European Commission

eGovernment factsheets anniversary report

DIGIT
Directorate-General for Informatics

ISA² Programme
ec.europa.eu/isa2

ISA²

Disclaimer

This document is for informational purposes only and the Commission cannot be held responsible for any use which may be made of the information contained therein. References to legal acts or documentation of the European Union (EU) cannot be perceived as amending legislation in force or other EU documentation.

The document contains a brief overview of technical nature and is not supplementing or amending terms and conditions of any procurement procedure; therefore, no compensation claim can be based of the contents of the present document.

European Commission

Directorate-General for Informatics
Directorate D — *Digital Public Services*
Unit D2— Interoperability Unit
Contact: Digit D.2 - Interoperability Unit
E-mail: isa2@ec.europa.eu
European Commission
B-1049 Brussels

The study was prepared for the European Commission by Wavestone Luxembourg S.A.

Legal Notice

More information on the European Union is available on the Internet (http://www.europa.eu).

Luxembourg: Publications Office of the European Union, 2019

Print	ISBN: 978-92-79-93664-7	DOI: 10.2799/410084	NO-04-18-780-EN-C
PDF	ISBN: 978-92-79-93663-0	DOI: 10.2799/041132	NO-04-18-780-EN-N

Printed in Belgium

PRINTED ON ELEMENTAL CHLORINE-FREE BLEACHED PAPER (ECF)

PRINTED ON TOTALLY CHLORINE-FREE BLEACHED PAPER (TCF)

PRINTED ON RECYCLED PAPER

PRINTED ON PROCESS CHLORINE-FREE RECYCLED PAPER (PCF)

Table of Contents

Mariya Gabriel
European Commissioner for Digital Economy and Society

Foreword

For over a decade, the European Union and the Member States have been aiming to achieve a digital transformation within their public sectors. The stages of such transformation are firstly governments starting to digitise their existing services, then adopting Information and Communication Technologies (ICT), to becoming more open and using data in an efficient way, to finally, today, face the implementation of new technologies. This year, in this 10th anniversary of measuring eGovernment performance throughout the European Union and gathering factsheets that report the progress of all the Member States, it is an opportunity to compile the main achievements of public sector digital transformation and to renew our commitment to achieving digital governments in Europe. This report looks at the progress made by the Member States based on how digital strategies and legislation have evolved over time, assesses the current state of play including the main eGovernment actors and services, and describes the role of the European Commission in the digital transformation of the public sector.

Throughout the years, the European countries' public sector did not stand still. Eurostat has been collecting data on different Information Society and eGovernment indicators. These show a growth in activities related to the internet as well as people's electronic interaction with their governments. As an example, since 2009, the share of individuals using the internet for interacting with public authorities in Europe has risen by 15 percentage points on average.

Apart from developing on an individual level, European countries have also made efforts in order to coordinate, share best practices, and help each other advance. The European Commission and the presidencies of the Council of the European Union are also playing an important role. Examples of such cooperation are the ministerial declarations on eGovernment from Malmö and Tallinn, which also demonstrate the strong commitment and political will of the Member States in transforming their administrations using ICT. The role of interoperability as a powerful instrument to make electronic services more efficient has been supported by the ISA and ISA[2] programmes and the European Interoperability Framework gives specific guidance to the Member States on how to set up interoperable digital public services.

The legislative environment has become more open when it comes to ICT aspects. For instance, there is now a strong focus on new infrastructures that the public sector should put in place in order to support the digital transformation.

Governments also aim at making data more open, not least through implementing the Directive on the re-use of Public Sector Information. Furthermore, in order to better meet today's needs of data protection and online privacy, several countries have adopted strategies and supporting legislation to boost citizens' trust.

It is not the role of the Commission to impose major actions on digital transformation. Nonetheless, several important Regulations and Directives have been passed, as well as action plans which all Member States have signed up to follow. All of this certainly contributes to the future shape of digital administrations. The Single Digital Gateway as well as the eIDAS Regulation are two concrete examples that aim to fully transform public administration and create cross-border services as part of the Digital Single Market.

To unlock the benefits of digitisation for Governments, the European Commission continues to help Member States in achieving their goals towards more efficient public administrations. In this context, President Juncker's Commission also put cybersecurity high on the agenda.

This report does not rate Member States. It explains good examples and practices as well as existing shortcomings, acting as input for Member States when defining their next their priorities and cooperating cross-border in the EU and internationally. From 2021 to 2027, the new Digital Europe programme will ensure the digital transformation of public administrations and public services and their EU-wide interoperability.

Mariya Gabriel

European Commissioner for Digital Economy and Society

Executive Summary

2018 marks the 10th anniversary of the publication of the eGovernment factsheets. It provides a comprehensive review of Member States' accomplishments in terms of digitalisation of their public sector.

The eGovernment factsheets collate information regarding eGovernment strategies, legal frameworks, key actors managing public service delivery, technical infrastructures and services in one place for 34 countries[1]. This anniversary report highlights the progress made by the Members States in each of these areas. The European Commission's achievements during this period are also highlighted, starting from the first eGovernment Strategy in 2010, the Digital Agenda for Europe.

Ten years of eGovernment development in Europe

The anniversary report sheds light on the various national initiatives fostering eGovernment in the last decade throughout Europe and the different maturity levels of these among the countries analysed. Some countries caught up only at a later stage with the implementation of a national strategic plan towards eGovernment. As for legislation, nine countries stressed the adoption of ICT-friendly laws as one of their main achievements in the eGovernment domain in the past 10 years. With the growth of importance as well popularity of digital public services amongst citizens and businesses, eGovernment implementation necessitates the dedication of either a single responsible ministry/body or a high-level of cooperation throughout all levels of administration. Some countries focus more on the delivery of digital public services at the local level, making the digitalisation of smaller offices an important priority. Citizen- and business-focused public service provision is an ever-growing priority in all Member States, especially given the sophistication and quality of digital services provided by the private sector.

The role of the European Commission in the digitalisation of the public sector

The European Commission has, for many years, encouraged the development of eGovernment across the EU. The requisite political will has been expressed through many political communications and ministerial declarations. These provide guidance and voluntary measures to foster the development of digital government in addition to the adopted legislation in specific domains, such as the eInvoicing Directive[2], the PSI (Public Sector Information) Directive[3], and eIDAS[4]. Various funding programmes such as CEF are available for public administrations to benefit from. ISA, now ISA[2], is a programme that funds projects on interoperability and produces interoperable solutions for public administrations across the European Union. H2020[5], ESIF[6], and SRSP[7] offer additional opportunities throughout Europe to all public sector institutions in the process of digitalising their organisations. The European Commission

1 EU28, EFTA, The Republic of North Macedonia, Turkey

2 Directive 2014/55/EU of the European Parliament and of the Council of 16 April 2014 on electronic invoicing in public procurement.

3 Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending Directive 2003/98/EC on the re-use of public sector information.

4 Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC

5 https://ec.europa.eu/programmes/horizon2020/en

6 European Structural and Investment Funds. More information: https://ec.europa.eu/eip/ageing/funding/ESIF_en

7 Structural Reform Support Programme. More information: https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/structural-reform-support-programme-srsp_en

and its various DGs offer a platform for all countries to exchange best practices in addition to encouraging further development of eGovernment.

The way forward

The Digital Single Market strategy has established a regulatory framework for all Member States of the European Union. It aims to ensure access to online activities and harmonise the four freedoms[8]. The upcoming Digital Europe Programme[9] under the 2021-2027 Multiannual Financial Framework is ambitious towards reinforcing Europe's digital capacities in various domains: high-performance computing, artificial intelligence, interoperability, cybersecurity and digital skills. Citizens and businesses alike will benefit from the Programme.

8 The four freedoms are the free movement of goods, persons, services and capital within the EU. These are cornerstones of the Single Market and the Euro.

9 COM/2018/434 final - 2018/0227, Proposal for a Regulation of the European Parliament and of the Council establishing the Digital Europe programme for the period 2021-2027

Introduction

With the rapidly changing technological environment and increasing expectations from citizens and businesses, modernisation of public administration is becoming an increasing priority across Europe. In fact, public sector modernisation has been at the core of European reforms since the last decade. The European Commission recognised the importance of digital transformation of the state as early as 2006, with the adoption of the i2010 eGovernment Action Plan, which set out actions to "make public services more efficient and more modern and to target the needs of the general population more precisely".[10] The progress of European public administrations in implementing eGovernment and interoperability has been closely monitored by the European Commission since 2008 in the form of yearly eGovernment factsheets, produced under the National Interoperability Framework Observatory of the ISA[2] programme. Over the past 10 years the eGovernment factsheets have shed light on the main modernisation of public administration reforms in Europe by detailing national changes in eGovernment strategies, legal frameworks, development of eGovernment infrastructure, delivery of digital public services to citizens and businesses, and also listing the main actors responsible for eGovernment at national level.

Given that this year marks the 10th anniversary of the eGovernment factsheets, the European Commission is putting together a special eGovernment factsheet 10 year anniversary report, which will shed light on the main eGovernment and interoperability reforms that took place in the 34 countries monitored by the eGovernment factsheets – the EU Member States, EFTA countries and other associated countries to the ISA and ISA[2] programmes in the past 10 years. Whilst the scope of the factsheets varied over the years and the number of monitored counties grew, this report will take a closer look at what sort of eGovernment and interoperability reforms – starting with policy framing and ending with its implementation, the European public administrations have implemented in the last decade. To compile the report, in addition to gathering data from the factsheets, we also reached out to the Member States and collected from them the main eGovernment achievements in their country in the last 10 years. Within this report, some space will also be dedicated to summarising the main reforms that took place across Europe in 2018. The report will also highlight the role that the European Commission played in providing guidance and setting priorities for the EU Member States in this domain. Finally, given the fact that the European Commission has proposed a new Multi-Annual Financial Framework, which would make available new funding and technical support for digital transformation of the public sector, this report will also provide some insights into the expected future developments in this domain. Overall, the report is meant as a celebration of the significant progress made by the European public administrations in the past 10 years in modernising their processes and improving their interactions with citizens and businesses and with each other.

The eGovernment factsheet 10 year anniversary report contains the following chapters:
Chapter 1 – Ten years of eGovernment development in Europe;
Chapter 2 – State of play of digital transformation of public administration in Europe;
Chapter 3 – The role of the European Commission in the digital transformation;
Chapter 4 – The way forward.

10 COM(2006) 173 final. Communication from the Commission, of 25 April 2006, i2010 eGovernment Action Plan - Accelerating eGovernment in Europe for the Benefit of All.

01

Ten years of eGovernment development in Europe

1. Ten years of eGovernment development in Europe

Public administrations across Europe have been undergoing significant reforms in the domain of eGovernment and interoperability in the past 10 years. The eGovernment factsheets, collecting inputs from designated country representatives, shed light on the main developments across European public administrations since 2008. The purpose of this chapter is to present the main developments in the domain of eGovernment and interoperability in the European public administrations, along the process of policy making – starting with policy formulation and ending with policy implementation. This section also highlights the main eGovernment and interoperability milestones achieved by each country in the past 10 years, as specified by the country representatives.

Over the 10 years from 2008-2018, different European countries adopted political communications such as strategies, action plans or roadmaps to digitise their public services and promote interoperability and the overall functioning of public administrations. This should be seen in the first stage of the policy cycle concerning the design of new public interventions.

Most adopted digital government strategies and action plans need a supporting legislative framework to be implemented. Hence, the adoption of new laws or amendment of existing ones is the second phase of the digital government policy cycle. Over the course of the past 10 years, all European public administrations have adopted laws on the delivery of digital public service, the implementation of digital infrastructures (such as eID, eDelivery, among others) and the digitisation of their public procurement practices, among several others.

