel for access and communication with citizens and businesses;
- The portal for [Access to Software Systems Development Resources](#), which provides and manages access to resources for the development of eGovernment software systems and enables the reuse of already created software codes and components and the accumulated knowledge in new eGovernment software systems development.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Bulgaria is advancing in the fields of digital transactions and acceptance of qualified trust services. Highlights include:

- [Seventy-nine percent](#) of key public services in Bulgaria can be completed entirely online;
- Bulgaria counts five active qualified trust service providers, which are listed in the Register of Certified Service Providers Issuing Certificates for Qualified Electronic Signature;
- For the purposes of cross-border electronic identification, an [eIDAS Node](#) has been developed and deployed in a production environment. At the national level, the eIDAS Node is completely integrated with the eAuthentication system, developed and maintained by the State eGovernment Agency.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

The [Institute of Public Administration](#) offers compulsory training for career development and specialised training for professional development, including on e-governance to roughly 10,000 to 12,000 public administration employees annually.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

Currently, no information is available on the use of Key Performance Indicators by the Bulgarian government. Related indicators are captured by the European [Digital Economy and Society Index](#).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



### POLICY OVERVIEW

**Digital plan aligned with Interoperability Framework**

■ **Co-creation policy**

The [eCroatia 2020 strategy](#) presents an overview of the development of informatisation and e-services in the public sector and the goals of further development. It was prepared in accordance with the Digital Agenda for Europe and in cooperation with a wide variety of stakeholders. The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall good performance of the country with particularly positive results within the second scoreboard (interoperability layers).

### INTEROPERABILITY AND REUSE

■ **Base registries**

**Application Programming Interface (API) provision**

**Centralised service modules provided to local authorities**

■ **API users**

■ **API calls per month**

**Percentage of uptake of services by local authorities**

The Croatian government has put effort into providing centralised service modules to its local authorities. Highlights include:

- The [eCroatia 2020 Strategy](#) focuses on the insurance of interoperability between the current and the new ICT systems in public administration, including the elimination of duplicated functionalities;
- The [eCitizen platform](#) is the one-stop shop for digital services. It consists of a central state portal, a National Identification and Authentication System (NIAS) and a government-issued personal mailbox;
- Since the beginning of its operation until 31 December 2019, [811,582 people used at least one eService](#), and there were as many as 28 million logins to the available e-services;
- The [HITRO.HR portal](#) serves as a one-stop shop, as it enables citizens and businesses to enjoy quicker and simpler access to government information and services in one location.

### COLLABORATION

■ **Service co-design**

**Percentage of digital transactions**

■ **Co-creation exercises**

**Acceptation of qualified trust services**

**Usage of qualified trust services**

Croatia has taken several actions to reach a high percentage of digital transactions and acceptance of qualified trust services. Highlights include:

- The [Personal Identification Number \(OIB\) system](#) offers safe infrastructural and functional services to all central and public institutions in charge of physical and legal entity registration, to all institutions obliged to use OIB for their official records, as well as to all citizens and legal entities that are able to use public web applications and SMS services to obtain information about their OIB;
- According to the eGovernment Benchmark 2020 [73%](#) of key public services in Croatia can be completed entirely online;
- NIAS was notified under eIDAS on 07 November 2018 and [three Croatian active qualified trust service providers](#) are mentioned in the European Commission's list of trust service providers.

### SKILLS

**Recruitment of personnel from the private sector**

**Training on digital matters**

There is currently no information available on the recruitment of personnel from the private sector and training on digital matters in Croatia.

### MONITORING

**KPIs on digital government**

**KPIs on the uptake of online services**

**KPIs on users' co-creation**

Data on the monitoring system regarding digital government progress, the uptake of online services and user's co-creation in Croatia is currently not available. For European performance indicators on the matter, please refer to the [Digital Economy and Society Index](#).

■ High progress

■ Medium progress

■ Low progress

■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The [Digital Strategy for Cyprus](#) is a comprehensive plan for the period 2012-2020 with a holistic approach for the development of the information society in Cyprus. The Department of Electronic Communications launched a tender to update the Digital Strategy of Cyprus from 2020 onwards, which was awarded in 2019 and is due for completion in 2020. The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall good performance of the country, with particularly positive results within the scoreboard related to the Conceptual Model for Integrated Public Services Provision.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

Cyprus has put several measures in place to advance the interoperability of its base registries and provide centralised service modules to local authorities. Highlights include:

- The [Government Secure Gateway Project](#), which aims to comply with the vision for a joined-up government constituting the central channel for all electronic transactions between citizens, businesses and public institutions;
- [eOASIS](#), a system that deals with the electronic management of official documents in the public service, currently operates in 35 government organisations including the Cyprus Police and serves around 6,000 users. The rollout to the remaining government organisations has been approved;
- For the [Land Registry](#), one of the main base registries in Cyprus, since 2018 data exchange (property search) has been available to all government departments through the Government Data Warehouse and web-services;
- The [National Web Portal for Open Data](#), which is based on the DKAN open source platform, offers a larger catalogue of public datasets, an editorial section related to open data, a wide variety of support material for open data publishers and reusers in the form of visual guides, a section to promote apps developed through the use of open data, an online form for submitting data requests and a collection of user-friendly application programming interfaces to access both data and metadata.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Cyprus shows different levels of progress in areas related to collaboration. Highlights include:

- [Seventy-nine percent](#) of key public services in Cyprus can be completed entirely online;
- In 2018, two co-creation events were organised in Cyprus under the framework of [SciShops.eu](#), which engaged diverse stakeholders and tested formats for identifying and solving challenges using a collaborative and quick-win approach;
- On eID and trust services, Cyprus has [one active qualified trust service provider](#) while the government is preparing a national scheme on eidentification and eSignature, which was [expected to be completed in 2020](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

There is no evidence suggesting that the [Cyprus Academy of Public Administration](#) offers training on digital matters.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government of Cyprus. Related indicators are captured by the European [Digital Economy and Society Index](#).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The [Innovation Strategy of the Czech Republic 2019–2030](#) includes initiatives focused on digital government and services. In addition, the Strategic Framework for the Development of the Public Administration 2014–2020 will be followed up by the “Client-oriented Public Administration 2030.” The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall good performance of the country, with particularly positive results within the second scoreboard (interoperability layers).

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

Czechia has taken numerous steps to improve cooperation among government agencies and other public stakeholders. Highlights include:

- The [Act on Base Registries](#) regulates the legal, organisational, informational and partially technical interoperability aspects with regard to national base registries;
- The amended [Act on Free Access to Information](#) obliges public administrations to provide online access to information in open data formats and established the legal basis for the national open data catalogue as a “public administration information system” and the central national platform for public administration open data;
- The [Plan on the Systemic Reduction of Administrative Burdens for Entrepreneurs](#) for the period 2019–2022 includes 21 digital projects focusing on eGovernment and other measures, proposed by central administrations in close cooperation with entrepreneurs and SMEs to reduce administrative tasks;
- At least [seven application programming interfaces](#) have been made available to administrations and to private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

A high percentage of digital transactions and a high level of progress with regard to qualified trust services have been recorded in Czechia. Highlights include:

- According to the eGovernment Benchmark 2020 [82%](#) of key public services in Czechia can be completed entirely online;
- The programme [Digital Czechia](#) foresees the implementation of full electronic submission of forms using [e-Identification](#), in accordance with eIDAS and in compliance with the “digital by default” principle;
- The national identification scheme of Czechia was [notified under eIDAS on 13 September 2019](#) and its holders will now be able to use their eID credentials to access public services in other EU member states, making cross-border interactions easier and more secure;
- Czechia counts [six active qualified trust service providers](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

Currently, no information on the recruitment of personnel from the private sector and training on digital matters is available.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users’ co-creation

No information is available on the use of Key Performance Indicators by the government of Czechia. Related indicators are captured in the [European Digital Economy and Society Index](#).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

- **Digital plan aligned with Interoperability Framework**
  - **Co-creation policy**
- The [Digital Strategy 2016-2020](#) has a practical approach to interoperability and focuses on the automation of public administrative procedures, a better user experience for citizens and businesses, digital welfare and data sharing. [According to the European Commission](#) the Danish National Interoperability Framework is well aligned with the European Interoperability Framework in all dimensions.

## INTEROPERABILITY AND REUSE

- **Base registries**
  - **Application Programming Interface (API) provision**
  - **Centralised service modules provided to local authorities**
  - **API users**
  - **API calls per month**
  - **Percentage of uptake of services by local authorities**
- Through several measures, the Danish government has managed to increase the level of interoperability between public institutions. Highlights include:
- The [Basic Data Programme](#) through which Danish registers are standardised so that data can be used coherently;
  - According to a study by the European Commission's Joint Research Centre, the Danish government provides at least [143 APIs](#);
  - [NemID](#), the official digital signature, can be used as a secure login for [100%](#) of local authorities' self-services;
  - [Digital Post](#) is the digital mailbox for messages and communications from public authorities;
  - [NemKonto](#) is a mandatory solution that enables public authorities to make secure payments to citizens and companies by just knowing their national citizen or business number;
  - [NemSMS](#) is a Danish public message service that government and municipal authorities use to send service text messages to registered citizens and businesses.

## COLLABORATION

- **Service co-design**
  - **Percentage of digital transactions**
  - **Co-creation exercises**
  - **Acceptation of qualified trust services**
  - **Usage of qualified trust services**
- With regards to collaboration a high level of progress can be observed in Denmark. Highlights include:
- MindLab, which was the world's first public innovation lab, has evolved into the [Ministry of Business' Disruption Taskforce](#);
  - According to the eGovernment Benchmark 2020 [99%](#) of key public services in Denmark can be completed entirely online;
  - In September 2020, there were [5,139,283 activated NemID accounts](#), amounting to 88% of the Danish population;
  - In 2019, [70% of the 15-89 year-olds](#) submitted forms to public authorities in a digital way;
  - The [Danish Business Authority \(DBA\)](#) closely collaborates with its stakeholders and involves them in all the phases of its digital transformation through co-initiation, co-design, co-implementation, co-delivery and co-assessment.

## SKILLS

- **Recruitment of personnel from the private sector**
  - **Training on digital matters**
- The Disruption Chief of the Disruption Taskforce, [Mads Bonde Clausen](#) brings extensive private sector experience, as did his predecessor Kåre Riis Nielsen. The Digital Strategy 2016-2020 mentions the importance of enhancing digital competences for public employees in the welfare sector but does not include any concrete initiatives on training.

## MONITORING

- **KPIs on digital government**
  - **KPIs on the uptake of online services**
  - **KPIs on users' co-creation**
- The [Agency for Digitisation's statistics dashboard](#) provides an overview of the uptake of digital government solutions. Additionally, several indicators related to user satisfaction are measured on a yearly basis.