Finally, with the political communications and legal frameworks in place, governments can begin to implement eGovernment in their country. Whilst each European public administration has its own pace of reform, arising from the different composition and history of the public administration in the country, several main trends in the implementation of eGovernment can be identified. Among them, the creation of new public sector entities responsible for eGovernment policy coordination, monitoring, implementation and support, deployment of eGovernment infrastructure, digital public service delivery through eGovernment portals, publication of open data, and investment in digital skills.

1.1. Adoption of digital strategies to modernise the administrations across Europe

'Digital Strategy' refers to the design and implementation of eGovernment strategies, roadmaps or action plans needed to modernise public administrations at different levels that respond to the evolving societal needs and technological trends. Digital strategies can be all-encompassing, include multiple principles and goals related to modernisation of public administration in the country, or sector specific, such as strengthening cyber security. The analysis of European countries' adopted strategies since 2008 reveals shifting priorities; from focusing solely on the delivery of digital public services (eGovernment) and the adoption of the right technologies and business processes, to supporting the digitisation of all sectors of the state (modernisation of public administration) more broadly.

Over the years, with the changing technological landscape and the changing role of government in the society, strategies focusing on new domains were adopted. European public administrations increasingly began adopting strategies on new technologies, such as G-Cloud in Belgium's national programme; cybersecurity, with Estonia adopting already a third strategy in this domain; and open data, with a majority of analysed countries participating to the Open Government Partnership[11] and others adopting strategies of their own accord.

Overall, when collecting feedback from eGovernment national representatives, a total of seven European countries (Switzerland, Sweden, Poland, Italy, Ireland, Germany, and Estonia) listed the adoption of an eGovernment strategy as one of their main achievements of the last 10 years in the domain of eGovernment.

Adoption of the first eGovernment strategy in Switzerland in 2007

Public administrations across Europe realised the need to foster eGovernment as early as in 2007. In Switzerland, the Federal Council adopted the first eGovernment Strategy Switzerland, with which the Confederation, cantons and communes began their eGovernment cooperation in 2007. Under the strategy, a total of 59 prioritised projects were carried out in Switzerland by 2015. Swiss authorities also established an electronic channel for business transactions between the authorities and the public and businesses. In 2015, the eGovernment strategy was to better reflect the changing eGovernment priorities and technological developments.

Italy's Three-Year Plan to digitise the state

In 2016 the Italian government adopted the Three-Year Plan[12], which guides the digital transformation of the Italian Public Administration in the context of the Italian Strategy for Digital Growth[13]. The Plan details the major milestones and steps that different institutions of the Italian government should take by 2019, necessary to accelerate the pace of the digital transformation in Italy. The Plan also provides information on tools that will facilitate the streamlining of bureaucratic procedures, greater transparency in administrative processes, greater efficiency in the provision of public services and, not least, the rationalisation of IT spending.

11 https://www.opengovpartnership.org/participants

12 http://pianotriennale-ict.readthedocs.io/en/latest/

13 http://www.agid.gov.it/sites/default/files/documenti_indirizzo/strategia_crescita_digitale_ver_def_21062016.pdf

The Plan proposes a systematic, distributed and shared model of management and use of the most innovative digital technologies, characterised by an agile and evolutionary management style, based on clear governance of the various levels of public administration. The synergy and balance between the three directives (innovative technologies, agile management style and clear and effective model of governance) ensures the country's system more effectively uses the benefits of new technologies and provides citizens with an advantage in terms of ease of access and improvement of existing digital services.

Table 1 below presents the main strategies in the domain of digital government adopted by the studied countries since 2008. It is important to note, that whilst the eGovernment factsheets themselves detail more strategies per country, the list below focuses strictly on the strategies that are fully focused on the strengthening of eGovernment in the country and modernisation of public administration.

Table 1: eGovernment strategies across Europe since 2008

Country	Year Adopted	Title
Austria	2016	Digital Roadmap
	2016	eGovernment Strategy
	2009	eGovernment Vision 2020
Belgium	2015	Digital Belgium (2015- ongoing)
	2009	Federal eGovernment Strategy 2009 - present
Bulgaria	2014	Strategy for eGovernance development in the Republic of Bulgaria 2014-2020
	2011	Common strategy for eGovernence development in Bulgaria 2011 - 2015
	2010	The Concept of eGovernment in Bulgaria 2010 - 2015
Croatia	2017	eCroatia 2020 Action Plan
	2017	The eCroatia 2020 Strategy
	2015	Croatian Strategy for the Development of Public Administration 2015-2020
	2011	eGovernment development goals in State Administration
	2009	Strategy for the Development of eGovernment
Cyprus	2017	National Interoperability Framework
	2014	eGovernment Strategy 2014-2020
	2012	Digital Strategy for Cyprus 2012-2020
Czech Republic	2017	Society 4.0 Action Plan
	2016	Strategy for ICT Services Development in Public Administration
	2011	Digital Czech Republic
	2008	Strategy for the Development of Information Society Services for the period 2008 - 2012
Denmark	2017	Strategy for ICT management
	2016	Public Sector Digitisation Strategy: 'A Strong and more Secure Digital Denmark'
	2016	Common Municipal Digitisation Strategy 2016-2020 'Local and Digital - a Coherent Denmark'
	2011	The Joint Public Digital Strategy 2011 - 2015

Country	Year Adopted	Title
Estonia	2014	Estonian Information Society Strategy 2014-2020
	2008	Estonian Information Society Strategy 2008 - 2013
	2008	Information Society Strategy for local governments 2008 - 2011
Finland	2018	Digital Finland Framework
	2017	Roadmap for digital public services
	2013	Public Sector ICT Strategy
	2009	The Action Programme on eServices and eDemocracy
France	2018	DCANT 2018-2020 - Concerted Development of the Territorial Digital Administration
	2017	Action Publique 2022
	2015	Digital Strategy of the Government
	2013	Government Roadmap for the Digital Economy
	2008	Development Plan for the Digital Economy 'Digital France 2012'
The Republic of North Macedonia	2016	Short-term national ICT strategy 2016-2017
	2010	National Strategy for eGovernment 2010 - 2012
Germany	2014	Digital Agenda 2014-2017
	2010	The national eGovernment Strategy
Greece	2016	National Digital Strategy 2016-2021
	2014	Strategy for eGovernment 2014-2020
	2014	Action plan for eGovernment 2014-2020
	2011	eGovernment Roadmap
Hungary	2014	National Infocommunication Strategy 2014-2020
	2008	E-Public Administration 2010 Strategy
Iceland	2016	Iceland 2020
	2013	ePower Expansion - create, connect, participate.
	2008	Iceland the eNation
Ireland	2017	eGovernment strategy 2017-2020
	2015	Public Service ICT Strategy
	2012	eGovernment strategy 2012 - 2015: supporting public service reform
	2010	eGovernment Strategy
Italy	2017	Three Year Plan for the Digital Transformation of Public Administration
	2014	Italian Digital Agenda 2020
	2008	Strategy Plan for Innovation
Latvia	2014	The Information Society Development Guidelines for 2014-2020
	2011	eGovernment Development Plan
Liechtenstein	2008	IT and eGovernment Strategy 2008-2011
Lithuania	2014	Information Society Development Programme 2014-2020: Digital Agenda for Lithuania
	2011	Information Society Development Programme 2011 - 2019

Country	Year Adopted	Title
Luxembourg	2016	Einfach Letzebuerg
	2014	Digital Letzebuerg
	2010	Master Plan for the Implementation of Information Technology within the State
Malta	2017	Government mServices Strategy 2017-2018
	2014	Digital Malta 2014-2020
	2008	National ICT Strategy for Malta - Malta: the Smart Island
Netherlands	2016	Digital Agenda
	2016	Central Government iStrategy
	2011	Digital Agenda 2011 - 2015
	2011	ICT Strategy
	2008	ICT Agenda
Norway	2017	Difi strategy 2017 - 2020
	2015	Digital Agenda for Norway 2015-2016
	2012	Digitising Public Sector Service Programme
	2012	Difi's strategy 2012 - 2015
	2009	Difi's strategy 2009 - 2012
Poland	2016	National Integrated Informatisation Programme
	2008	Strategy for the Development of Information Society in Poland until 2013
Portugal	2012	Digital Agenda
	2017	ICT Strategy 2020
	2017	Simplex+ 2017 Programme
	2012	Portugal Digital Agenda
	2010	Simplex '10
Romania	2016	National Interoperability Framework
	2014	National Strategy on Digital Agenda for Romania 2014-2020
	2009	eRomania
Slovakia	2015	National Concept of eGovernment 2015-2020
	2014	Strategic Document for Digital Growth and Next Generation Access Infrastructure (2014-2020)
	2008	eGovernment Strategy of the Slovak Republic
Slovenia	2016	Information Society Development Strategy to 2020
	2009	Strategy on IT and electronic services development and connection of official records
	2016	Strategy for Digital Slovenia 2020
Spain	2015	Digital Transformation Plan for the General Administration and Public Agencies
	2012	The Strategic Plan for Improving Public Service and Administration (MEJORA Plan)
Sweden	2017	A Sustainable Digitalised Sweden - A digitalisation strategy
	2015	Programme for the digital revival of the public sector: Digital First (2014-2018)

Country	Year Adopted	Title
Sweden	2012	Putting the citizen at the centre
	2009	"Strategy on the work of the Public Agencies in the field of eGovernment"
Switzerland	2017	eGovernment strategy action plan
	2016	eGovernment Strategy Switzerland
	2016	Federal Administrations' ICT Strategy 2016 - 2019
	2007	eGovernment Strategy 2007 - 2015
	2007	Federal Administrations' ICT Strategy 2007 - 2011
Turkey	2016	2016 - 2019 eGovernment Strategy and Action Plan
	2015	2015 - 2018 Information Society Strategy and Action Plan of Turkey
UK	2018	Digital Charter
	2017	UK Digital Strategy 2017
	2014	Government digital inclusion Strategy
	2012	Government Digital Stategy
	2011	Government ICT Strategy

Source: analysis of the main strategies presented in the eGovernment Strategy section eGovernment factsheets performed by Wavestone.
Note: for the sake of clarity only strategies strictly related to digital government themes were included in the summary figure.

1.2. ICT in law making

Once the main policy priorities and objectives have been laid out in strategic documents, the necessary legal acts are adopted, in order to ensure that there is legislative support for the foreseen reforms.

ICT in law making refers to the drafting and revision of legislations in the Information Communication Technology (ICT) domain. When it comes to introducing basic legal texts on eGovernment and interoperability related legal issues, those can either be the consequence of a transposition by Member States of EU Directives into national law for application or the alignment of national laws with EU Regulations, or initiated on the country's own accord. Overall, nine countries (**Denmark, Bulgaria, Croatia, Czech Republic, Finland, Slovakia, Hungary, Spain, Italy**) indicated the adoption of specific legislation for fostering the implementation of eGovernment and interoperability as one of their main achievements in the domain of eGovernment in the last decade.

It is important to note that over the course of the past 10 years various legislative frameworks were deployed at national level to support and enable public administrations in their modernisation efforts. Some were broad eGovernment enabling acts (covering multiple areas of digital public service delivery and infrastructure deployment), such as the Electronic Governance Act of **Bulgaria**[14], or legislations focused on specific aspects of modernisation of the state, such as the law introducing mandatory digital communication for business and citizens with the public administrations in **Denmark**[15]. More specifically, over the past 10 years public administrations across Europe adopted legislation in the following domains.