■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The [Digital Agenda 2020 for Estonia](#) aims to develop a mature and secure environment for the widespread use and development of smart information- and communication-technology solutions. The plan is also to raise the capability of the public sector for using data analytics and research. The [Estonian National Interoperability Framework is fully aligned](#) with all principles and recommendations of the European Interoperability Framework. Moreover, the pillar on Smart Public Governance in the Digital Agenda 2020 includes “activities to support the development and cooperative creation of services” and “initiatives for raising awareness among target groups of the services and the provision of services.”

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

All registries are base registries involving unique data collected in respective registries. The data exchange layer [X-Tee](#) (formally X-Road) enables secure Internet-based data exchange between the state’s information systems. X-tee is the backbone of e-Estonia. Other highlights include:

- A total of [2,467 APIs](#) have been made available to other administrations and private companies;
- Multiple service modules are available, e.g. the eID card, mobile-ID and the TARGET Instant Payment Settlement (TIPS);
- [One hundred and sixty-four public sector institutions](#) are connected to X-tee.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Estonian reformers are committed to developing [a new information system](#) for involving citizens in policy development. The system will open a user-friendly space for government officials and citizens to co-create policies. Other highlights include:

- Estonia counts [two active qualified trust service providers](#): SK ID Solutions AS and GuardTime AS;
- [Seventy percent of Estonians](#) use the ID-card regularly;
- [Ninety-eight percent](#) of public services in Estonia can be completed entirely online;
- On [osale.ee](#), the Estonian citizen participation portal, one can submit ideas and proposals to the government;
- A [social hackathon](#) was organised to develop new services or innovative solutions to community problems.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

Two years ago, the [Chief Government Technology Officer](#) worked for a bank.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users’ co-creation

The [Digital Agenda 2020 for Estonia](#) includes some Key Performance Indicators, such as the percentage of the population aware of public e-services (to an expected target of 90% in 2020, up from 29% in 2012) and the satisfaction with the quality of public e-services. Several key performance indicators on e-estonia.com concern adoption rates, such as “Estonians using Internet voting.”

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The purpose of the [Provision of Digital Services Act \(306/2019\)](#) is to promote the accessibility of digital services, thus improving everyone's access to digital services on an equal basis. The new [Information Management in Public Administration Act \(906/2019\)](#), in force since January 2020, defines the entire lifecycle of information in public administration. It covers design and imaging duties, information security requirements and the basics of case and service management registration. The first [European Interoperability Framework Monitoring Mechanism](#) data collection for Finland in 2019 shows an overall good performance of the country, with particularly positive results on interoperability principles. The policy reforms put forward in the 2019 [Government Action Plan](#) emphasise a new kind of interaction and a need to develop ways to engage a broader group of stakeholders in reforming society.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The Finnish government has put in place several measures to enable increased interoperability and data reuse between government institutions. Highlights include:

- The [Information Management in Public Administration Act \(906/2019\)](#) requires that government agencies utilise datasets of other government agencies, including base registries, whenever possible;
- At least [105 application programming interfaces](#) have been made available to other administrations and to private companies;
- [Suomi.fi services](#), such as e-authorisation and the data exchange layer, enable public and private organisations to save costs and implement their own digital services more easily.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

The [Government Programme 2018-2019](#) includes a pillar on the culture of experimenting. Other highlights include:

- Finland has [one active qualified trust service provider](#) under the eIDAS regulation: the Finnish Digital Agency;
- Through the [Ecosystem forum](#), a new operating model to speed up the development of digital ecosystems serving the citizens' and companies' needs, several co-creation workshops were organised;
- [Ninety-six percent](#) of public services in Finland can be completed entirely online.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

[HAUS](#) Finnish Institute of Public Management is a state-owned limited liability company that provides general personnel training services for the entire central government administration. The digital transformation director of [Business Finland](#), the Finnish government organisation for innovation funding and trade, has extensive working experience in the private sector.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

The [Government Programme 2018-2019](#) includes milestones related to the Digitalisation of Public Services pillar from 2015 to 2019 and achievements, such as the digitalisation of procurements. At the European level, the [DESI](#) set of indicators include data about the share of individuals using the internet to send filled in forms to the public administration.

■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet

## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The Public Action 2022 programme [Action Publique 2022](#), launched in 2017, is the strategic plan to reform the public sector, which includes a co-created transversal pillar on the digital transformation emphasising administrative simplification and user-centricity. It is complemented by the [Tech.gouv programme](#), launched in 2019, which aims at leveraging digital technologies to improve public services. In 2016, all the European Interoperability Framework principles are fully covered by the different frameworks of the French National Interoperability Framework. This is followed by a [good performance on the European Interoperability Framework monitoring indicators on open data, administrative simplification and reusability](#).

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The national government has put in place several measures to enable increased interoperability and data reuse between government institutions. Highlights include:

- Through the [API enterprise hub](#), administrations can obtain information from several base registries;
- Ninety APIs have been made available to other administrations and to private companies through [api.gouv.fr](#) and [entreprise.api.gouv](#);
- On average, French administrations make around [2.5 million API calls per month](#) for business data;
- [FranceConnect](#) is the eID service for private individuals, which can be used to access over 750 online services. eID systems for proxies (AidantsConnect), businesses (ProConnect) and public servants (AgentConnect) are [under development](#). Other available service modules include [PayFiP \(ePayment\)](#) and [Chorus Pro \(eInvoicing\)](#).

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

France has taken several actions to enhance collaboration between government organisations and with other public stakeholders. Highlights include:

- Users can contribute to the improvement of key services through the [I give my opinion](#) button available at the end of a digital service journey;
- [Ninety-three percent](#) of key public services in France can be completed entirely online;
- France has [23 active qualified trust service providers](#);
- In September 2020, there were 18 million FranceConnect accounts, representing 27% of French inhabitants.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

The [Public Action 2022 programme](#) includes a plan to open the Public Transformation University, dedicated to accompanying and training transformation project managers on user centricity methods, agility, innovation and digital transformation. In addition, the beta.gouv.fr community has developed a free online course on [creating innovative digital services](#).

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

[Thirty-two KPIs](#) have been defined for the Tech.gouv programme 2019-2022, aimed at accelerating the digital transformation of the public service. In addition, the [Digital Public Services Dashboard](#) measures usage and satisfaction rate of the French government's 250 key services on a quarterly basis.

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

[Digital Strategy 2025](#) does not include a specific pillar on digital government. However, it focuses on digital infrastructure, entrepreneurship, the regulatory framework for innovation and investment, data security, Industry 4.0, research and innovation. The [National eGovernment Strategy \(NEGS\)](#), adopted by the IT Planning Council in 2010, is regularly evaluated and updated. The result of the first [European Interoperability Framework Monitoring Mechanism](#) data collection for Germany in 2019 shows an overall medium performance.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The German federal government has taken several steps to enhance the interoperability of digital services. Highlights include:

- The [Registry Factory](#) is an innovative tool aimed at a more efficient registry creation and administration;
- [Govdata.de](#), the open data portal of Germany, gathers more than 31,397 datasets;
- [De-Mail](#), the solution for the secure exchange of electronic messages between citizens, businesses and administrations is currently offered by [191](#) public organisations;
- [ePayBL](#) (ePayment des Bundes und der Länder) was established as a mandatory basic IT component at the federal government level but is also available to organisations at the local government level;
- [Sixty-one](#) municipalities and municipal cooperations (Landkreise) offer access to online services through the federal eID service.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Germany shows a high level of progress with regard to service co-design, the percentage of digital transactions and the acceptance of qualified trust services. Highlights include:

- The [Digitalisation Labs](#) gather experts and users to achieve user-centric solutions on a broad range of topics;
- According to the eGovernment Benchmark 2020, [90%](#) of key public services in Germany can be completed entirely online;
- Germany counts [12 active qualified trust service providers](#);
- According to an [EU member states' peer review](#), the German eID function fulfils all requirements of the eIDAS regulation for the confidence level "high."

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

The Federal Academy of Public Administration uses the [ILIAS training platform](#) to train civil servants. Statistics on the number of staff receiving training on digital matters are not available.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

Since 2011, the [e-Government Monitor](#) by the Federal Government Commissioner for Information Technology has been published annually. It provides an overview of the use and acceptance of digital government among the population in Germany, Austria and Switzerland. This monitor does not include any co-creation metric.

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

Greece's [National Digital Strategy](#) (NDS) (2016-present) was updated in December 2020 by the so-called Digital Transformation Bible, the new Digital Transformation Strategy. The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall medium performance of the country. Regarding co-creation, the [Fourth National Action Plan on Open Government 2019-2021](#) promotes the implementation of the national policy consisting of circulars towards all public service institutions, open access and reuse of public documents, information and data.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The [Interoperability Center of the Ministry of Digital Governance \(KE.D\)](#) is the information system that provides a unified environment for the installation and use of online services. Other highlights include:

- [Twenty-five application programming interfaces](#) have been made available by KE.D to other administrations and society, resulting in [75 users](#) and around 2.7 million calls per month;
- [Gov.gr](#) is the single digital public administration portal that gathers all 1,054 digital public services;
- There are 28 local authorities using the e-authentication service and 152 using the tax registry.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Greece shows good progress on developing initiatives to enhance collaboration with citizens and other key stakeholders. Highlights include:

- The [Greece Open Government Action Plan 2019-2021](#) includes actions aimed at the cooperation, interaction and consultation with civil society actors on the topic of open government.
- The last [three Open Government Partnership National Action Plans](#) have been developed by involving the stakeholders and members of the civil society in a series of group discussions;
- The sustainable development plan for the island of Gavdos has been drafted through co-creation;
- Greece counts [five active qualified trust service providers](#);
- [Eighty-four percent](#) of public services in Greece can be completed entirely online.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

No detailed information is available.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

The key performance indicators set up for the evaluation of the implementation of the Operational Programme "Public Sector Reform 2014-2020" include digital government performance indicators, such as the [number of citizens who have personalised access to a unified point of access](#) and [number of projects to enhance information and citizen participation](#).

- High progress
- Medium progress
- Low progress
- Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The [National Infocommunication Strategy 2014-2020](#) gives a comprehensive overview of the Hungarian information society and ICT market. The strategy is defined around four pillars: digital infrastructure, digital competences, digital economy and digital state. Moreover, a new National Digitisation Strategy (NDS) is currently being prepared. The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall good performance of the country, with particularly positive results within the second scoreboard (interoperability layers).