14 https://www.mtitc.government.bg/archive/page.php?category=486&id=3634
15 https://en.digst.dk/policy-and-strategy/mandatory-digitisation/digital-post/

Provision of digital public services – over the past 10 years most European public administrations have adopted on electronic public services that served as the basis for achieving eGovernment in the country. The laws normally defined eGovernment and recognised the rights of the citizens and businesses to access online public services online. The Digital Administration Code (CAD)[16] adopted in 2005 and amended several times in the past 10 years was the first law related to eGovernment in **Italy**. The law was amended in order to ensure that the legislation could keep up with the changing technological landscape and citizens' expectations of their administrations. Among other countries, **Slovakia** adopted an eGovernment Act, which laid the provisions for electronic communication of citizens and businesses with their government in 2013 and **Hungary** adopted a new eGovernment legal framework in 2015. It is important to note that all analysed countries regularly amend their laws to ensure that they reflect the realities of the day.

16 https://cad.readthedocs.io/it/v2017-12-13/

Reform of the legal framework as an enabler for digital transformation of the administration in Spain

A significant advancement of eGovernment in any country is only possible with the reform of the corresponding legislative framework. In Spain, Law 11/2007[17] on Citizens' Electronic Access to Public Services entered into force on 24 June 2007. This law recognised citizens' right to access public services through electronic means. In compliance with the law, public administration in Spain had to develop the adequate eGovernment capabilities, including the National Interoperability Framework (ENI), the National Security Framework (ENS) and accompanying technical instructions, along with the development of reusable solutions and common infrastructures.

On 2 October 2016 two new laws entered into force in Spain, law 39/2015 on the Common Administrative Procedure of Public Administrations[18] and law 40/2015 on the Legal Regime of the Public Sector[19], replacing the 11/2007 law. The two new laws take a novel approach to the provision of digital public services and focus on an all-encompassing digital transformation public services, reinforcing the importance of common services and solutions as enablers of administrative efficiency and seamless inter-administrative collaboration.

Access to base registries – base registries can be considered as one of the main building blocks of an interoperable public administration and they refer to a trusted and authentic source of basic information on citizens and businesses in the country under the control of a public administration or organisation appointed by government. Interconnection of base registries is a fundamental step to realise the implementation of the Once Only Principle Policy[20] in Europe, with the ultimate aim to reduce the administrative burden on citizens and businesses. Whilst there is currently only an EU Directive on the interconnection of business registries[21] and the Business Register Interconnection System[22], several Member States have adopted national legislations laying down standards, definitions and owners of different registries at the national level. In 2009 **Czech Republic** adopted an Act on Basic Registers in 2009, which was amended in 2015.

Act on Basic Registers in the Czech Republic

In 2009 the Czech Republic adopted an Act on Basic Registers in 2009 (No 111/2009)[23], which created the Office for the Administration of Basic Registers under the Ministry of the Interior, which since then has been tasked with operating the system of basic registers. The Act represented an important first step toward the establishment of effective online national registers, which contribute to the reduction of the administrative burden for business and citizens.

17 http://www.boe.es/buscar/doc.php?id=BOE-A-2007-12352

18 http://www.boe.es/buscar/doc.php?id=BOE-A-2015-10565

19 http://www.boe.es/buscar/doc.php?id=BOE-A-2015-10566

20 http://toop.eu/once-only

21 L 156/1 Directive 2012/17/EU of the European Parliament and of the Council of 13 June 2012 amending Council Directive 89/666/EEC of the European Parliament and of the Council as regards the interconnection of central, commercial and companies registers, Brussels, 16.6.2012.

22 https://ec.europa.eu/cefdigital/wiki/pages/viewpage.action?pageId=46992657

23 http://www.randls.com/Renderers/ShowMedia.ashx?id=f542e5d6-4781-4a1b-8f7c-395b3d53c7b9

Countries like **Croatia** and **Slovakia** adopted laws creating specific registries, for coordination of projects on the state information infrastructure[24] and basic code list of public administration agendas[25], respectively.

Deployment of eGovernment infrastructure – eGovernment infrastructure means introducing eInvoicing, eDelivery, eID, and other key building blocks as well as interoperability platforms, as the key enablers for the implementation of eGovernment in the country. However, it is crucial that countries adopt legal frameworks detailing the purposes, standards and procedures associated with the development with new infrastructure. **Croatia**, for example has adopted an all-encompassing State Information Infrastructure Act.

The adoption of the State Information Infrastructure Act in Croatia

In 2014 the Croatian government adopted the Law on the State Information [26]. The Act establishes a central government portal system as a single point of contact between citizens & businesses, and the government in the virtual world. The Act also introduces also the communication of public sector institutions with citizens via a state issued mailbox, a national identification and authentication system, a system of basic and public registers, a public register for the coordination of projects established for State Information Infrastructure (ProDII[27]) and a meta-register with all information needed for their interconnection thus ensuring preconditions for the 'Paperless government' project. The Law also defines the body responsible for the development and implementation of ICT in the public sector and instruments for coordination. The National Information Infrastructure Council was adopted by the government following the adopted decision (OG 72/15) with the task to monitor and coordinate the development of the national information infrastructure and report to the government.

Germany on the other hand, has adopted a more specific legal decision, which laid down basis for the launch of a common virtual platform for all eGovernment services in the country[28].

Decision to launch a Single eGovernment portal in Germany

On 14 December 2016, the Cabinet adopted the decision to launch a virtual platform for all eGovernment services[29]. Every administrative platform, be it at local, state or federal level, will provide full access to all administrative public services offered online. The plan of the government is to provide, within five years, as many federal, state and local administrative services as possible online, and to make sure that citizens and businesses can access such services directly, easily and securely with only a few clicks. Ultimately, the administrative platforms of all federal, state and local authorities will be linked in a network or a virtual platform. To achieve this goal, the Basic Law of the Federal Republic of Germany[30] was also amended (Art. 91C (5)) within the context of reorganising the financial relations between the Federal Government and the federal states.

24 http://narodne-novine.nn.hr/clanci/sluzbeni/2014_07_92_1840.html
25 http://www.informatizacia.sk/ext_dok-vynos_a_prilohy_2010-312/7431c
26 https://narodne-novine.nn.hr/clanci/sluzbeni/2014_07_92_1840.html
27 http://prodii.uprava.hr/
28 http://www.bmi.bund.de/SharedDocs/Pressemitteilungen/DE/2016/12/buergerportal.html?nn=3315468
29 http://www.bmi.bund.de/SharedDocs/Pressemitteilungen/DE/2016/12/buergerportal.html?nn=3315468
30 https://www.btg-bestellservice.de/pdf/80201000.pdf

Introduction of mandatory eInvoicing in Slovenia

With the adoption of the Act on the Provision of Payment Services to budget Users (ZOPSPU-A)[31] by the Slovenian government, it became mandatory for public sector institutions to receive invoices in electronic format for any goods and services purchased. The use of eInvoicing in public procurement became mandatory in Slovenia on 1 January 2015. The Public Payments Administration[32] serves as a single entry and exit point for the exchange of eInvoices between administrations and between public administration and external entities.

Furthermore, because there is a large need for a wide range of supporting infrastructure for eGovernment, a majority of countries have individual laws related to deployment of eID and eSignature, the usage of eDelivery for document and data exchange or the introduction of eProcurement systems as a tool for efficiency and transparency. It is also important to note that, in the case of eProcurement and eID, EU Member States are mandated to adopt legislations in these domains through the transposition of the EU Directive on Public Procurement[33] and by ensuring compliance with the eIDAS Regulation[34]. **Slovenia**, for example, introduced the mandatory use of eInvoicing in public procurement with the adoption of the Act on the Provision of Payment Services to budget users[35]. In a similar vein, the government of **Denmark** introduced a law, which makes digital communication with public authorities mandatory.

Introduction of mandatory digital communication in Denmark

With the adoption of the Common Public Digitisation Strategy Denmark initiated a four-step introduction of mandatory digital self-service and communication with public authorities[36]. By 1 November 2013 all businesses were obliged by law to receive official written communication from the government in a digital only way through a government-provided digital letter box (Digital Post); Likewise, citizens were also obliged by law to receive official communication from the government only digitally through the Digital Post[37].

Open Data – since all Member States were required to transpose the Directive on the Re-use of Public Sector Information[38], all have a corresponding legislation at national level regulating open data. **Sweden** adopted a law on the Re-use of Public Administration Documents back in 2010. **Turkey**, **the Republic of North Macedonia** and **EFTA** countries have also adopted legal acts on open public data.

31 http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO6565

32 https://www.ujp.gov.si/dokumenti/dokument.asp?id=295

33 L 94/65 Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC Text with EEA relevance, Brussels 29.3.2014

34 Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC.

35 http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO6565

36 https://en.digst.dk/policy-and-strategy/mandatory-digitisation/self-service/

37 https://en.digst.dk/policy-and-strategy/mandatory-digitisation/digital-post/

38 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32013L0037 - Directive 2013/37/EU of the European Parliament and of the Council of 16 June 2013 amending Directive 2003/98/EC on the re-use of public sector information

Law on the Re-use of Public Administration Documents in Sweden

Recognising the importance of creating a data economy and understanding the potential value of open public data, Swedish government adopted a law on the Re-use of Public Administration documents in 2010. The law also implements the European Directive on the Reuse of Public Sector information[39].

The new law specifically purports to promote the development of an information market by facilitating re-use by individuals of documents supplied by the authorities on conditions that cannot be used to restrict competition.

Cybersecurity – while most European public administrations have adopted strategies related to cybersecurity, several went further and adopted legislations to support network security in their country. In countries like **Romania**, the legal framework was adopted in order to approve the Romania strategy and the action plan for cyber security. In **Estonia**, on the other hand, the adopted act establishes a system of security measures for information systems used for processing state and local government owned data. **Spain**'s law[40] establishes a mechanism and conditions for gathering data from public institutions concerning the status of their security. The act allows for the monitoring of the security of the systems included in the scope of the national Security Framework.

Cybersecurity legislation in Estonia

Estonia has been strengthening the security of its information systems for at least a decade. In 2008 the Estonian government adopted a law on System of Security Measures for Information Systems[41]. The Act establishes a system of security measures for information systems used for the purpose of processing the data contained in state and local government databases and for the information assets contained within them. The established system details the procedure for the specification of security measures and the description off organisational, physical and IT security measures to protect data.

1.3. Implementation of initiatives and actions to modernise and digitise the administrations

The final stage in the policy cycle is the implementation of actions or measures, which takes place after the adoption of the necessary legislative and policy initiatives. Some measures, of course, can be implemented without introducing any legislation. The milestones related to policy implementation achieved by the 34 European countries in the past 10 years fall predominantly under different initiatives from the creation of separate administrative structures, to the strengthening of digital capacity.

39 https://www.government.se/about-the-website/psi-data/

40 http://www.boe.es/diario_boe/txt.php?id=BOE-A-2016-10108

41 https://www.riigiteataja.ee/akt/13125331?leiaKehtiv

1.3.1. Creation of new public sector entities responsible of eGovernment and interoperability policies

In order to implement the foreseen eGovernment and interoperability reforms more efficiently, public administrations often create separate administrative authorities. We refer here to new public sector entities, either agencies, departments, or units within a ministry, responsible for developing, coordinating and implementing eGovernment and interoperability policies in the country. These bodies help make the implementation of reforms in the country more efficient and avoid the duplication of effort, while improving coordination among other actors working with eGovernment. Both **Bulgaria** and **Poland**, for example see the establishment of dedicated eGovernment bodies as one of their main eGovernment achievements in the past 10 years.

Creation of the State eGovernment Agency in Bulgaria

By amending its Electronic Governance Act, in 2016, a State eGovernment Agency[42] was established in Bulgaria as a separate administrative authority solely responsible for the implementation of eGovernment in the country.