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The [Hungarian Central Government Service Bus \(KKSZB\)](#) ensures electronic communication, interoperability and secure data exchange of authentic data among public administrative authorities. Other highlights are:

- The new [customisable electronic administration user interface \(SZÜF\)](#) is the point of single contact portal of Hungary;
- The [eMunicipality Portal](#) provides a single point of contact to all eGovernment services provided by local governments (more than 99% of the 3,200 Hungarian local governments);
- At least [one application programming interface](#) is provided to other administrations and private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

[Analysis of data on previous user experiences](#) is the most used co-creation method in the development of Hungarian government units' most important innovations. Other highlights include:

- Hungary counts [four active qualified trust service providers](#) for the eIDAS regulation;
- The preparations for the Hungarian electronic identification (eID card), proxy service and eIDAS node are [in progress](#);
- [Eighty-seven percent](#) of public services in Hungary can be completed entirely online.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

No information is available.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. Related indicators are captured by the [European Digital Economy and Society Index](#).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

**Digital plan aligned with Interoperability Framework**

**Co-creation policy**

Ireland has a dedicated [eGovernment Strategy 2017–2020](#), which does not explicitly consider co-creation, but does underpin the government’s commitment to be open, flexible and collaborative with people and businesses. It is complemented by the 2019 [Cruinniú GovTech Report](#), which sets out the GovTech aspirations for the years to come. The result of the first [European Interoperability Framework Monitoring Mechanism](#) data collection for Ireland in 2019 shows medium to high performance on the interoperability principles.

## INTEROPERABILITY AND REUSE

**Base registries**

**Application Programming Interface (API) provision**

**Centralised service modules provided to local authorities**

**API users**

**API calls per month**

**Percentage of uptake of services by local authorities**

The [Public Service Data Strategy 2019–2023](#) acknowledges the benefits derived from establishing base registries. It contains a specific action to “Develop base registries and the processes required to govern their operation.” Other highlights are:

- The [Open Data Portal](#) provides 8,846 datasets from 110 publishers in open, free and reusable formats;
- The Government Digital Postbox solution is currently under development and will allow citizens to receive their mail from government organisations in a single secure electronic mailbox;
- MyGovID is a single online identity for citizens allowing access to a range of online public services more easily;
- There are [98 APIs](#) provided to other administrations and private companies.

## COLLABORATION

**Service co-design**

**Percentage of digital transactions**

**Co-creation exercises**

**Acceptation of qualified trust services**

**Usage of qualified trust services**

Ireland has taken several actions to enhance collaboration between government organisations and with other public stakeholders. Highlights include:

- [Our Public Service 2020 strategy](#) puts forward a user-centred approach in the design of public services;
- The portal [gov.ie](#) gives access to more than 300 online government services;
- [Eighty-eight percent](#) of public services in Ireland can be completed entirely online;
- Ireland counts [two active qualified trust service providers](#) under the eIDAS regulation;
- MyGovID has not yet been [notified under eIDAS](#) to the European Commission;
- The Irish Health Service Executive (HSE) and the Council of Clinical Information Officers (CCIOs) [co-created a three-year digital strategy to help transform technology-enabled care](#) in Ireland.

## SKILLS

**Recruitment of personnel from the private sector**

**Training on digital matters**

None of the managers of the [Office of Public Expenditure and Reform](#) were in the private sector less than five years ago. The office offers training for public bodies in Ireland, but the percentage of trained public servants is not known.

## MONITORING

**KPIs on digital government**

**KPIs on the uptake of online services**

**KPIs on users’ co-creation**

The 2019 [Cruinniú GovTech Report](#), which sets out the Irish government’s ambitions and goals in the years to come, mentions indicators to measure progress. However, it is not clear whether these indicators are in place.

■ High progress

■ Medium progress

■ Low progress

■ Data not available yet

### POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The 2020 [National Innovation Strategy "Italy 2025"](#) includes 20 main digitalisation actions to be put in place by 2025, aiming at the same time to promote more democracy, more ethics and more inclusion. The theme of interoperability is transversal to different objectives. As an enabling factor, interoperability, for instance, lies at the heart of Action 9 "Data for cities of the future" and Action 11 "Innovation as common good." Moreover, the [Three-Year Information- and Communications-Technology Plan](#) contains the guidelines for the interoperability model in the public administration, following European Interoperability Framework principles.

### INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

- Regarding base registries, according to the [three-year-plan \(piano triennale\)](#), Italy has implemented a controlled vocabularies and metadata plan for 17 base registries. The National Registry of the Resident Population (*Anagrafe Unica Nazionale*) is in the process of becoming a centralised database that substitutes municipal databases in the Index of National Registries (INA) and the Register of Italian Citizens Residing Abroad (AIRE);
- At least [10 application programming interfaces](#) are provided;
- The Italian government has developed [central service modules for eID \(SPID\), ePayment \(pagoPA\) and eInvoicing \(Fatturazione elettronica\)](#), which can be used by all public administrations;
- [Adoption by the public administration](#): in January 2021, 5,720 public entities had granted digital access to more than 16 million SPID users; in August 2020, 22,895 public entities were inscribed on the Public Administration Index, which functions as a trust register for the eInvoices; in December 2019, 18,147 public entities adhered to pagoPA (79.5% of the entities in the perimeter) and 7,187 had adopted the National Registry of Resident Population service.

### COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Italy has taken several actions to enhance collaboration between government organisations and with other public stakeholders. Highlights include:

- Service co-design initiatives, e.g. the [living lab created by the Ministry of Economy and Finance](#) intended to support the provision of a user-centric shared service platform to supply and manage HR and paycheque services to Italian civil servants. Further, according to the eGovernment Benchmark 2020, [92%](#) of key public services can be completed online;
- Italy counts [21 active qualified trust service providers](#). Further, the percentage of users using eIDAS compliant eID was 26% on 1 January 2021, with [15,494,031 activated SPID accounts](#) out of a population of 60,297,396. In January 2021, the digital access point [app IO](#) has been downloaded 9,349,068 times;
- Designers Italia has contributed to at least [five key projects](#) using user research and service design principles.

### SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

The [syllabus on digital skills](#) for public administration was created to define the set of digital knowledge and skills considered key for the public administration. A [course catalogue](#) is currently under development.

### MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

The [Digital Transformation Progress dashboard](#) shows indicators for the digital transformation of the Italian public sector. The uptake of the SPID and ePayment are among the indicators.

- High progress
- Medium progress
- Low progress
- Data not available yet

## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

Latvia is developing their [Digital Transformation Guidelines 2021-2027](#) complementing the "Information Society Development Strategy 2014-2020." The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall good performance of the country with particularly positive results within the first scoreboard (interoperability principles).

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

Latvia has started transitioning from the State Information Systems Register (SISR) to VIRSIS. VIRSIS will centrally store data about the information resources processed in the State Information Systems (SIS), as well as information about the technological resources and services required for the operation of the SIS and information about base registries.

- The [State and Local Government Services Portal](#) ensures quick and convenient access to the services provided by Latvian state institutions and municipalities and includes 122 internal eServices, 672 external eServices and 4,213 service descriptions;
- The [Electronic Declaration System \(EDS\)](#) allows natural and legal persons to submit all tax and informational declarations as well as requests addressed to the State Revenue Service (SRS);
- At least [two APIs](#) have been made available to other administrations and to private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Latvia has taken several actions to ensure collaboration between government organisations and with other public stakeholders. Highlights include:

- Creation of a [legal framework](#) that ensures public participation in several cases;
- In December 2019, the European Commission officially published four [Latvian electronic identification schemes](#), as notified in accordance with procedures set by the eIDAS regulation;
- [Ninety-six percent](#) of public services in Latvia can be completed entirely online.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

The Deputy Secretary of State for Digital Transformation worked in the private sector until 2019, after which he joined the Ministry of Environmental Protection and Regional Development.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. Related indicators are captured by the [European Digital Economy and Society Index](#).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The 2014-2020 [Information Society Development Programme – Digital Agenda for Lithuania](#) defines priorities and covers all areas of the digital economy and society: digital skills, digital content, investments in high-speed broadband, eGovernment, open public data, innovative eService creation, security, reliability and interoperability. The 2019 [European Interoperability Framework Monitoring Mechanism](#) data collection shows an overall medium performance of the country.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The [Network for Information Systems Interoperability Among Public Administration Institutions \(PASIS\)](#) enables state and municipal institutions, establishments and companies to provide electronic public services under the one-stop-shop principle. Some other highlights are:

- The [State Information Resources Interoperability Platform \(SIRIP\)](#) is the main public interoperability platform and provides a data exchange platform and an [eGovernment portal](#) offering a one-stop-shop for citizens and businesses;
- At least [one application programming interface](#) has been made available to administrations and to private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

[My Government](#) is the Internet gateway to the Government of the Republic of Lithuania that provides information on the cabinet of ministers and the work of government institutions that use e-democracy services. In the eCitizen section, it offers the possibility for citizens to participate in making and changing decisions. Highlights include:

- Lithuania has [six active qualified trust service providers](#);
- The [Lithuanian National Identity Card \(eID/ATK\)](#) was notified under eIDAS on 21 August 2020;
- [Ninety-six percent](#) of public services in Lithuania can be completed entirely online;
- The [GovTech Lab](#) is a co-creation initiative that helps the public sector identify challenges and engage with small- and medium-sized enterprises to create innovative solutions and accelerates startups in the GovTech and TechForGood space.