The Agency has been operational since 2016, and is responsible for the implementation of government's official policy in the following fields: electronic certification services, electronic identification, network and information security, space information infrastructure, and providing public sector information in a machine readable format. The Agency is also responsible for maintaining the central registers, the government cloud and the communication network of the State Administration.

Creation of the Ministry of Digital Affairs in Poland

Understanding that in order to successfully implement the necessary reforms to achieve eGovernment and interoperability in Poland, it is important to coordinate and streamline efforts, the Polish government created a new Ministry of Digital Affairs[43]. Established in 2015, the ministry is responsible for coordinating the eGovernment initiatives in Poland. The mission of the ministry is to create a digital boost for the development of Poland. The main tasks of the new ministry are to develop broadband infrastructure, support the creation of web content and eServices and promote digital competences among citizens. Digitisation is also key to modern administration.

1.3.2. Deployment of eGovernment infrastructure

The deployment of eGovernment infrastructure refers to systems and technologies, in other words, building blocks that underpin the development and delivery of digital public services and the digitisation of public administrations more broadly. The deployment of infrastructure appears to have been of upmost importance to European public administration in the past 10 years with most countries working to adopt the basic infrastructure building blocks, which are summarised in more detail below.

42 https://e-gov.bg/en/about_us

43 http://archiwum.mc.gov.pl/en/the-areas-of-our-activity

eID (including smartcards, mobile and log-in) refers to the development and introduction of a unique electronic identification for businesses and citizens allowing them to identify themselves online and to securely access digital public services. The introduction of the eIDs in EU Member States is mandated by the eIDAS Regulation[44]. Member States had until 29 September 2018 to comply with the provisions of the Regulation. In this regard, all European public administrations have introduced or a working to introduce a single eID for citizens and businesses. A total of seven European countries mentioned the introduction of a national eID among their main digital transformation achievements in the past 10 years: **Belgium, Denmark, Hungary, Ireland, Luxembourg, Norway, Portugal and Slovakia.**

The Public Services Card in Ireland

The Public Services Card (PSC) and its online counterpart MyGovID[45], is the Irish government's standard personal identity verification scheme, and it is at the core of allow citizens to access digital public services in a secure and efficient manner.

The PSC enables Ireland to have a single approach to online identity across the public sector, provide more and better services online, create a user centric digital government, and ensure that the Irish government is aligned with European initiatives such as the Digital Single Market and the European eGovernment Action Plan 2016 - 2020.

By the end of 2017 over 3 million PSC cards have been issued and the rollout of the PSC is continuing. MyGovID can be used for online access to Revenue myAccount services, myWelfare services; and access to the Jobs Ireland service. Over the course of 2018, access to more public services was underpinned by the PSC and MyGovID.

eSignature refers to an electronic indication of a person's intent to agree to the content of a document or a set of data to which the signature relates. The use of eSignature allows for the full digitisation of business processes in public administrations, hence saving time and costs in printing, faxing, mailing, copying or filling in paper forms, which significantly enhances the security of the process.

eSignature was first regulated at European level through the Directive on a Community framework for electronic signature, dating back to 1999[46]. At the present moment, the adoption of eSignature by the Member States is regulated by the eIDAS Regulation with which Member States have to comply with by 29 September 2018. In light of this, all Member States have introduced eSignatures as a way for the citizens and businesses to sign documents online. **Romania**, for example, by adopting the Emergency Ordinance no 41/2016[47] made it compulsory for public authorities to accept online documents signed with a qualified electronic signature.

---

44 Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC.

45 www.psc.gov.ie

46 OJ L 13, Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures, Brussels, 19.01.2000. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31999L0093

47 http://legislatie.just.ro/Public/DetaliiDocument/179586

Electronic signature as a tool for facilitating digital interaction in Romania

With the passing of Government Emergency Ordinance no. 41/2016[48], the Romanian government made it compulsory for public institutions to accept documents issued by public/private entities electronically, having a qualified or advanced electronic signature. The use a secure electronic signature will help to facilitate the interaction between citizens and businesses and their government. It will also significantly reduce the number of paper forms needed to submit by citizens and business when going through different government procedures.

According to CEF digital, there are currently five qualified service providers[49] in Romania who issue qualified certificates for electronic signatures or seals.

eInvoicing refers to the exchange of an electronic invoice document between a supplier and a buyer. An electronic invoice is issued, transmitted and received in a structured data format, which allows for its automatic and electronic processing. A structured electronic invoice contains data from the supplier in a machine-readable format, which can be automatically imported into the buyer's account system.

The introduction of eInvoicing across Europe, which is regulated by Directive 2014/55/EU on electronic Invoicing in public procurement[50], helps to significantly simplify public procurement procedures and improve transparency. Member States had to transpose the Directive into national legislation by 27 November 2018. **Slovenia** considers the introduction of mandatory use of electronic invoices for any goods and services to be one of its main achievements in the domain of eGovernment in the past 10 years[51]. Connecting Europe Facility continuously monitors the implementation of eInvoicing in Europe and the individual country results can be easily accessed online[52]. According to CEF, **Finland** is aiming to ensure that 100% of its invoices used in public procurement are issued electronically.

Towards 100% eInvoicing Finland

Whilst there is no legislation on eInvoicing in Europe, the use of eInvoicing in public procurement has been mandatory in Finland since 2010 through the Finnish government programme[53]. By introducing mandatory eInvoicing as early as 2010, today over 95% of Finland's invoices for public procurement are electronic[54].

In its efforts to achieve 100% electronic invoicing in public procurement the Finnish government plans to automate the process of eInvoicing through the use of AI and robotics. Simple AI could quickly scan the eInvoices to find the agreement number and the sum of the invoice. This would radically speed up the processing of eInvoices.

48 http://legislatie.just.ro/Public/DetaliiDocument/179586

49 https://webgate.ec.europa.eu/tl-browser/#/tl/RO

50 L 1331 Directive 2014/5/EU of the European Parliament and of the Council of on electronic invoicing in public procurement. Brussels, 6.5.2014

51 The use of electronic invoices is mandated by the Act on the Provision of Payment Services to Budget Users (ZOPSPU-A) in Slovenia.

52 https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eInvoicing+in+each+member+state

53 http://www.statetreasury.fi/en-us/Agencies_and_institutions/Services_supporting_financial_administration_and_management/Processes_of_government_financial_administration/From_procurement_to_payment/EInvoicing

54 http://www.statetreasury.fi/en-US/Agencies_and_institutions/Services_supporting_financial_administration_and_management/Processes_of_government_financial_administration/From_procurement_to_payment/Electronic_Invoicing/Electronic_invoicing_statistics/Einvoicing_statistics_for_the_Finnish_Go(59109)

Finland believes that in addition to significantly improving the efficiency of the invoicing process, eInvoices also have significant climate benefits by the reducing the amount of paper needed to produce them, and hence reducing the CO^2 footprint[55].

eProcurement refers to the digitisation of public procurement procedures. This involves publishing contract notices online (eNotification), publishing all documents for a call for tenders online (eAccess to tender documents), suppliers submitting offers to public buyers/contracting authorities electronically (eSubmission)[56]. eProcurement contributes to the broader public procurement reforms taking place in European public administrations as part of the efforts to simplify procurement procedures, increase their transparency and efficiency. At the European level the implementation of eProcurement is mandated by the Directive 2014/24/EU on public procurement[57]. Member States had to transpose the Directive into national law by 18 April 2016. The **Greek** government considers the establishment of its National Electronic Public Procurement System to be one of its main digital transformation achievements of the past 10 years.

eProcurement as a tool for efficiency and transparency in Greece

In efforts to simplify its inherently complex public procurement system, improve transparency through online reporting and efficiency through time savings, the Greek government established the National Electronic Public Procurement System (NEPPS)[58]. The system implements tendering procedures in accordance with the principles of transparency and equal treatment and ensures compliance with the rules and principles of European and national legislation on public procurement. The system offers a wide range of services to awarding authorities and bidders, including eNotification, eAccess, and eSubmission.

eDelivery refers to a network of nodes developed for digital communications. It is based on a distributed model where every participant becomes a node using standard transport protocols and security policies. eDelivery, by relying on standards, helps public administrations exchange electronic data and documents with other administrations, businesses and citizens in an interoperable, reliable and trusted way. Most European countries have adopted eDelivery solutions to facilitate the exchange of data and documents electronically, as this is an important step in achieving interoperability and developing eGovernment. In **Portugal**, for example the Public Administration Interoperability Platform (iAP)[59], developed in 2007, allows for a secure exchange of information among public administrations, businesses and citizens.

Public Administration Interoperability Platform in Portugal (iAP)

Available since 2007, the iAP allows a secure exchange of information between public organisations and between them and the private sector, promoting the dematerialisation of public services through the definition of standards that allow technical and semantic interoperability between different information systems. The iAP is

55 https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/2018/06/13/Finland+is+using+AI+in+attempt+to+achieve+one-hundred+per+cent+eInvoicing

56 Public Procurement Reform (Factsheet No. 4: e-Procurement). (n.d.). European Commission. Retrieved from: https://ec.europa.eu/docsroom/documents/15441/attachments/1/translations/en/renditions/native.

57 Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC, Brussels 28.3.2014

58 www.eprocurement.gov.gr/

59 http://www.iap.gov.pt/

by law the preferred way to exchange information in the Public Administration and supports the implementation of the once-only principle, by which public services shouldn't request to citizens information they already have.

This shared tool for interconnection between different systems enables the provision of digital public services, such as the Medical ePrescriptions (mandatory and fully electronic since 2016), the Energy Social Fare, and Automatic Tax Declarations, which provides citizens with an income declaration pre-filled by the Tax Authority based on the data (income and expenses) it gathers from third parties (employers, businesses, banks, insurance companies, etc.) and from the personal elements declared by the taxpayer in the previous year.

Furthermore, **Belgium** considers the development of the government's Federated Service Bus as its one main eGovernment achievements of the past 10 years.

Federal Service of Bus – a tool for data exchange in Belgium

The Federal Service Bus[60] (FSB), established in 2006 by Fedict (now the Digital Transformation Office, BOSA), laid down the foundations of a service-oriented architecture in Belgium. The FSB can be seen as a data exchange platform in which multiple web-based services are joined.

The FSB offers several advantages to its users, by providing a general overview of the available FSB services and allows them to access the web services via a single point of contact. Hence, the FSB, by facilitating the exchange of information by public administrations and providing access to it all in one place, contributes to the implementation of the once only principle in Belgium.

Most of the European public administrations' eGovernment infrastructure initiatives mentioned above detail the implementation of a specific infrastructure building block as an example of a digital transformation achievement. However, both **Czech Republic** and

60 https://dt.bosa.be/en/gegevensuitwisseling


10:53
D and E Measurement
Inspection Machine
65%
15.05.0.697.5
Sector1
Sector2
CANCEL
CLEAR
ENTER
Asia
Europe
N America
Africa
Australia

Slovakia considers the adoption of crucial digital government infrastructure more broadly, as their main achievement of digital government transformation of the past 10 years.

The importance of eGovernment infrastructure in Czech Republic

The development and deployment of appropriate infrastructure at central and local level is a crucial aspect of developing eGovernment in the country.

In recognition of this, the Czech government has in the past 10 years introduced base registries providing public sector reference data source on natural and legal persons, territorial identification, addresses and real estates, as well as on rights and duties of public administration bodies, as defined by sectoral legislation.

Besides base registries, national eGovernment infrastructure include: a state guaranteed eDelivery solution called 'Data Boxes', which is mandatory for G2G and G2B interactions; a) a country-wide network of assisted 'Czech POINT' offices, which are also available at Czech embassies abroad; b) the public administration portal with links

to the eTax portal of the Czech Financial Administration; the ePortal of the Czech Social Security Administration; c) a secure national public administration network connected to the TESTA network of the European Commission making it possible for public administrations to use sectoral applications supporting various EU policy domains.