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

The director of the Information Society Development Committee worked in the private sector until 2019, when he joined the Committee.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. Related indicators are captured by the European [Digital Economy and Society Index](#).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

[Digital Luxembourg](#) is more than just an eGovernment strategy, as it goes beyond setting up the framework for innovation, new competencies and new market development. It is the government's policy of rationalisation, efficiency, modernisation and "doing more with less." The country has an overall good performance of the [European Interoperability Framework implementation](#), with particularly positive results in the second scoreboard (interoperability layers). The digital strategy does not mention the use of co-creation (user involvement) for all its innovation projects for services development.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The government has put in place measures and initiatives to enable increased interoperability and data reuse between public administration institutions. Highlights include:

- [RACINE](#) is an infrastructure network connecting all government institutions;
- [Guichet.lu](#) is the one-stop portal for both citizens and businesses that provides information and access to public services and procedures. [MyGuichet.lu](#) allows users to access their personal data, download official documents and carry out administrative procedures online through a personal and secured eID;
- In 2019, Luxembourg administrations realised over [500,000 transactions](#) through the Guichet portal;
- At least [three application programming interfaces](#) have been made available to other administrations and private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Luxembourg has put in place initiatives and actions to improve public service development and enhance collaboration between government organisations and with other public stakeholders:

- The platform [Vos idées](#) allows the government to collect public proposals and suggestions and encourages citizens to share their ideas to improve public services;
- [Ninety percent](#) of key public services in Luxembourg can be completed entirely online;
- Luxembourg has implemented eIDAS and recognises notified eIDs issued by other European Union member states to grant access to online public services;
- The country has [two active qualified trust service providers](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

Luxembourg has recruited personnel from the private sector in management positions, such as the first [digital policy advisor](#). The [National Institute of Public Administration \(INAP\)](#) proposes several kinds of training on digital skills: basic digital skills, technical skills and digital skills for the management.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. However, at the European level there are several performance indicators linked to the [Digital Economy and Society Index](#) e.g. the Digital Public Services pillar and the User Centricity pillar (eGovernment monitoring).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The [Digital Malta](#) strategy focuses on the solutions needed to address the gaps towards becoming a universally digitised society, focusing on three strategic themes: digital citizen, digital business and digital government. The country shows a medium performance of the [European Interoperability Framework implementation](#), with positive results within the first scoreboard (interoperability principles). The Open Government actions of the digital strategy include actions to encourage citizens to take part in democratic decision-making, but the use of co-creation (user involvement) for all its innovation projects for services development is not specifically mentioned.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The government has put in place measures and initiatives to enable increased interoperability and data reuse between public administration institutions. Highlights include:

- [Register of Registers](#) is a comprehensive list of legally based official lists and registers covering all the national registers;
- The [National Data Portal](#) has two main sections: the Open Data Portal and the Internal Data Sharing services, restricted to public administration officers and any other person who is authorised and involved in the processes relating to the dissemination and consumption of data services;
- At least [one application programming interface](#) has been made available to administrations and to private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Digital Malta includes several initiatives and actions to improve public service development and enhance collaboration between government organisations and with other public stakeholders:

- The eDemocracy initiative is aimed at using ICT to encourage citizens to take part in democratic decision-making. However, the initiative is not yet in place, as the Government plans to develop an eParticipation platform in the future, together with associated best practices and tools;
- [All key public services](#) in Malta can be completed entirely online;
- Malta has [two active qualified trust service providers](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

There is no specific information for these two topics.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. However, at the European level there are several performance indicators linked to digital public services, e.g. the Digital Public Services pillar ([DESI](#)), and the User Centricity pillar (eGovernment monitoring).

■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet

## POLICY OVERVIEW

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Digital plan aligned with Interoperability Framework</li> <li><span style="color: red;">■</span> Co-creation policy</li> </ul>	<p>The 2018 <a href="#">Dutch Digitalisation Strategy</a> includes an e-government chapter where the objective is to "commit to an inclusive and transparent (digital) society" and where the government must ensure "the interoperability of national and international infrastructure." The country shows an overall <a href="#">positive performance</a> on the level of implementation of the European Interoperability Framework throughout the three scoreboards (principles, layers and conceptual model). The Digitalisation Strategy does not explicitly mention the creation, co-creation, design or user involvement.</p>
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## INTEROPERABILITY AND REUSE

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Base registries</li> <li><span style="color: green;">■</span> Application Programming Interface (API) provision</li> <li><span style="color: green;">■</span> Centralised service modules provided to local authorities</li> <li><span style="color: grey;">■</span> API users</li> <li><span style="color: grey;">■</span> API calls per month</li> <li><span style="color: grey;">■</span> Percentage of uptake of services by local authorities</li> </ul>	<p>The national government has put in place several measures to enable increased interoperability and data reuse between government institutions. Highlights include:</p> <ul style="list-style-type: none"> <li>The system of base registries consists of 10 registries and services for data exchange;</li> <li><a href="#">Data.overheid.nl</a> is the Dutch open data portal that provides access to national datasets;</li> <li>Multiple centralised service modules are available, e.g. <a href="#">DigiD</a> and <a href="#">eHerkenning</a>, the eID solutions for respectively citizens and businesses, and the citizen portal <a href="#">Mijnoverheid.nl</a>;</li> <li>All Dutch municipalities and nine out of 12 provinces have <a href="#">adopted DigiD</a> for service user authentication;</li> <li>A total of 5,393 application programming interfaces have been made available to administrations and to private companies.</li> </ul>
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## COLLABORATION

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Service co-design</li> <li><span style="color: green;">■</span> Percentage of digital transactions</li> <li><span style="color: green;">■</span> Co-creation exercises</li> <li><span style="color: green;">■</span> Acceptation of qualified trust services</li> <li><span style="color: green;">■</span> Usage of qualified trust services</li> </ul>	<p>The Netherlands has taken many actions to enhance collaboration between government organisations and with other public stakeholders. Highlights include:</p> <ul style="list-style-type: none"> <li>Co-creation is <a href="#">increasingly used</a> in the Dutch public sector, with five innovation labs providing co-creation services to government entities (MVI North Sea Energy Lab, KR8LAB, Tertium, De Bouwcampus, and Stichting ProtoSpace);</li> <li><a href="#">Ninety percent</a> of key public services in the Netherlands can be completed entirely online;</li> <li>The Netherlands has <a href="#">eight active qualified trust service providers</a>;</li> <li>The total number of activated DigiD accounts increased from <a href="#">13.7 million in 2018 to 15 million in 2019</a>.</li> </ul>
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## SKILLS

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Recruitment of personnel from the private sector</li> <li><span style="color: red;">■</span> Training on digital matters</li> </ul>	<p><a href="#">Several managers</a> working for the central government previously worked in the private sector. In 2019, there were over <a href="#">3,000 users</a> of courses related to digitalisation, offered by the National Academy for Digitalisation and Informatisation (RADIO), amounting to <a href="#">almost 3% of public servants</a>.</p>
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## MONITORING

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> KPIs on digital government</li> <li><span style="color: green;">■</span> KPIs on the uptake of online services</li> <li><span style="color: red;">■</span> KPIs on users' co-creation</li> </ul>	<p>The Dutch government keeps track of several Key Performance Indicators related to the <a href="#">availability</a> and the <a href="#">uptake</a> of digital government services, such as DigiD and Digital Mail. None of these indicators refers to user co-creation.</p>
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■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework** The [Strategy for Responsible Development of Poland](#) focuses on developing high-quality services for citizens, including entrepreneurs, through modern information- and communication-technology solutions and a logical and coherent government ICT system.
- Co-creation policy** The country shows an overall medium performance on [European Interoperability Framework implementation](#).

## INTEROPERABILITY AND REUSE

- Base registries** The government has put in place initiatives to enable increased interoperability and data reuse between public administration institutions. Highlights include:
  - The Efficient State Strategy 2020 aims to provide a high interoperability of all ICT systems and public registers through the implementation of common standards for electronic communication in the public sector. In addition, the System of State Registers (SSR) combines six registries that share referential data and exchange the information;
- Application Programming Interface (API) provision**
  - The [Portal of the Republic of Poland](#) is the main service of the Polish government, the central gateway to digital information and eServices of the state for citizens, entrepreneurs and officials;
  - [Paybynet](#) is an online payment service that is integrated with the Electronic Platform of Public Administration Services (ePUAP) and other systems of e-government offices;
  - At least [four application programming interfaces](#) have been made available to other administrations and to private companies.
- Centralised service modules provided to local authorities**
- API users**
- API calls per month**
- Percentage of uptake of services by local authorities**

## COLLABORATION

- Service co-design** Several initiatives and actions have been taken to improve public service development and enhance collaboration between government organisations and with other public stakeholders:
  - The [Digital Poland Operational Programme \(POPC\)](#) rewards ICT projects that use a modern and user-centric e-service design model;
  - [GovTech Polska](#) is an inter-ministerial team that coordinates strategic digital projects developed across the public sector, involving entrepreneurs, officials and citizens. Three initiatives were put in place aiming to diffuse co-creation practices across the public sector: citizen brainstorming, talent programs and “submit an idea;”
  - [Eighty-seven percent](#) of the key public services in Poland can be completed entirely online;
  - Poland aligned its national legal system with the eIDAS Regulation, and the National Electronic Identification Node provides convenient access to public portals and eServices. The country has [five active qualified trust service providers](#).
- Percentage of digital transactions**
- Co-creation exercises**
- Acceptation of qualified trust services**
- Usage of qualified trust services**

## SKILLS

- Recruitment of personnel from the private sector** There is no specific information for these topics.
- Training on digital matters**

## MONITORING

- KPIs on digital government** No information is available on the use of Key Performance Indicators by the national government. However, at the European level there are several performance indicators linked to [Digital Economy and Society Index](#), e.g. the Digital Public Services pillar and the User Centricity pillar (eGovernment monitoring).
- KPIs on the uptake of online services**
- KPIs on users' co-creation**

■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework**
- Co-creation policy**

The new [Strategy for the Innovation and Modernisation of the State and Public Administration 2020-2023](#) was developed through a participatory process that involved public servants, academia and the private sector. It focuses on four transformation axes: 1) investing in people, 2) developing management, 3) exploring technology, and 4) strengthening proximity. [SIMPLEX](#) is the Portuguese flagship simplification and modernisation programme. It follows a citizen-driven approach and has a strong focus on co-creation, with the goal of simplifying as much as possible citizens and businesses' everyday life as well as their interaction with the public administration.

## INTEROPERABILITY AND REUSE

- Base registries**
- Application Programming Interface (API) provision**
- Centralised service modules provided to local authorities**
- API users**
- API calls per month**
- Percentage of uptake of services by local authorities**

The federal government has put in place several measures to enable increased interoperability and data reuse between government institutions. Highlights include:

- Many base registries and respective services are currently available online as a result of initiatives such as the [Interoperability Platform for the Public Administration](#) and the [National Open Data Portal](#);
- [ePortugal.gov.pt](#) is the Portuguese Single Digital Gateway. It integrates the Citizen Portal, the Citizen Map and the Entrepreneur's Desk, facilitating the relationship between citizens, businesses and the public administration;
- The Interoperability Platform for the Public Administration offers four service modules: service integration, authentication, payments and SMS gateway.

## COLLABORATION

- Service co-design**
- Percentage of digital transactions**
- Co-creation exercises**
- Acceptation of qualified trust services**
- Usage of qualified trust services**

Portugal has taken several actions to enhance collaboration between government organisations and with other public stakeholders. Highlights include:

- [LabX - Experimentation Laboratory for Public Administration](#) at the Agency for Administrative Modernisation (AMA);
- According to the eGovernment Benchmark 2020, [99% of public services in Portugal can be completed entirely online](#);
- The total number of active users increased to 7,491,226 in 2019, up from 735,751 in 2018.

## SKILLS

- Recruitment of personnel from the private sector**
- Training on digital matters**

The [INCoDe.2030 strategy](#) includes an action point on a training programme for chief data officers to stimulate the open data strategy. Moreover, most top managers in the [Agency for the Modernisation of the Administration \(AMA\)](#) have experience in the private sector.

## MONITORING

- KPIs on digital government**
- KPIs on the uptake of online services**
- KPIs on users' co-creation**

The [Autenticação.gov platform](#) and the iAP platform feature several Key Performance Indicators on the uptake of online services. For 2019, the "Quadro de Avaliação e Responsabilização" (QUAR) includes a performance indicator on the implementation of [Portugal's participatory budget](#).

■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

Romania's Digital Agenda 2014-2020 aimed to develop a modern administration that will help increase efficiency and reduce the public sector costs. However, the European Interoperability Framework Monitoring Mechanism shows a rather middle-lower performance of the [implementation of the European Interoperability Framework](#) in Romania. The digital agenda does not explicitly mention the use of co-creation (user involvement) for all innovation projects linked to public services developments.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The government has put in place measures to enable increased interoperability and data reuse between public administration institutions.

- The draft Law on National Electronic Registers aims at reducing the duplication of the data used by the public sector, implementing the once-only principle and ensuring the reliability and safety of the data through establishment of the National Electronic Registers (REN);
- The [eGovernment portal](#) is the one-stop shop for central and local public services and forms online, e.g. [Ghiseul.ro](#) (the national electronic payment system for taxes), [eLicitatie](#) (central platform for public procurement procedures);
- An application programming interface has been made available to other administrations and to private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

There is no specific information about the actions taken to enhance the collaboration between government organisations and public stakeholders. While there is a specific law on eID and trust services for electronic transactions, the National Electronic Identification Scheme has not yet been established.

- [Seventy percent](#) of key public services in Romania can be completed entirely online;
- Romania has [eight active qualified trust service providers](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

There is no specific information for these topics.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. However, at the European level there are several performance indicators linked to public services in the [Digital Economy and Society Index](#) e.g. the Digital Public Services pillar and the User Centricity pillar (eGovernment monitoring).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



## POLICY OVERVIEW

■ Digital plan aligned with Interoperability Framework

■ Co-creation policy

The [2030 Strategy for the Digital Transformation of Slovakia](#) follows up on the priorities of the European Union digital single market strategy and puts emphasis on new digital technologies such as artificial intelligence, Internet of Things, fifth-generation broadband cellular network technology (5G), big data and analytical processing of data, blockchain and high-performance computers. The country shows an overall good performance on [European Interoperability Framework implementation](#), with particularly positive results within the first scoreboard (interoperability principles). The Strategic Document for Digital Growth and Next Generation Access Infrastructure (2014-2020) included proposals to promote a citizen-oriented and transparent effective public administration.

## INTEROPERABILITY AND REUSE

■ Base registries

■ Application Programming Interface (API) provision

■ Centralised service modules provided to local authorities

■ API users

■ API calls per month

■ Percentage of uptake of services by local authorities

The government has put in place initiatives to enable increased interoperability and data reuse between public administration institutions. Highlights include:

- The eGovernment Act sets up rules, standards and regulations for establishing a single way of providing data from the information systems of the public authorities (mainly from reference registries);
- The [Central Government Portal](#) is a single access point for public services for citizens, businesses and public authorities. The portal is the common communication infrastructure in place for the public administration institutions;
- Two application programming interfaces have been made available to administrations and to private companies.

## COLLABORATION

■ Service co-design

■ Percentage of digital transactions

■ Co-creation exercises

■ Acceptation of qualified trust services

■ Usage of qualified trust services

Slovakia put in place several initiatives and actions to improve the public services development and enhance collaboration between government organisations and with other public stakeholders:

- The Action plan for Slovakia's digital transformation (2019-2022) includes several projects related to innovation in the public administration that have stakeholders' engagement as a standard operating feature;
- [Eighty-five percent](#) of the key public services in Slovakia can be completed entirely online;
- An eID card for citizens is in place since 2013 and includes the optional functionality of electronic signature. The country has [six active qualified trust service providers](#).

## SKILLS

■ Recruitment of personnel from the private sector

■ Training on digital matters

There is no specific information for these topics.

## MONITORING

■ KPIs on digital government

■ KPIs on the uptake of online services

■ KPIs on users' co-creation

Statistical data on electronic mailboxes and on the use of electronic services through the central portal are published as datasets on the Open Data Portal.

■ High progress

■ Medium progress

■ Low progress

■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The [Digital Slovenia 2020 strategy](#) aims to provide a sustainable, systematic and targeted investment for the digital society's development, with the "digital by default" principle at its core, and supported the competitive digital entrepreneurship and digital industry. The country shows an overall good performance of the [European Interoperability Framework implementation](#), with particularly positive results within the second scoreboard (interoperability layers).

- The Development Innovative Cloud (RIO) of the Slovenian administration aims to establish a development environment for start-ups, innovators, researchers, students, individuals, NGOs and public institutions for further developments.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The government has put in place initiatives to enable increased interoperability and data reuse between public administration institutions. Highlights include:

- The Access to Public Information Act regulates the open and transparent functioning of the public sector and places the emphasis on the online publication of the public sector open data. It pays special attention to the provision for database management by public administration bodies, and connectivity between databases;
- [GOV.SI portal](#) is the central website for easy access to comprehensive information on the organisation and functioning of the state administration. For citizens, [eUprava](#) is the single electronic entry point for the public services, while for Slovenian businesses it is the business portal [SPOT](#);
- At least [one application programming interface](#) has been made available to administrations and to private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

There is no specific information about the actions taken to enhance the collaboration between government organisations and the public stakeholders.

- [Ninety-one percent](#) of key public services in Slovenia can be completed entirely online;
- The Authentication and eSignature Service SI-PASS is in place and has been fully operational since 2017. It has been integrated into major public administration systems and offers a central service for authentication and eSignature, with different levels of trust, including qualified digital signatures compliant with the eIDAS regulation. The country has [nine active qualified trust service providers](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

There is no specific information for these two topics.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. However, at the European level there are several performance indicators linked to the public services, e.g. the Digital Public Services pillar ([DESI](#)) and the User Centricity pillar (eGovernment monitoring).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The [Spain ICT Strategy \(2015-2020\)](#) is aligned with the National Interoperability Framework. A new strategic plan in the field of digital government and ICT for the period 2021 to 2024 is in the pipeline. The country shows an overall good performance of the [European Interoperability Framework implementation](#) with particularly positive results within the interoperability layers' scoreboard. In March 2021, the Spanish government started the implementation of [online procedures for prior public consultation, hearing and public information](#) related to new state laws and regulations.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The government has put in place initiatives to enable increased interoperability and data reuse between public administration institutions. Highlights include:

- The Digital Transformation Plan for the General Administration ensured support for the electronic access and semantic interoperability among administration registries. The new Interoperability guideline recommends the Common Metadata Scheme to all public administrations;
- [Cl@ve](#) is the access point for the public administration services, allowing identification, authentication and electronic signature. In December 2020, it is used by [7,249](#) (89%) Spanish municipalities;
- At least [14 application programming interfaces](#) have been made available to administrations and private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Several initiatives and actions have been taken to improve the public services development and enhance collaboration between government organisations and with other public stakeholders:

- [Co-creation methods used](#): the analysis of data on previous user experiences, in-depth one-on-one research, focus groups, users in brain-storming workshops and real-time studies of user experiences;
- [NovaGob.Lab](#), the first laboratory for public innovation, aims to address public problems using experimental methodologies and involving multiple stakeholders;
- [Ninety-six percent](#) of key public services in Spain can be completed entirely online;
- The Cl@ve system is a common eID-system incorporated in all digital services of the Central State Administration. It is also integrated into the electronic identities cross-border recognition system, eIDAS, providing identification mechanisms of other EU countries;
- The country has [36 active qualified trust service providers](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

There is no specific information for these topics.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

[DATAOBSAE](#) is a tool of Electronic Administration Observatory (OBSAE) offering a public dashboard with several indicators for the public administration bodies, using data from horizontal services or external sources, with monthly updates.

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet



## POLICY OVERVIEW

- Digital plan aligned with Interoperability Framework
- Co-creation policy

The strategy [A Sustainable Digitalised Sweden](#) has five goals: to enhance citizens' digital skills, to increase digital security, to foster digital innovation, to improve digital leadership and to reinforce the digital infrastructure. The country shows positive results of the [European Interoperability Framework implementation](#), in particular within the second scoreboard (interoperability principles), but the necessary improvements are distributed between all three scoreboards. The strategy recognises the need for innovative and collaborative management, with the user at the centre, to achieve a performing government that helps create opportunities for individuals and companies.

## INTEROPERABILITY AND REUSE

- Base registries
- Application Programming Interface (API) provision
- Centralised service modules provided to local authorities
- API users
- API calls per month
- Percentage of uptake of services by local authorities

The government has put in place initiatives to enable increased interoperability and data reuse between public administration institutions. Highlights include:

- At the end of 2019, two new government initiatives were started to create a foundation for a more standardised and interoperable national approach to base registries and information exchange: 1) a national basic data framework in public administration; 2) a digital infrastructure for information exchange;
- The [Agency for Digital Government](#) is responsible for eidentification, eInvoicing, digital post, web accessibility, standardisation concerning data and information exchange;
- At least [four application programming interfaces](#) have been made available to other administrations and to private companies.

## COLLABORATION

- Service co-design
- Percentage of digital transactions
- Co-creation exercises
- Acceptation of qualified trust services
- Usage of qualified trust services

Sweden put in place several initiatives and actions to improve public service development and enhance collaboration between government organisations and with other public stakeholders. Highlights include:

- The [Innovation Partnership Programmes](#) is a collaborative approach to innovation, aiming to find innovative solutions to a number of major and global societal challenges in partnership with different sectors of society;
- The [eGovlab](#) provides an environment for developing the future of inclusive governance in both theory and practice;
- [Ninety-two percent](#) of key public services in Sweden can be completed entirely online;
- The eID card for citizens has been in place since 2005. It complies with International Civil Aviation Organisation (ICAO) standards for biometric travel documents and it may be used to securely access eGovernment services. The country has [two active qualified trust service providers](#).

## SKILLS

- Recruitment of personnel from the private sector
- Training on digital matters

The government-run Hack for Sweden is considered to be a learning opportunity. Hosted by the Swedish Employers' Agency in 2019, the event gathered 420 hackers and 90 organisations, out of which about half were authorities, aiming to solve societal challenges together.

## MONITORING

- KPIs on digital government
- KPIs on the uptake of online services
- KPIs on users' co-creation

No information is available on the use of Key Performance Indicators by the national government. However, at the European level there are several performance indicators linked to the [Digital Economy and Society Index](#) e.g. the Digital Public Services pillar and the User Centricity pillar (eGovernment monitoring).