Adoption of the essential eGovernment building blocks in Slovakia

eGovernment has been systematically addressed in Slovakia since 2007, with the start of the biggest IT deployment in the public sector. The government, recognising the importance of having in place the basic building blocks set out to implement an entire package of new initiatives. It designed a unified approach to access to electronic services, which is now possible either online through the central public administration portal[61] or in person via the Integrated Point of Service. At the same time, reference data sources were created – basic registers of natural persons, legal persons and addresses.

Finally, as a basic key enabler new national identity card with a built-in electronic chip, was introduced to citizens as of 1 December 2013. The eID card has the role of a trustworthy medium to access more than 1,500 digital public services in Slovakia. It is also a secure token for storing the personal identity data of each citizen – thereby creating the citizen's electronic identity. The Slovak eID can also be used as a secure signature creation device for storing qualified certificates and creating qualified electronic signature.

1.3.3. Service provisioning through eGovernment portals

eGovernment portals (or platforms)[62] can be considered as the key enablers of eGovernment in the country, as they serve as a gateway between citizens and their public administration. Some portals also allow users to supply their own data. eGovernment portals offer services to citizen through a secure environment, that is underpinned by the main

61 slovensko.sk

62 eGovernment portals – refers to web tools through which public administrations reach out to citizens and business, providing data, information and public services.

infrastructure building blocks mentioned earlier – they allow for the secure exchange of documents and data, granting citizens access to online services through their eID and by signing any documents using eSignatures. In **Luxembourg** citizens can use privately issued LuxTrust products to sign onto the main government portal.

LuxTrust & eID unlocking digital public services for citizens in Luxembourg

MyGuichet.lu allows citizens to allow online public services, the data that the government has about them and also to check whether they have received any written communication from public authorities in Luxembourg. LuxTrust products[63] and the citizen eID are the two ways citizens can sign in to MyGuichet.lu and conduct any administrative procedures or submit documents online. Both the eID and a LuxTrust product ae equipped with a legal electronic signature certificate, which is legally equivalent to a manual signature and an authentication certification that can be used to connect easily to government and private online application.

Several authorities in Luxembourg can issue LuxTrust products that they can use to access digital public services.[64]

All European public administrations have developed portals to interact with their citizens and businesses. Whilst most public administrations have a one-stop shop type of portal, where both citizens and businesses can access all the necessary services, some public administrations, like **Croatia**, have separate portals for citizens, businesses and also a portal in the judiciary domain to improve the transparency of the judicial system. Given the importance of eGovernment portals in implementing eGovernment in the country, it is not surprising that all European public administrations have developed eGovernment portals in the past 10 years. Both **Lithuania** and **Malta** consider the creation of eGovernment portals among their main achievements in the domain of digital transformation of the public sector in the past 10 years.

Lithuania's State Information Resources Interoperability Platform – a one-stop shop for digital public services

Since 2008, Lithuania's citizens and businesses can access and interact with the public authorities through a single online platform, the State Information Resources Interoperability Platform (SIRIP)[65]. The platform consists of two parts – a central electronic service portal 'eGovernment gateway'[66] and the data exchange platform.

The platform offers a convenient and easy way to use services of the state and municipal institutions for residents, businesses and foreign nationals. It increases the transparency and efficiency of the state and municipal institutions, agencies and companies, while new electronic services reduce time and costs for design, provision and service receipt.

The platform allows its users not only to access public services online but to also pay for services in a safe environment by using different payment methods provided by third parties. The SIRIP portal contains nearly all public and administrative services in Lithuania. Services can be combined or complex, accessible to a user

63 https://www.luxtrust.lu/en/page/185
64 https://www.luxtrust.lu/en/simple/206
65 https://ivpk.lrv.lt/en/activities/sirip
66 https://www.epaslaugos.lt/portal/en

in one click. SIRIP currently unites 200 institutions and provides access to over 610 services. SIRIP is also useful to public administrations as it offers a collaborative development environment, where different public institutions can design online services.

eGovernment portals are the main medium through which citizens and businesses access digital public services provided by their public administrations. The provision of digital public services to citizens and business is among the main pillars of eGovernment. These services fundamentally alter the way in which citizens and business interact with their public authorities – they no longer need to wait in long queues, and find or submit information from the comfort of their homes through their laptops, personal computers or mobile devices. In the course of 10 years, European public administrations have also introduced a wide range of digital public services related to different life events (birth, changes in residence, working, etc.) of citizens and businesses in different domains. Various countries are taking different approaches to continuously improve their service provision to citizens. **Malta**, for example, now provides a large proportion of its digital public services through mobile applications.

Mobile public services in Malta

With its Public Service Renewal Programme[67], the Maltese government is driving the necessary change within the public sector to adapt to the changing interactions between citizens and their governments. As a result of the renewal programme, citizens requiring a service from the government shall no longer be bound by standard office hours and will now have access to information and services on a 24x7 basis.

The achievement of this ambitious objective requires numerous parallel initiatives that range from organisational restructuring and human resource training to process revision and the introduction of appropriate technologies to support and deliver the transformation. One of the goals under the Digital Government strategic pillar of the Digital Malta Strategy 2014 – 2020[68] is to make government services accessible through mobile devices, enabling citizens and organisations to be able to transact securely through different channels, such as mobile devices, in order to achieve a more citizen and business-centric government.

The Maltese government is planning to launch a second wave of mobile apps by mid-2018, which will provide citizens with additional functionality. Besides providing citizens the ability to view and exchange information, phase two will introduce the concept of mTransactions. Such functionality would provide citizens the ability to affect payments via their mobile devices, directly from Government's mService[69].

The **UK** on the other hand, it is taking an inclusive service design approach to improve how government interacts with its citizens and businesses.

67 https://publicservice.gov.mt/en/Pages/Initiatives/PublicServiceRenewal.aspx

68 https://digitalmalta.org.mt/en/Documents/Digital%20Malta%202014%20-%202020.pdf

69 https://www.gov.mt/en/Pages/MServices-Guidelines.aspx

User centric service design in UK

The Government Digital Service (GDS) is a centre of excellence in digital, technology and data, collaborating with UK government departments to help them with their own transformation. GDS works with them to build platforms, standards, and digital services.

Since its creation GDS has championed the voice of the user and helped establish a more user-centric model of digital government. For example, in order to be implemented government digital services are required to demonstrate that they have researched and addressed user needs. GOV.UK is also currently using machine learning techniques to generate user-centred taxonomy, saving effort for 1,500 government publishers.

GDS has worked with government to transform its approach to service design and delivery, using multidisciplinary teams and Agile methodology to deliver services. This work is underpinned by the service standard and service manual which are vital resources for teams looking to embark on service transformation across government.

In 2018, GDS created the public sector's first ever Design System for the UK government design community to share and contribute to patterns for good services, saving time and money for departments in development and creating greater consistency and accessibility of public services.

Service Design is now central to the Government Transformation Strategy and GDS is currently re-writing the government's Service Standard in collaboration with departments to reflect true end-to-end service design and emerging technologies.

Some European public administrations, in addition to their portals have national public service catalogues, which summarise and describe business and information technology services offered by national administrations. It is an important component of eGovernment as it helps public administrations streamline public service delivery and improve efficiency and service management by public administrations. The service catalogue lists all available digital public services, their owners, accompanying metadata, and any other relevant information. The information stored in online service catalogues allows the analysts to assess the quality of the provided service and to identify any necessary improvements. In 2014, **Lithuania** launched a new online catalogue of public and administrative services (PASIS[70]), which allows public administrations, citizens, businesses and residents of other countries to consult, in one place, all the public services (digital and offline) available for citizens and businesses in the country.

1.3.4. Publication of open data

In today's world, data has gained a prominent position. As highlighted by the Commission in its Building a European Data Economy communication[71], "data has become an essential resource for economic growth, job creation and societal progress". However, the recognition of the importance of opening up public sector data began much earlier, in 2003, with the adoption of the Directive on the re-use of public sector information, otherwise known as the 'PSI

70 http://www.lietuva.gov.lt/

71 COM(2017) 9 final, Communication from the Commission on Building a European Data Economy, Brussels, 10.1.2017.

Directive'[72]. Open data refers to data that is legally open, which is published under an open licence with limited conditions for re-use. Open data also refers to data that is technically open, which means that the file is machine-readable and free to access by everyone, without restrictions to a non-open source software tool[73]. When opening up public data, it is important to ensure its portability and its interoperability, as well as standards that it uses.

All European public administrations are committed to opening up their public data and make it easy to reuse, share and understand. The European Data portal[74] tracks the performance of individual countries against 10 broad categories: open data readiness – policy and use (consisting of presence policy, national coordination, licensing norms, and use of data); portal maturity (consisting of usability, reusability of data and spread of data across domains); and open data readiness – impact (consisting of political, social, economic). Despite significant progress made by countries over the years, there is room for improvement. The next main challenge with regard to open data is to ensure that it is actively reused by different entities. The current review of the PSI Directive[75] might further contribute to opening further the public information data in Europe and facilitating its reuse. Both **Austria** and **Cyprus** consider the creation of its open government portal as one of its main eGovernment achievements of the past 10 years.

Open data development in Austria

The Austrian government sees the implementation of the Austrian 'One-Stop Open Government Data Metaportal' on 18 April 2012 as an important milestone in a successful implementation of open government data policy in the country. Data.gv.at is a central portal for open government data, launched with the ultimate aim of serving as a single electronic point of contact to find necessary government data. By December 2017, there were more than 2,500 data records published by more than 41 contributing organisations and more than 432 applications created.

With data.gv.at a central portal for open, non-personal and non-infrastructure-critical administration data has been created in Austria. The portal brings together the meta data of the decentralised data catalogues in Austria. The applications that have been created up to now on the basis that these data records can be retrieved directly on the platform. The portal also allows for its users to enter meta data themselves and save administration data directly onto the platform. The platform is the central point of reference for the European Data Portal.

In 2014, Austria's open data portal was awarded the Public Service Award of the United Nations in the category "Improving the delivery of public services".

72 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32013L0037

73 Open Data in a nutshell. (n.d.). ***European Data Portal***. Retrieved from: https://www.europeandataportal.eu/en/providing-data/goldbook/open-data-nutshell

74 https://www.europeandataportal.eu/en/dashboard#2017

75 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32013L0037

Creation of a Government Data Warehouse in Cyprus

The government of Cyprus is in the process of creating a Government Data Warehouse, which will be a single database designed with the end-user in mind, providing a consolidated view of Civil Service data, optimised for reporting and analysis. In particular, this database will contain selective transactions and inter-related information from all Government Information Systems, specifically structured for dynamic queries and analytics.

The objective of the Data Warehouse (central repository of data) is to enable easy access to accurate, consistent and integrated government data for better and faster decision making and for statistical purposes. With the implementation of this project, the Cypriot government hopes that it will be able to makes it public sector data into a tool for decision making.

1.3.5. Strengthening of digital skills

In addition to the modernisation of the legal frameworks, adoption of the infrastructure and development of digital public services, it is equally important for public administrations to strengthen digital skills in the country. Firstly, strengthening the digital skills of civil servants allows them to exploit the opportunities offered by ICT, and use them critically and innovatively in their work processes and service delivery. Secondly, all citizens must develop digital skills not only in order to become citizens of the 21st century, but to also be able to reap full benefits of the digitisation of their state. According to the Digital Economy Society Index, in 2018 43% of European citizens still did not possess basic digital skills[76]. **Portugal**, in order to equip its citizens with better skills to access its digital public services has created dedicated Citizen Spots all over the country.