■ High progress      ■ Medium progress      ■ Low progress      ■ Data not available yet

## POLICY OVERVIEW

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Digital plan aligned with Interoperability Framework</li> <li><span style="color: red;">■</span> Co-creation policy</li> </ul>	<p>The Digital Service Standard and Technology Code of Practice are the UK government's standards for creating and running digital services. The Digital Service Standard is highlighted in the UK Digital Strategy 2017. The <a href="#">Technology Code of Practice</a> is part of the Transformation Strategy 2017-2020 and the Local Digital Declaration. Both standards are aligned with the recommendations and principles of the European Interoperability Framework. The digital plan does not mention co-creation specifically. It includes user research, which may or may not involve co-creation, as an element of the <a href="#">UK Service Manual</a>.</p>
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## INTEROPERABILITY AND REUSE

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Base registries</li> <li><span style="color: green;">■</span> Application Programming Interface (API) provision</li> <li><span style="color: green;">■</span> Centralised service modules provided to local authorities</li> <li><span style="color: grey;">■</span> API users</li> <li><span style="color: grey;">■</span> API calls per month</li> <li><span style="color: grey;">■</span> Percentage of uptake of services by local authorities</li> </ul>	<p>The UK government has put in place several measures to enable increased interoperability and data reuse between government institutions. Highlights include:</p> <ul style="list-style-type: none"> <li><a href="#">GOV.UK Registers</a> provides datasets of government information to help users build services on high-quality data;</li> <li>Five central service modules are available to UK government organisations: <a href="#">GOV.UK Notify</a>, <a href="#">GOV.UK Pay</a>, <a href="#">GOV.UK Verify</a>, <a href="#">GOV.UK Platform as a Service</a> and <a href="#">GOV.UK Registers</a>;</li> <li>GOV.UK Notify is used by 818 government organisations for a total of 3,198 services. GOV.UK Pay is used by 162 organisations for a total of 341 services. GOV.UK Verify is used by nine organisations, for a total of 22 services. GOV.UK Registers is used by an unknown number of organisations for a total of 13 services;</li> <li>One hundred and ten application programming interfaces are provided to other administrations and private companies.</li> </ul>
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## COLLABORATION

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Service co-design</li> <li><span style="color: green;">■</span> Percentage of digital transactions</li> <li><span style="color: grey;">■</span> Co-creation exercises</li> <li><span style="color: red;">■</span> Acceptation of qualified trust services</li> <li><span style="color: orange;">■</span> Usage of qualified trust services</li> </ul>	<p><a href="#">Conducting in-depth one-on-one research with users</a> is the most used co-creation method in the development of government units' most important innovations. Other highlights include:</p> <ul style="list-style-type: none"> <li><a href="#">Ninety-three percent</a> of public services in the United Kingdom can be completed entirely online;</li> <li>The United Kingdom does not count any active <a href="#">qualified trust service providers</a>;</li> <li>Until September 2020, a total number of 7,272,225 users had signed up for the eID service <a href="#">GOV.UK Verify</a>;</li> <li><a href="#">The Policy Lab</a> of the British Cabinet Office is bringing new policy tools for co-creation to the UK government.</li> </ul>
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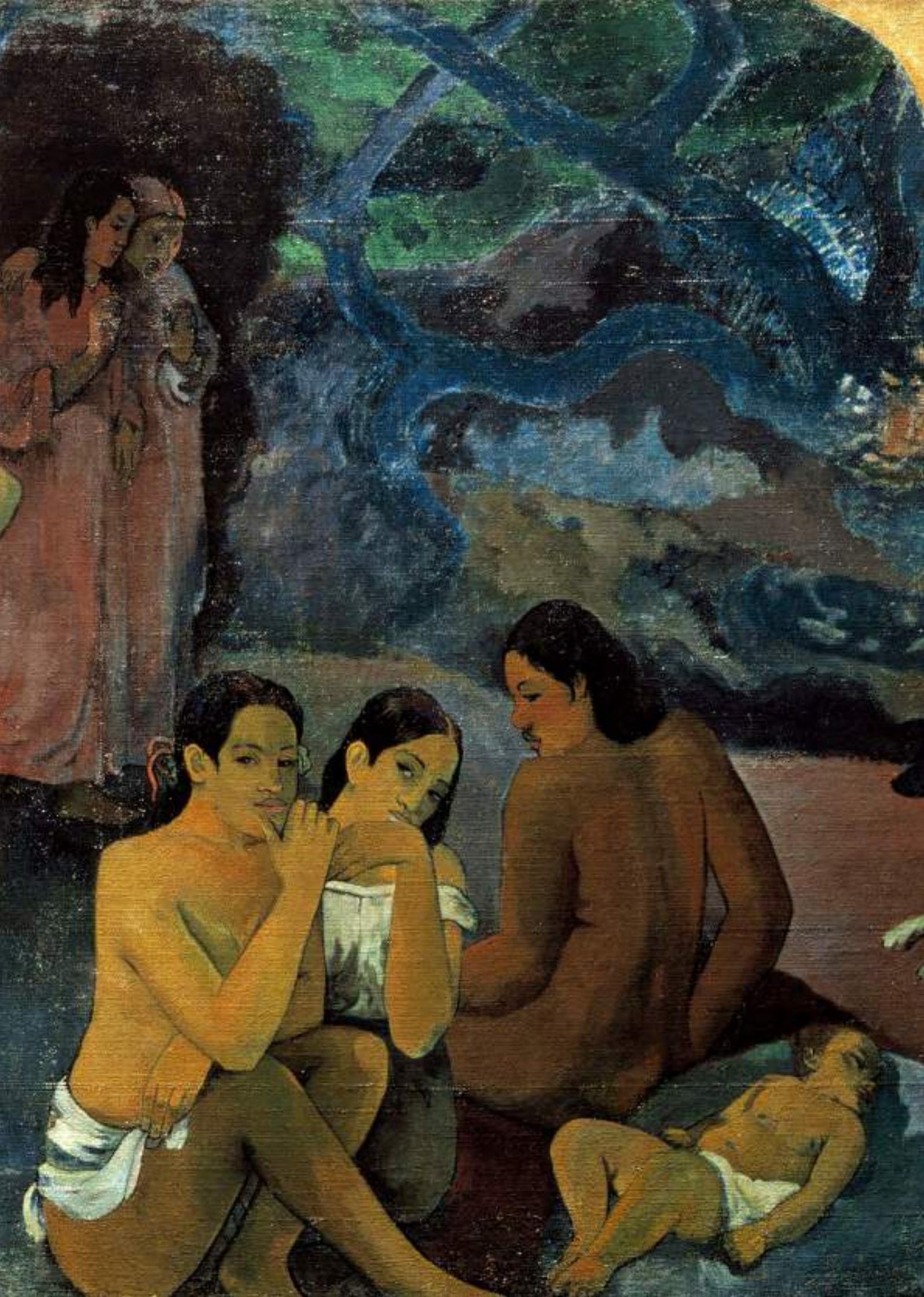
## SKILLS

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Recruitment of personnel from the private sector</li> <li><span style="color: red;">■</span> Training on digital matters</li> </ul>	<p>The <a href="#">Head of Agile Delivery Profession</a> at the UK government's Companies House was hired in early 2020 after working in the private sector for 20 years. The <a href="#">Global Digital Service (GDS) Academy</a> teaches public sector professionals the digital skills they need to transform public services. At the start of 2019, 10,000 students had received training on digital matters. This number of students made up over 2% of the civil service workforce at that time.</p>
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## MONITORING

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> KPIs on digital government</li> <li><span style="color: green;">■</span> KPIs on the uptake of online services</li> <li><span style="color: green;">■</span> KPIs on users' co-creation</li> </ul>	<p>At the level of individual services, <a href="#">digital performance is monitored and published</a>, albeit not systematically for all services. Seven hundred and seventy-seven service dashboards and 15 other dashboards are available.</p>
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■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet



## Annex III. A Tale of Six Cities

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Co-creation is not just a national phenomenon. For innovative government to have impact, it needs to take place in the cities and neighborhoods where most public services are actually delivered. The dashboard set out to measure co-creation in six cities:

Amsterdam, Athens, Madrid, Milan, Paris and Turin. A very special thanks to the administrators and others in these cities who helped us compile and analyse the statistics and data.

## POLICY OVERVIEW

<p><b>Digital plan aligned with Interoperability Framework</b></p>	<p>Amsterdam puts a strategic emphasis on co-creation and is internationally active. Highlights include:</p> <ul style="list-style-type: none"> <li>• <a href="#">A Digital City</a> is the digital agenda for Amsterdam. It does not mention interoperability, but does have responsible use of data and technology as a focal point;</li> </ul>
<p><b>Co-creation policy</b></p>	<ul style="list-style-type: none"> <li>• The importance of co-creation is expressed in the city's Information Policy (<a href="#">I-visie</a>) and the <a href="#">digital agenda</a>, which pledges to actively involve citizens, scientists and artists in the quest to find answers to the city's issues;</li> </ul>
<p><b>Participation in EU projects</b></p>	<ul style="list-style-type: none"> <li>• Amsterdam is lead partner in SCORE (Interreg project for Open Source &amp; Code for public services), Smart City networks, Resilience Network, Cities Coalition for Digital Rights, CGCC (network of municipal chief technology officers and chief information officers) and City Protocol.</li> </ul>
<p><b>Participation in international networks</b></p>	

## INTEROPERABILITY AND REUSE

<p><b>Base registries</b></p>	<p>Amsterdam has taken several actions in the area of interoperability/reuse. Highlights include:</p> <ul style="list-style-type: none"> <li>• Amsterdam's base registries are published online on <a href="#">data.amsterdam.nl</a>. All resident registries in the Netherlands are centrally accessible to other administrations;</li> </ul>
<p><b>Application Programming Interface (API) provision</b></p>	<ul style="list-style-type: none"> <li>• Fifty-nine application programming interfaces are available to consult data on <a href="#">data.amsterdam.nl</a>;</li> </ul>
<p><b>API users</b></p>	<ul style="list-style-type: none"> <li>• The city uses several centralised digital service modules: E-herkenning, DigiD, Berichtenbox and base registries.</li> </ul>
<p><b>API calls per month</b></p>	
<p><b>Percentage of uptake of services by local authorities</b></p>	

## COLLABORATION

<p><b>Service co-design</b></p>	<p>Amsterdam realised several co-creation exercises over the past five years. Highlights include:</p> <ul style="list-style-type: none"> <li>• The innovation platform <a href="#">Amsterdam Smart City</a> connects the people who build the cities of tomorrow;</li> </ul>
<p><b>Percentage of digital transactions</b></p>	<ul style="list-style-type: none"> <li>• The primary tasks of the <a href="#">Digital City</a> were identified and discussed through several digitisation sessions with Amsterdammers and experts between October and December 2018;</li> </ul>
<p><b>Co-creation exercises</b></p>	<ul style="list-style-type: none"> <li>• The 2018 Amsterdam Information Policy (<a href="#">I-visie</a>) is a result of co-creation with over 100 professionals from Amsterdam and beyond.</li> </ul>
<p><b>Acceptation of qualified trust services</b></p>	
<p><b>Usage of qualified trust services</b></p>	