Strengthening citizens' digital skills in Portugal

In 2014 the Portuguese government launched an initiative aimed an initiative aiming to bring citizens closer to digital public services offered by their state. The aim of Citizen Spots[77] is to teach citizens how to use digital public services, regardless of their age, social and economic background or geographical distribution. The Portuguese government hopes that this initiative will help to improve digital literacy in the country and will bridge the digital divide.

The Citizen Spots consists of a physical multiservice counter where citizens can access a wide range of digital public services with the help of trained assistants, who demonstrate and explain to citizens how to access the digital service by themselves.

The network of Citizen Spots today consists of 500 counters located in town halls, parishes or post offices throughout the country, providing access to services that range from civil registration documents to social security and tax services, and a multitude of other services citizens commonly need and use. In 2017, 22 new public services were made available to the citizens.

76 https://ec.europa.eu/digital-single-market/en/desi

77 https://www.ama.gov.pt/web/english/citizen-spot


SCANNING

Over the past 10 years the European public administrations have significantly advanced in the domain of eGovernment and interoperability. They adopted multiple strategies laying down visions of achieving eGovernment, digitising public administrations, improving infrastructure and adopting new technologies; they strengthened and updated their legal frameworks to better support the deployment of new initiatives and most importantly, have successfully made their eGovernment vision into reality by introducing new digital public services, introducing eIDs, digitising and standardising the exchange of data between the public authorities and hence significantly improving the way that businesses and citizens interact with public authorities across Europe.

02

State of play of digital transformation of public administrations across the European countries

2. State of play of digital transformation of public administrations across the European countries

European countries promote the digitisation of their public administrations. They are harnessing the benefits brought by digital technologies to modernise their operations at all levels. The application of ICT greatly improves efficiency of public services and has a transformative effect on public service delivery to citizens and businesses. The key progress they made is summarised yearly in the eGovernment factsheets published by the European Commission. This chapter provides an insight on the latest efforts of European countries to shed light on the current situation regarding the digital transformation of administrations in Europe. It describes the key European eGovernment and interoperability initiatives undertaken during 2017 – 2018. This chapter starts by spelling out the broad digital strategies and laws. It then provides an analysis of the main actors in charge of the digitisation of public administrations, as well as the deployment and improvement of eGovernment services and infrastructures.

2.1. Policy and legal initiatives supporting the transformation of the public sector

The modernisation of public administration through the use of ICT is a vast undertaking, and European countries need to have clear policy and legal framework, along with financing programmes to support efficient action. This section presents the most recent developments on political communications, legal and financial instruments across Europe.

Overall, 33 political communications, 43 laws and 6 financing instruments were either adopted or revised over the last year in the field of digital government for 34 European countries.

By **political communications**, we refer to any official document setting up the political priorities and objectives of the country in the domain of digital transformation of governments, and the recommendations or guidelines to achieve the policy objectives. It includes strategies, action plans and frameworks. Most political communications address various aspects of eGovernment and interoperability through the elaboration of broad digitisation strategies running up to 2020, such as the **Greek** National Digital Strategy[78] or the **Portuguese** ICT 2020 Strategy[79]. Our analysis confirms that 19 strategies were adopted or revised in 14 different European countries last year, which means that just under half of the total European countries updated their digital strategies. Strategies are often accompanied by action plans and 11 of 34 European countries also worked on a digitisation action plan. This was the case of **Croatia** which issued the e-Croatia 2020 strategy along with the Action Plan for e-Croatia[80]. Other frameworks guide the designing and implementation of digital policies such as the **Polish** National Framework of Cybersecurity Policy[81] which aims at raising the level of security in the cyberspace of the Republic of Poland and identifying mechanisms and measures to strengthen Poland's cyber security capabilities by 2022.

78 http://mindigital.gr/images/GENIKOI/RALIS/PDF/Digital_Strategy_2016_2021.pdf
79 https://tic.gov.pt/documents/CTIC_TIC2020_Estrategia_TIC.pdf
80 E-Croatia 2020 (see annex 4 for action plan): https://uprava.gov.hr/UserDocsImages/Istaknute%20teme/e-Hrvatska/e-Croatia%202020%20Strategy%20-final.pdf
81 https://cyberwiser.eu/poland-pl

To support the timely implementation of the digital strategies, **financing instruments** are needed. Financing instruments encompass programmes, projects and financing plans of European administrations aimed at providing public money to achieve the policy objectives set in the strategies. The **Icelandic** Financial Plan for 2018-2022[82] has for instance as a main objective to ensure that administrative data is safe, timely, only recorded once and protected by the best technical solutions.

In some cases, to regulate different aspects of the digitisation or transformation of the public sector, **legal frameworks** are developed by different European countries. A legal framework refers to the set of laws implemented in a country during the past year that enable the implementation of initiatives in the ICT domain. Figure 2 shows the main digital themes that saw their legal frameworks built or enhanced in European countries last year. The year's special focus on data protection is a consequence of the General Data Protection Regulation[83] approved by the EU Parliament in April 2016 and enforced in May 2018. The GDPR guarantees more data privacy to the persons in Europe by regulating the automated processing of their data.

More than a third of the above-mentioned legal instruments adopted in Europe last year are related to the deployment of eGovernment infrastructure. Out of these 16 digital government infrastructure laws, 10 are related to eID infrastructure, as shown in Figure 3. The six remaining laws are spread between regulating eProcurement, eSignature and eDocuments. The adoption of laws related to eID and eSignature is largely due to the application of the eIDAS Regulation, since all European public organisation delivering public services must be able to process electronic identification from September 2018[84].

Another area in which European administrations made a lot of significant efforts was in the provision of enhanced eGovernment services to citizens and businesses. The Figure 4 illustrates which countries implemented or revised laws on digital public services.

Cyber-security & Digital trust is another priority of legal initiatives in the digital domain across Europe. This is due to the Directive on security of network and information systems (NIS)[85], which provides legal measures to increase the overall level of cyber-security in Europe. Member States must transpose the Directive into their national law by May 2018 and identify operators of essential services by November 2018.

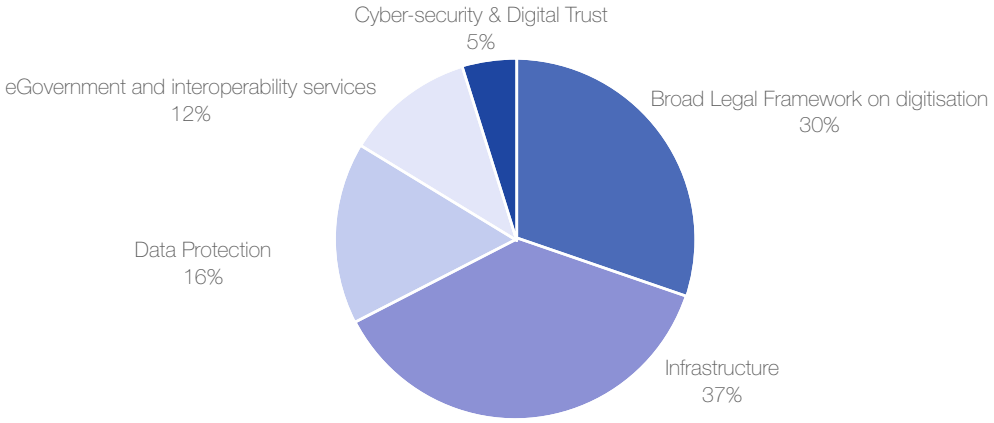
82 https://www.stjornarradid.is/gogn/stefnur-og-aaetlanir/opinber-fjarmal/hagsyslugerd-grunnskrar-og-upplysingamal/

83 L 119 REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), Brussels, 4.5.2016

84 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014R0910&from=EN

85 L 194 DIRECTIVE (EU) 2016/1148 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union, Brussels, 19.7.2016.

Figure 2 Laws implemented in the European countries per digital government theme



Source: analysis of the main legal framework presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.

Figure 3 European countries which implemented eGovernment infrastructure laws

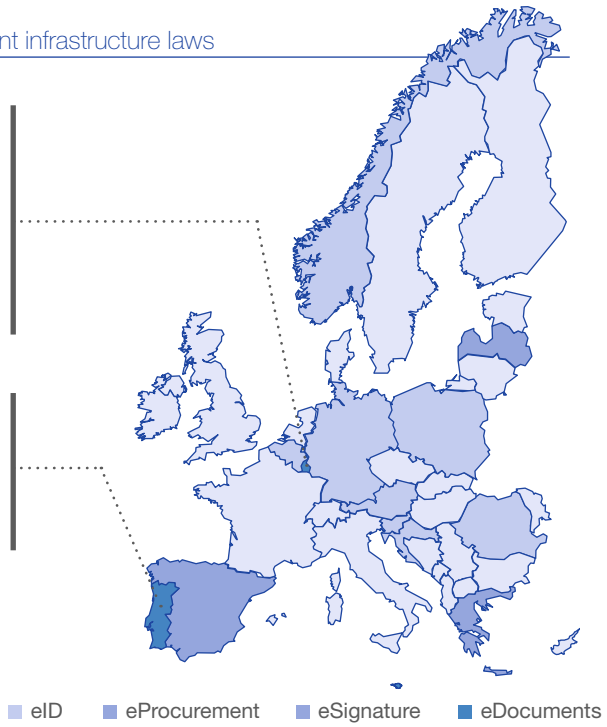
Luxembourg

A new Act on eProcurement has been adopted in March 2018. It has four main objectives:

- enabling public markets to become an instrument of political strategy;
- introduction of measures of simplification;
- prevention of conflicts of interest, favouritism and corruption;
- clarification of certain rules.

Portugal

The eSignature Law (nº 32/2017), effective as of 1 October 2017, establishes the integration of new electronic authentication features, namely the Professional Attributes Certification System, which allows for authentication and signature of professional quality by using the national eID card (Citizen Card).



Source: analysis of the main legal framework presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.

Note: the map indicates those countries where eGovernment infrastructure laws were adopted, with the two highlighted examples serving as an illustration.

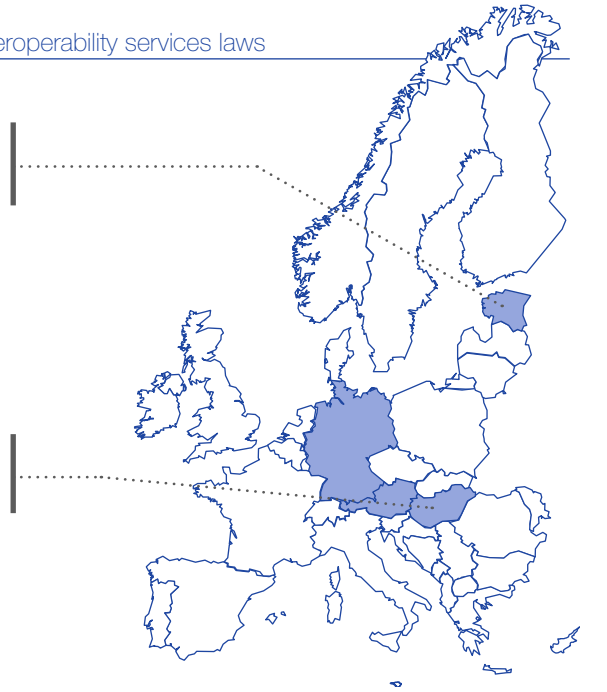
Figure 4 Countries which implemented eGovernment and interoperability services laws

Estonia

The Simplified Business Income Taxation Act, which came into force in 2018, allows for small companies to operate without bureaucracy, and submit less documents.