## SKILLS

<p><b>Recruitment of personnel from the private sector</b></p>	<p>There is no information available on the recruitment of personnel from the private sector or training on digital matters.</p>
<p><b>Training on digital matters</b></p>	

## MONITORING

<p><b>KPIs on digital government</b></p>	<p>The <a href="#">2019 yearly report</a> of Amsterdam mentions several Key Performance Indicators related to digital government, such as the percentage of digital requests for social welfare, the yearly growth of the number of consultations from the city's data point <a href="#">data.amsterdam.nl</a> and the local residents' appreciation for the <a href="#">city council's website</a>.</p>
<p><b>KPIs on the uptake of online services</b></p>	
<p><b>KPIs on users' co-creation</b></p>	

■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet

## POLICY OVERVIEW

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Digital plan aligned with Interoperability Framework</li> <li><span style="color: red;">■</span> Co-creation policy</li> <li><span style="color: green;">■</span> Participation in EU projects</li> <li><span style="color: green;">■</span> Participation in international networks</li> </ul>	<p>The <a href="#">Digital Roadmap of Athens Municipality</a> is aligned with the <a href="#">Greek e-Government Interoperability Framework</a>. It is being implemented by <a href="#">DAEM S.A. (City of Athens IT Company)</a>, which provides cloud-based multiplatform digital solutions to local government organisations, the public administration and other authorities. Through DAEM S.A., the Municipality of Athens has participated in <a href="#">several European co-funded projects</a>, such as CO3, Aniketos, Citadel, TECHNOLANGUE and M-Guide. The mayor of Athens signed the <a href="#">declaration Living-in.eu</a> on joining forces to boost sustainable digital transformation in cities and communities in the European Union. Athens participates in numerous networks, which, for example, include a <a href="#">global network of cities, companies and communities</a> working together to promote sustainable urban co-development and the <a href="#">Bloomberg Philanthropies program</a> for accelerating digital innovation to improve critical services and deliver better results for residents.</p>
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## INTEROPERABILITY AND REUSE

<ul style="list-style-type: none"> <li><span style="color: red;">■</span> Base registries</li> <li><span style="color: red;">■</span> Application Programming Interface (API) provision</li> <li><span style="color: red;">■</span> API users</li> <li><span style="color: red;">■</span> API calls per month</li> <li><span style="color: green;">■</span> Percentage of uptake of services by local authorities</li> </ul>	<p>The Municipality of Athens uses software and service components provided by the national government. Highlights include:</p> <ul style="list-style-type: none"> <li>• The e-ID implementation according to the <a href="#">E-authentication Service oAuth 2.0</a>;</li> <li>• The use of an <a href="#">e-payment module for e-parking</a>.</li> </ul>
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## COLLABORATION

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Service co-design</li> <li><span style="color: red;">■</span> Percentage of digital transactions</li> <li><span style="color: green;">■</span> Co-creation exercises</li> <li><span style="color: green;">■</span> Acceptation of qualified trust services</li> <li><span style="color: grey;">■</span> Usage of qualified trust services</li> </ul>	<p>With regards to service co-design and co-creation, the Municipality of Athens shows a high level of performance. Highlights:</p> <ul style="list-style-type: none"> <li>• <a href="#">SynAthina</a>, an online platform that allows members of the community to engage in problem-solving and reform and enables individual citizens and groups to develop ideas to improve their city and volunteer;</li> <li>• <a href="#">Athens Digital Lab</a>, an incubator for digital services. In the framework of the Athens Digital Lab around 10 co-creation exercises have been carried out;</li> <li>• <a href="#">Athens Partnership</a>, an organisation designed to develop projects with local government and a network of partners to effectively target needs, identify gaps and maximise resources;</li> <li>• <a href="#">The National Regulatory Authority for the Postal Sector (EETT)</a> is responsible for the Provision of Trust Services and e-IDAS.</li> </ul>
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## SKILLS

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Recruitment of personnel from the private sector</li> <li><span style="color: red;">■</span> Training on digital matters</li> </ul>	<p>Private sector personnel have been hired to fill <a href="#">managerial positions</a> at the City Council, the Municipal Committee and other municipal departments. Training on digital matters has been provided to less than 10% of the staff in the last three years.</p>
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## MONITORING

<ul style="list-style-type: none"> <li><span style="color: red;">■</span> KPIs on digital government</li> <li><span style="color: red;">■</span> KPIs on the uptake of online services</li> <li><span style="color: red;">■</span> KPIs on users' co-creation</li> </ul>	<p>Athens does not use Key Performance Indicators to monitor digital government, the uptake of online services or the level of users' co-creation.</p>
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■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet

## POLICY OVERVIEW

- **Digital plan aligned with Interoperability Framework**
  - The upcoming municipal e-Government Plan explicitly considers the European Interoperability Framework. Along with other key strategies, such as those on Data Governance and Artificial Intelligence, this plan will be part of Madrid City Council's Digital Transformation Strategy;
- **Co-creation policy**
  - Madrid coordinates the LEAD project to create on-demand public-private logistics networks where digital innovation is key and participates in Mobility as a Service (MaaS) and ECCENTRIC CIVITA (innovative management of parking);
- **Participation in EU projects**
  - Madrid has been active in the Union of Ibero-American Capital Cities (UCCI), United Cities and Local Governments (CGLU), POLIS, EUROCITIES and ISA<sup>2</sup> (DIGIT).
- **Participation in international networks**

## INTEROPERABILITY AND REUSE

- **Base registries**

The City of Madrid has taken an active role in boosting interoperability and data reuse. Highlights include:

  - Madrid leverages the central government's [data intermediation platform \(PID\)](#) to make a series of municipal services available for (bi-lateral) use by other public administrations and ensure interoperability with professional associations;
- **Application Programming Interface (API) provision**
  - The [REST API datos.madrid.es](#), which proposes 72 operations, allows third parties (companies, associations, journalists, entrepreneurs or people dedicated to research) to reuse the datasets published by the Madrid City Council;
- **API users**
  - The [Open Data Portal](#) has generated over 800 registered users, 13 million downloads and 35 developed applications;
- **API calls per month**
  - The city uses several centralised service modules: Cl@ve (eID), state registry systems (SIR), the invoice system (FACE), the Electronic Notification for Traffic Penalties (DEV) and the publication of Edicts through the BOE (Official State Gazette).
- **Percentage of uptake of services by local authorities**

## COLLABORATION

- **Service co-design**

The City of Madrid has a strong profile on collaboration with multiple public stakeholders. Highlights include:

  - In December 2020, the number of available digital services of the City of Madrid amounted to 473;
- **Percentage of digital transactions**
  - Seventy-seven percent of authentications on the [Madrid Citizen Portal](#) were realised using a centrally provided eID-solution (DNle; Cl@ve);
- **Co-creation exercises**
  - The new system for [economic activity permits](#) has been designed through co-creation with various groups;
- **Acceptation of qualified trust services**
  - [Decide Madrid](#) is the municipal citizen participation portal for interactions on topics such as participatory budgets, the remodelling of the urban landscape, and [solidarity initiatives](#) that arose during the health crisis.
- **Usage of qualified trust services**

## SKILLS

- **Recruitment of personnel from the private sector**

In recent years, the Madrid City Council Training School (EFAM) has given many courses as part of the IT and Digital Skills Programme designed in the annual Training Plan for municipal employees. The [Transparency Portal](#) features several managerial profiles with previous experience in the private sector, such as the City Council President.
- **Training on digital matters**

## MONITORING

- **KPIs on digital government**

The Business Intelligence system of the Madrid City Council shows indicators related to electronic services, including some on uptake, such as the use of the Electronic Registry and the Citizen Folder. New indicators are being defined for the creation of an Observatory to measure the digitalisation proposed in the upcoming Digital Transformation Strategy.
- **KPIs on the uptake of online services**
- **KPIs on users' co-creation**

■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet

## POLICY OVERVIEW

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Digital plan aligned with Interoperability Framework</li> <li><span style="color: red;">■</span> Co-creation policy</li> <li><span style="color: green;">■</span> Participation in EU projects</li> <li><span style="color: green;">■</span> Participation in international networks</li> </ul>	<p>The City of Milan has an <a href="#">Enterprise Architecture plan (Piano di Trasformazione Digitale)</a> aligned with the European Interoperability Framework as well as an interoperability platform. At the moment, co-creation is not foreseen for all innovation projects. Milan has different “digital bridges” with other major cities, is a member of the Open &amp; Agile Smart Cities (OASC) and is active in at least <a href="#">15 EU projects</a>.</p>
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## INTEROPERABILITY AND REUSE

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Base registries</li> <li><span style="color: green;">■</span> Application Programming Interface (API) provision</li> <li><span style="color: green;">■</span> API users</li> <li><span style="color: green;">■</span> API calls per month</li> <li><span style="color: green;">■</span> Percentage of uptake of services by local authorities</li> </ul>	<p>The city government has put in place several measures to ensure interoperability and data reuse. Highlights include:</p> <ul style="list-style-type: none"> <li>• Several base registries are accessible by other public administrations through the APP IO channel implemented by the National Digital Transformation Team: population registry, property taxes and car pass for residents;</li> <li>• Milan has adopted the following service components: pagoPA (ePayment), SPID (eID), and ANPR (National Population Register);</li> <li>• The application programming interface platform featured 160 APIs on 30 April 2019, is used to develop services for the municipality, supports 2,000 transactions per second and receives 1,800,000 calls per month. Eight third parties use the APIs, mostly partners of Horizon 2020 projects.</li> </ul>
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## COLLABORATION

<ul style="list-style-type: none"> <li><span style="color: black;">■</span> Service co-design</li> <li><span style="color: black;">■</span> Percentage of digital transactions</li> <li><span style="color: green;">■</span> Co-creation exercises</li> <li><span style="color: green;">■</span> Acceptation of qualified trust services</li> <li><span style="color: orange;">■</span> Usage of qualified trust services</li> </ul>	<p>Milan has taken several actions to enhance collaboration between government organisations and other public stakeholders. Highlights include:</p> <ul style="list-style-type: none"> <li>• At least 10 co-creation exercises took place in several domains. In all new ICT projects, the city embeds user-centric co-creation with employees and citizens. Public registers/web enrolments were used in 2014-2016;</li> <li>• The percentage of digital transactions strongly varies, ranging from 30% for new ID card appointments and resident parking permits, to 50% for certificates and 100% for education services applications and other services that are exclusively available online;</li> <li>• Qualified trust services are accepted, including SPID, <i>Firma digitale</i> (digital signature) and <i>Posta Elettronica Certificata</i> (certified email);</li> <li>• Sixteen percent of the Milan citizen base has been enabled to the full range of online services (350,000 verified identities) using SPID. More than 50% of the new users logging in the first time are using SPID.</li> </ul>
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## SKILLS