Hungary

The Decree of the Ministry of Human Capacities 39/2016. (XII. 21.), that makes the use of eHealth services compulsorily, has been adopted.



Source: analysis of the main legal framework presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.

Note: the map indicates those countries where eGovernment and interoperability related laws were adopted, with the two highlighted examples serving as an illustration.

For information purposes, **Table 2** provides a summary of the main laws aiming to digitise public administrations adopted in the European countries over the last year.

Table 2 Main laws enabling the digitisation of public administration adopted in 2017 & 2018

	Country	Governmental body
	Austria	**Austrian Deregulation act & corresponding amendment of 1a E-GovG**: brings a substantial reduction in the administrative burdens. The means of electronic communication for the citizens with the public administration and courts will be introduced beginning from 1 January 2020 at the latest.
	Belgium	**Law on electronic identification** **Royal Decree of 22 October 2017**: sets out the rules governing the recognition of private electronic identification services, and mobile services in particular. Working with private partners allows the government to keep costs under control and to foster innovation.
	Bulgaria	**Electronic Document and Electronic Trust Services Act amendment**: aims to reduce the administrative burden for citizens and businesses, to stop the use of paper documents certifying data and information already available in the administrative registers and to oblige the administrations to exchange data and information electronically.
	Croatia	**Law on the implementation of eIDAS**
	Czech Republic	**Amendment or adoption of the Act on Information Systems of Public Administrations, Act on Trust Services for Electronic Transactions, Act on Electronic Identification and Act on Citizen Identity Card**: respectively define amongst other things, a more effective approach to public administration ICT governance, codify rules for using national ID cards with a chip, and define respective roles of the National Registers Authority and the National Identity Authority.
	Estonia	**Regulation on the Principles for Managing Services and Governing Information**: aims to establish a common view on how to develop, maintain and provide high quality public services. Simplified Business Income Taxation Act: allows for small companies to operate without bureaucracy, and submit less documents.
	France	**Digital Bill (Loi pour une République Numérique):** introduces new provisions that will regulate the digital economy as a whole (such as open data, online cooperative economy, revenge porn and access to the internet). It establishes the following principles: net neutrality; data portability; right to maintain the connection; confidentiality of private correspondence; right to be forgotten for minors; better inform consumers of online reviews; openness of public data; improved accessibility; and digital death.
	Germany	**Federal Data Protection Act**: to make better use of the opportunities offered by digitisation without endangering personal rights and align with the basic data protection ordinance. **Act for the Improvement of Online Access to Administration Services**: the federal, Länder and local governments are now required to provide all administrative services online within five years, make them available through mutually linked online portals and allow access via a single-user account. **eID Scheme** (eIDAS compliant)
	Greece	**Law 4412/2016**: extends the provisions for eProcurement and consists of an adaptation of procurement to EU Directives 2014/24/EU and 2014/25/EU
	Hungary	**eAdministration Act**: entered into force. The Act obliges almost all public administration bodies, as well as other institutions like courts and public prosecutor offices to provide electronic channels and services in compliance with the legal requirements set in the Act's implementing decree. **Decree of the Ministry of Human Capacities 39/2016. (XII. 21.)**: makes the use of eHealth services compulsory
	Italy	**Reform of the Digital Administration Code**: lays down the legal foundations for many of the services established in the Three-Year Plan for ICT in the Public Administration
	Latvia	**Law on the Official Electronic Address** to ensure secure, efficient and high-quality electronic communication and handling of electronic documents between public entities and private individuals. **Personal Data Processing Law** has entered into force on May 2018, which transposed the Regulation (EU) 2016/679 (General Data Protection Regulation) into national law
	Lithuania	**Amendment to the Law on Public Administration** came into force, making the provision and update of information in PASIS mandatory to all public and administrative service providers. **Law on Cyber Security and the Law on Management of State Information Resources** was adopted in order to finalise the consolidation of the management of cybernetic and electronic security

	Country	Governmental body
	Luxembourg	**Act on eProcurement**: enables public markets to become an instrument of political strategy; introduces of measures of simplification; prevents conflicts of interest, favouritism and corruption; and clarifies of certain rules.
	Malta	**Legal Notice 284 of 2016**: electronic submission of income tax related documentation was consolidated and updated through
	Norway	Adoption of legal frameworks compatible with eIDAS and GDPR
	Poland	**National Act on Trust Services and Electronic Identification**: aligns the national legal system with the eIDAS Regulation.
	Portugal	**eSignature Law (nº 32/2017)**: establishes the integration of new electronic authentication features, namely the Professional Attributes Certification System, which allows for authentication and signature of professional quality by using the national eID card (Citizen Card).
	Slovakia	**Amendment the Act No. 305/2013 on the eGovernment**: introduces simplifications to the signing of electronic submissions, online payments for electronic public services, central register of electronic statements or single delivery of official documents. Under the new conditions, electronic submissions can be signed by using an eID card without qualified electronic signature – the so-called one click signature.
	Spain	**Law 9/2017 on Public Sector Contracts**: transposes the European Parliament and Council Directives 2014/23/EU and 2014/24/EU of 26 February 2014 into Spanish law.
	UK	**Digital Economy Act 2017** – implements a number of government commitments on the digital economy, including the provision of digital public services.

Source: analysis of the main legal framework presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.

2.2. The main eGovernment players at national, regional and local levels

Implementation of modernisation of public administration reforms takes place at national, regional and local levels. In order to ensure smooth reform implementation, coordination and monitoring of eGovernment and interoperability reforms, national governments have delegated responsibilities to different actors, be it from dedicated ministerial departments or digitisation focused agencies, at different national, regional and local levels. This chapter aims to shed more light on the different actors across Europe responsible for this policy area.

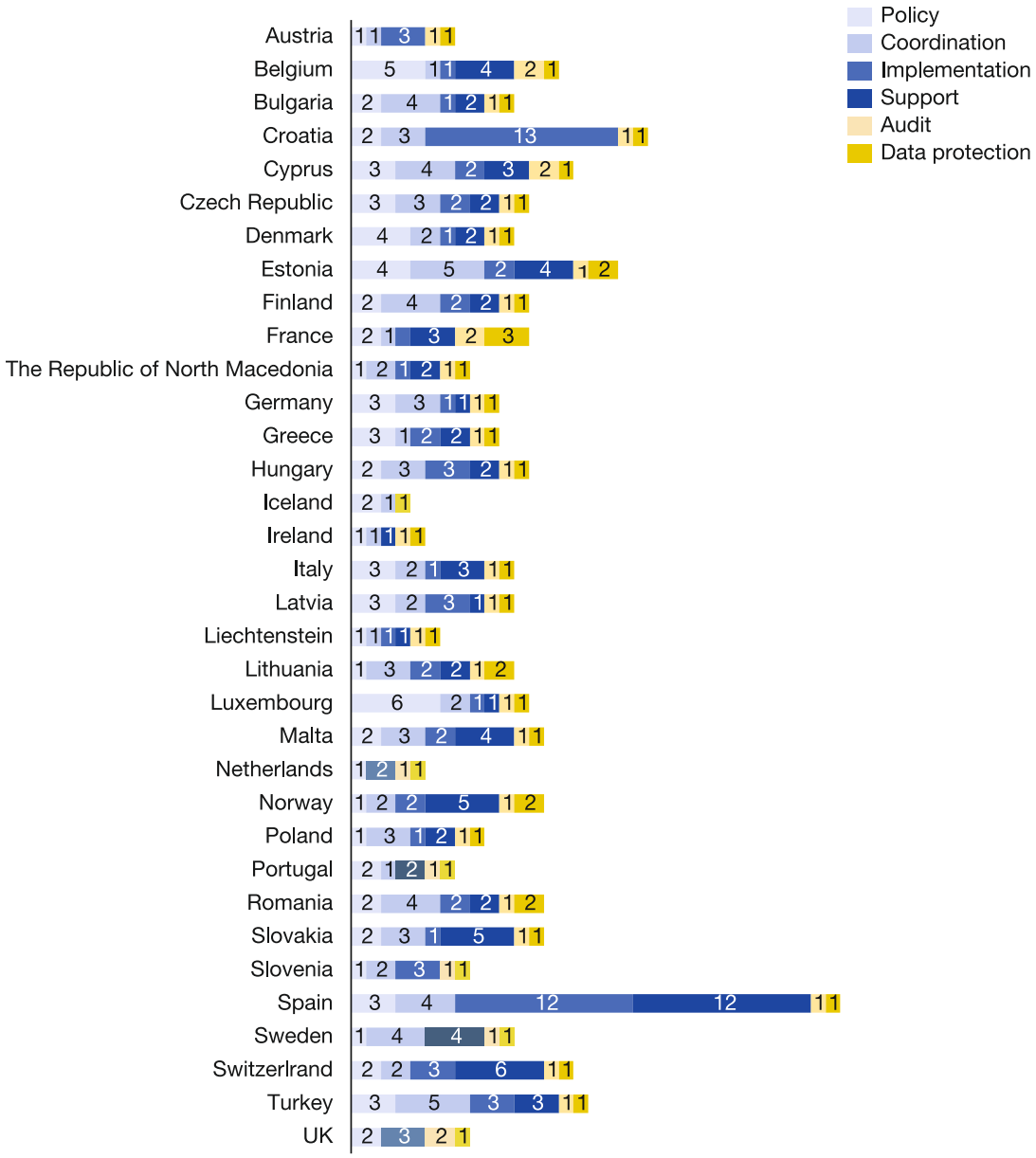
2.2.1. National level

Each public administration has delegated responsibilities to various actors for policy and strategy setting in the country, along with the coordination, implementation, support, audit and data protection in the domain of eGovernment. These responsibilities match the policy making cycle of the modernisation of public administration in Europe.

Different countries, depending on their size, administrative structure and history have different number of actors responsible for eGovernment. The number of institutions vary among different countries. **Spain** (15), **Estonia** (14), **Croatia** (14), **Switzerland** (14) and **Cyprus** (13) have the largest number of actors responsible for eGovernment and interoperability implementation. Countries like **Liechtenstein** (4), **Iceland** (4), **Poland** (5), **Latvia** (5) and the **Netherlands** (5) are on the other end of the spectrum. The median number of institutions responsible for eGovernment in Europe is eight. There also does not seem to be a link between the size of the country and the number of actors responsible for eGovernment, with large countries, like Poland, having only five actors, and smaller countries, like **Croatia**, having 14 different actors.

More importantly, there is also a varying number of actors that are also responsible for each stage of the policy cycle at the national level, namely policy, coordination, implementation, support, audit ad data protection as illustrated in Figure 5. It is important to note, that more often than not, one single body might be responsible for more than one aspect of modernisation of public administration. In **Spain**, for example, the same twelve bodies are responsible both for support and for the implementation of different eGovernment initiatives. Similarly, more often than not, the same body is responsible for policy development and coordination of eGovernment in the country. On average, it seems that most countries have a similar number of actors dedicated to different aspects of eGovernment and interoperability policy, with only few exceptions. On average every European country comprises two bodies that are responsible for policy setting; three for coordination; two for implementation; three for support and one for audit and data protection in public administrations across Europe.

Figure 5 eGovernment responsibilities at national level



Source: analysis of the main institutions presented in the 'eGovernment actors section' of 2018 eGovernment factsheets performed by Wavestone.

Note: in some countries the same bodies are responsible for more than one aspect of digital transformation development and realisation.

It also seems that countries are increasingly moving to create dedicated government institutions solely responsible for eGovernment oversight in the country. The recently created State eGovernment agency[86] of Bulgaria, or the Government IT centre in Luxembourg[87] are responsible for policy setting, coordination, implementation and support. In each analysed country, there is one central body, which seems to be responsible at least for policy setting, coordination and implementation. **Table 3** below presents the countries, which have dedicated eGovernment bodies responsible for at least two of the following eGovernment functions: policy setting, coordination or implementation.