<ul style="list-style-type: none"> <li><span style="color: black;">■</span> Recruitment of personnel from the private sector</li> <li><span style="color: black;">■</span> Training on digital matters</li> </ul>	<p>There are several internal links providing training on digital matters for the City of Milan staff about different themes: document management, interoperability, data protection, etc. There is also an ICT innovation portal called Innesco.</p>
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## MONITORING

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> KPIs on digital government</li> <li><span style="color: green;">■</span> KPIs on the uptake of online services</li> <li><span style="color: red;">■</span> KPIs on users' co-creation</li> </ul>	<p>The use of Key Performance Indicators for digital government is depicted in the penetration index, which serves as adoption rate also of online services (the percentage of use of digital services compared to traditionally delivered services).</p>
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■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet

## POLICY OVERVIEW

<ul style="list-style-type: none"> <li><span style="color: red;">■</span> Digital plan aligned with Interoperability Framework</li> <li><span style="color: green;">■</span> Co-creation policy</li> <li><span style="color: red;">■</span> Participation in EU projects</li> <li><span style="color: green;">■</span> Participation in international networks</li> </ul>	<p>Paris puts a strategic emphasis on co-creation and is internationally active. Highlights include:</p> <ul style="list-style-type: none"> <li>The strategic plan <a href="#">Paris. Smart and Sustainable. Looking Ahead to 2020 and Beyond</a> emphasises the importance of interoperability as part of one of its three key pillars of the connected city, but is not explicitly aligned with the European Interoperability Framework;</li> <li>The city has adopted the <a href="#">Open City Method</a> in order to develop solutions through collective intelligence and collaboration between public stakeholders, businesses, researchers and citizens;</li> <li>Paris is one of the 15 pioneers of the Open Government Partnership (OGP) and is active in the <a href="#">Fab City Network</a>, <a href="#">DATACITY international</a> and the <a href="#">Marketplace of the European Innovation Partnership on Smart Cities and Communities</a>.</li> </ul>
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## INTEROPERABILITY AND REUSE

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Base registries</li> <li><span style="color: orange;">■</span> Application Programming Interface (API) provision</li> <li><span style="color: black;">■</span> API users</li> <li><span style="color: black;">■</span> API calls per month</li> <li><span style="color: green;">■</span> Percentage of uptake of services by local authorities</li> </ul>	<p>Regarding interoperability and reuse, Paris has mainly been active in the area of open data. Highlights include:</p> <ul style="list-style-type: none"> <li>As part of the Act II of the Open Data and Data Governance Policy, the mass release of financial, social, urban planning, environmental and transportation data has been realised, resulting in more than 200 published datasets on Paris' <a href="#">Open Data Portal</a>;</li> <li>The <a href="#">Paris Tennis service</a> can be accessed using the national eID service <a href="#">FranceConnect</a>. For other online services, Parisians are required to create a <a href="#">Mon Paris</a> (My Paris) account;</li> <li>Two application programming interfaces have been made available on Paris' <a href="#">Open Data Portal</a>.</li> </ul>
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## COLLABORATION

<ul style="list-style-type: none"> <li><span style="color: green;">■</span> Service co-design</li> <li><span style="color: black;">■</span> Percentage of digital transactions</li> <li><span style="color: black;">■</span> Co-creation exercises</li> <li><span style="color: green;">■</span> Acceptation of qualified trust services</li> <li><span style="color: black;">■</span> Usage of qualified trust services</li> </ul>	<p>The City of Paris realised several co-creation exercises over the past five years. Highlights include:</p> <ul style="list-style-type: none"> <li>Co-designing the <a href="#">Town Hall of Tomorrow</a> in the 19th arrondissement around the theme of hospitality;</li> <li><a href="#">La Transfo</a>, launched in September 2016, aims to test and co-create a public innovation laboratory with city officials;</li> <li><a href="#">Civic Hall</a> is a venue where civic tech, public and citizen innovation stakeholders can come together to exchange ideas;</li> <li>A new version of the <a href="#">DansMaRue</a> app gives Parisians not only a way to report problems in public spaces, but also suggest new locations for development, street furniture or services.</li> </ul>
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## SKILLS

<ul style="list-style-type: none"> <li><span style="color: black;">■</span> Recruitment of personnel from the private sector</li> <li><span style="color: black;">■</span> Training on digital matters</li> </ul>	<p>Paris has <a href="#">partnered</a> with the National Centre for the Territorial Public Service (CNFPT) to develop the competences of City of Paris officials and offer courses, among which are <a href="#">courses on digital matters</a>.</p>
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## MONITORING

<ul style="list-style-type: none"> <li><span style="color: black;">■</span> KPIs on digital government</li> <li><span style="color: black;">■</span> KPIs on the uptake of online services</li> <li><span style="color: black;">■</span> KPIs on users' co-creation</li> </ul>	<p>The 2015 <a href="#">Strategic Plan for a Smart and Sustainable Paris</a> indicates that the steering committee will validate the relevance of the actions carried out based on an annual dashboard made up of major key indicators and supplemented by analyses of how Paris can respond to changes and the challenges of major innovations. No additional evidence on the existence and use of such indicators has been found.</p>
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■ High progress     
 ■ Medium progress     
 ■ Low progress     
 ■ Data not available yet

### POLICY OVERVIEW

**Digital plan aligned with Interoperability Framework**

The [Turin Digital Agenda](#) is focused on the issue of improving interoperability at the national level more than at the European level. Still, the city has participated in several European Union projects, such as INNOVATO-R, URB-INCLUSION (co-creating new implementation solutions for poverty reduction in deprived urban areas) and CO-City CO3 (Digital Disruptive Technologies to Co-create, Co-produce and Co-manage Open Public Services along with Citizens).

**Co-creation policy**

**Participation in EU projects**

**Participation in international networks**

### INTEROPERABILITY AND REUSE

**Base registries**

The city government has put in place several measures to ensure interoperability and data reuse. Highlights include:

**Application Programming Interface (API) provision**

- Data from the register office for the resident population are offered to other public administrations via application programming interfaces;
- Some of the used centralised services are: a national repository of territorial data (RNDT), a national register of the resident population (ANPR), a national archive of street numbers of urban roads (ANNCSU), the Public Administration Index (IPA), Public Administration Data Catalogue (dati.gov.it), Business Register, Land Register, Tax Register;

**API users**

**API calls per month**

**Percentage of uptake of services by local authorities**

- Twenty APIs have been created. Public and public-private bodies use services via APIs developed by the local authority (most of them are services called "servizi in cooperazione applicative);"
- Fifty thousand API calls per month, building on statistics concerning the main public registry (based on 2500 users and 20 working days per month).

### COLLABORATION

**Service co-design**

Turin has taken several actions to enhance collaboration between government organisations and with other public stakeholders. Highlights include:

**Percentage of digital transactions**

**Co-creation exercises**

**Acceptation of qualified trust services**

**Usage of qualified trust services**

- Service co-design has been used partially and mostly for services developed since 2017;
- At least five co-creation exercises about public registers/web enrolments took place between 2014 and 2016;
- Fifteen percent of transactions are digital through the [TorinoFacile](#);
- There is acceptance of qualified trust services for eID: SPID and Cie-ID;
- In 2018, the usage of qualified trust services was 30%, specifically SPID access on the TorinoFacile portal.

### SKILLS

**Recruitment of personnel from the private sector**

As far as it is known, Turin has not recruited personnel from the private sector in management positions, nor has provided training on digital matters.

**Training on digital matters**

### MONITORING

**KPIs on digital government**

**KPIs on the uptake of online services**

**KPIs on users' co-creation**

The [Turin Digital Agenda](#) announces the development of a monitoring system including digital government indicators and a scoreboard, but the current status is unknown. One example of Key Performance Indicators for users' co-creation is given by MONICA (Management of Networked of IoT Wearables – Very Large-Scale Demonstration of Cultural & Security Applications).

■ High progress

■ Medium progress

■ Low progress

■ Data not available yet

## Annex IV. The Co-Val Stakeholder Panel

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A very special thanks goes to the team of people who volunteered their time to help us locate reliable data and ensure that the process we built around it was relevant and robust.

- **Marc Blau**, director, human resources and state organisation centre (CGPO), Luxembourg
- **Jean Bruijnzeels**, manager, Maastricht city council
- **Concepción Campos**, secretary, municipality of Vigo
- **Elisa Cassinadri**, head, economic planning unit, municipality of Milan
- **Karim Cherroud**, founder, Urban Connector, Belgium
- **Gerhard Embacher-Köhle**, innovation manager, Federal Computing Center Austria
- **Henrik Finsrud**, manager for innovation, Norwegian association of local and regional authorities
- **Olivier Garry**, project leader for digital strategy, commission for sustainable development (CGDD), France
- **Tuija Hirvikoski**, president, European Network of Living Labs (ENoLL)
- **Katalin Kiszely**, chief advisor, ministry of justice, Hungary
- **Matija Kodra**, head, quality unit, ministry of public administration, Slovenia
- **Marietta Le**, senior advisor of the mayor on citizen participation, municipality of Budapest
- **Herbert Leitold**, secretary-general, Austria Secure Information Technology Center (A-SIT)
- **Fiorenza Lipparini**, director of research, PlusValue Advisory, United Kingdom
- **Salvatore Marras**, innovation manager, Formez, Italy
- **Gianluca Misuraca**, research fellow, Danube University Krems
- **Francesco Molinari**, founder, Molinari consultants
- **Erik Oftedal**, director, Norwegian labour and welfare organisation (NAV)
- **Fernando De Pablo Martín**, digital office director, Madrid city council
- **Marie Ramon-Daré**, designer, commission for sustainable development (CGDD), France
- **Paz Sánchez**, head, innovation department, Andalucía public administration institute
- **Francesco P. Schiavo**, director, innovation and information systems, ministry of economy and finance, Italy

- **Metka Stare**, research professor and senior adviser, university of Ljubljana
- **Antonis Stasis**, head, directorate of e-government, ministry of interior and administrative reconstruction, Greece
- **Klaudia Pataki Szemereyne**, mayor, municipality of Kecskemét, Hungary
- **Dimitri Tartari**, public policy advisor, Emilia-Romagna regional government
- **Torben Thranæs**, research director, Danish center for social science research (VIVE)

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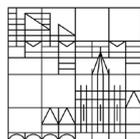


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# Where Do We Come From? What Are We? Where Are We Going?



"Where Do We Come From? What Are We? Where Are We Going?" (1897) By Paul Gauguin  
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