Table 3 eGovernment bodies responsible for policy setting, coordination and implementation[88]

	Country	Governmental body
	Belgium	Digital Transformation Office (BOSA)
	Bulgaria	State eGovernment agency
	Croatia	Central State Office for the Development of Digital Society
	Cyprus	Department of Information Technology Service (DITS) Department of Electronic Communications (DEC)
	Czech Republic	Department of eGovernment
	Denmark	Agency for Digitisation, Ministry of Finance
	Estonia	eEstonia Council Estonian Association of Information Technology and Telecommunications Estonian Information System Authority Government CIO Office
	The Republic of North Macedonia	Ministry of Information Society and Coordination
	Germany	Federal Government Commissioner for Information Technology Federal Ministry of the Interior
	Greece	IT and Communications Committee Ministry of Administrations Reconstruction
	Hungary	Ministry of Interior Ministry of National Development
	Italy	Agency for Digital Italy, Prime Minister's Office Ministry of Simplification and Public Administration - Department of Civil Service Digital Transformation Team
	Latvia	Ministry of Environmental Protection and Regional Development
	Liechtenstein	Office of Information Technology
	Lithuania	Ministry of Economy and Innovation
	Luxembourg	Government IT Centre Ministry of the Civil Service and Administrative Reform
	Malta	Malta Information Technology Agency
	Norway	Ministry of Local Government and Modernisation

86 https://e-gov.bg/en/about_us

87 https://ctie.gouvernement.lu/en.html

88 At the time of this report, Sweden is in the process of setting up an eGovernment bodies responsible for policy setting, coordination and implementation.

	Country	Governmental body
	Poland	Ministry of Digital Affairs
	Portugal	Administrative Modernisation Agency
	Romania	Agency for Digital Agenda of Romania
	Slovakia	The Deputy Prime Minister's Office for Investments and Informatisation of the Slovak Republic
	Spain	Ministry of Energy, Tourism, and Digital Agenda Ministry of Finance and Public Function
	Sweden	Agency for Digital Government
	Turkey	Ministry of Transport, Maritime Affairs and Communications Ministry of Development
	UK	The Digital Government Service

Source: analysis of the 'eGovernment actors section' of the 2018 eGovernment factsheets performed by Wavestone.

2.2.2. Regional and local levels

It is important to note that in multiple European countries the responsibility for eGovernment policy setting, coordination and implementation lies not only in the hands of the national but also regional and local levels. In **Belgium**, for example, the political responsibility for eGovernment is held directly by the Prime Ministers of the three regions: Flanders, Wallonia and the Brussels-Capital regional. Similarly, in **Germany** each Länder has its own dedicated digitisation strategy, and in the **UK** England, Scotland, Wales and Northern Ireland have a dedicated strategy and actors responsible for strategy development in the regions.

In other countries, such as **Austria**, regional governments do not play such a direct role in setting eGovernment priorities. Nevertheless, they still participate in policy setting and coordination by participating in the 'Digital Austria' platform, headed by the Chief Information Office of Austria, where they can contribute their views on the priorities of eGovernment in the country. Furthermore, in countries like **Denmark** local governments are represented by the Local Government Denmark[89], a national association of local authorities, which participates in the eGovernment Steering Committees. Finally, in all countries local government authorities, such as municipalities play in important role in implementing and supporting the deployment of eGovernment initiatives.

2.3. The provision of eGovernment services is progressing in Europe

One of the main goals of developing eGovernment is to improve the effectiveness of public services delivery. Besides establishing strong legal and political frameworks and defining roles & responsibilities of the key actors in charge of transforming the public sector in the national context, a significant part of the recent progress of the public sector in Europe is the availability of digital public services for citizens or businesses.

Digital public services in Europe

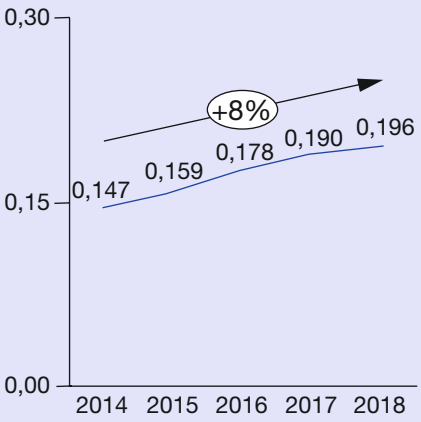
In the period 2014-2018, the share of public services available to businesses and citizens grew respectively by 8 and 9% in the 28 European Member States as illustrates. In 2018, 19, 6% and 18,5% of all the public services to businesses and citizens are available online. The Digital Economy and Society Index (DESI)[90] assesses the

89 http://www.kl.dk/English/Local-Government-Denmark/

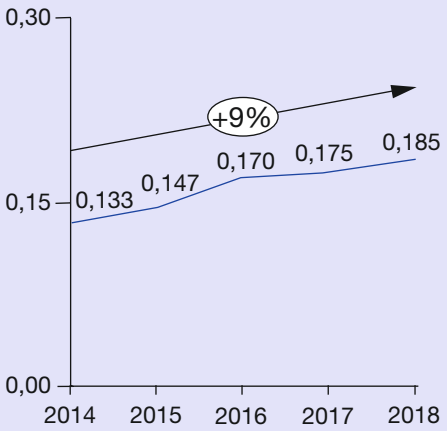
90 https://digital-agenda-data.eu/datasets/desi/indicators

digital performance of Europe on various levels. The breakdown of this indicator allows us to have a rather precise view on the digitisation of European Public Administrations. The eGovernment Services for Businesses represent the share of public services needed for starting a business and for conducting regular business operations that are available online for domestic as well as for foreign users. The Online Service Completion on the other hand shows the share of the steps in a Public Service life event that can be completed online.

Overall, the DESI index subpart which represents Digital Public Services comprising of eGovernment (DESI_5) increased by 6% in the Member States between 2014 and 2018.



eGovernment Services to Businesses (5a4)



Online Service Completion (5a3)

Source: analysis of the DESI indicator performed by Wavestone.

Note: the Y axis of both graphs represents the average percentage of all public services made available digitally in Europe.

The increase in the number of public services available online is often realised through the launch of eGovernment portals by European public Administrations. These portals gather various public services online in the form of one-stop-shop. This is for instance the case in **Austria** with HELP.gv.at[91] and in **Malta** with Servizz.gov[92]. According to the 2018 factsheets, a total of 24 eGovernment portals offering a wide range of public services online were either launched or updated in 18 European countries, meaning that more than half of the European countries recently revised or launched an eGovernment Portal.

Moreover, many public services, which were on a paper form or required the citizens to go to a public agency were made accessible online. For example, **Poland** launched a portal providing multiple online services[93], including ID cards applications and notifications of ID loss. Before, this service was not available online in this country.

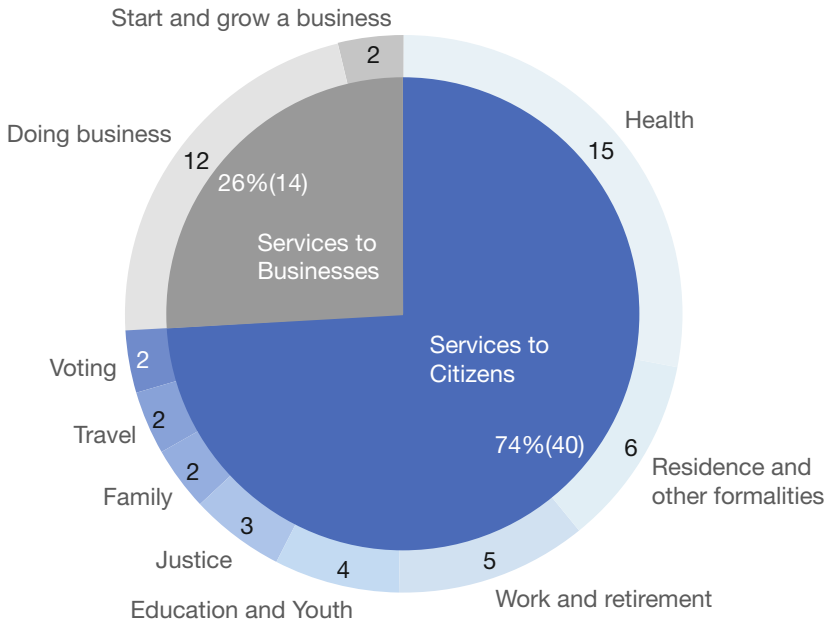
Since public services are delivered throughout the whole lifetime of citizens and businesses, these newly available online services are clustered to the main life-events of citizens and businesses as summarised in Figure 7. Around three quarters of these online public services are addressed to citizens and the remaining quarter is addressed to businesses.

91 https://www.help.gv.at/Portal.Node/hlpd/public/en

92 https://servizz.gov.mt/en/Pages/default.aspx

93 https://epuap.gov.pl/wps/portal/english

Figure 7 Newly available online public services to businesses and citizens in Europe



Source: analysis of the main eGovernment services presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.

eGovernment services to citizens

More than a third of the newly available services to citizens relate to health. The countries which launched these eHealth services are illustrated in Figure 8. These services include but are not limited to ePrescription which was implemented in **Czech Republic**[94], **Latvia**[95], and extended in **Spain**; and access to medical data by patients and medical staff with the **Norwegian** Summary Care Record[96] and **Hungarian** Electronic Health Cooperation Service Space[97].

94 https://www.epreskripce.cz/webova-mobilni-aplikace-pro-praci-s-cuer-pacient
95 http://www.itbaltic.com/e-health/e-prescription/
96 https://helsenorge.no/other-languages/english/online-tools
97 https://e-egeszsegugy.gov.hu/eeszt

Figure 8 Countries which implemented online health public services

Norway

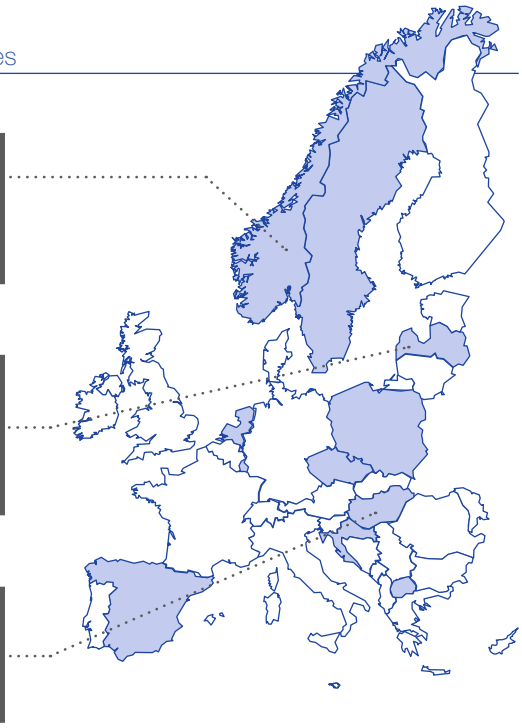
Summary Care Record (Kjernejournal) is an online service that contains a collection of person's health records. Both the citizen and the healthcare staff have access to this information. It allows for a prompt and secure access to the information in the patient's care record by healthcare professionals when needed.

Latvia

A new health eService was developed, ePrescription, the use of which is mandatory for all doctors and pharmacies from 2018. The service will help to ensure easy and quick record and exchange of information between the patient and the medical practitioners involved in their care, and increased health care efficiency.

Hungary

The government launched an Electronic Health Cooperation Service Space (EESZT), which enables information systems and health professionals in the sector to work together. Patients' medical history is regularly updated onto their eProfile.



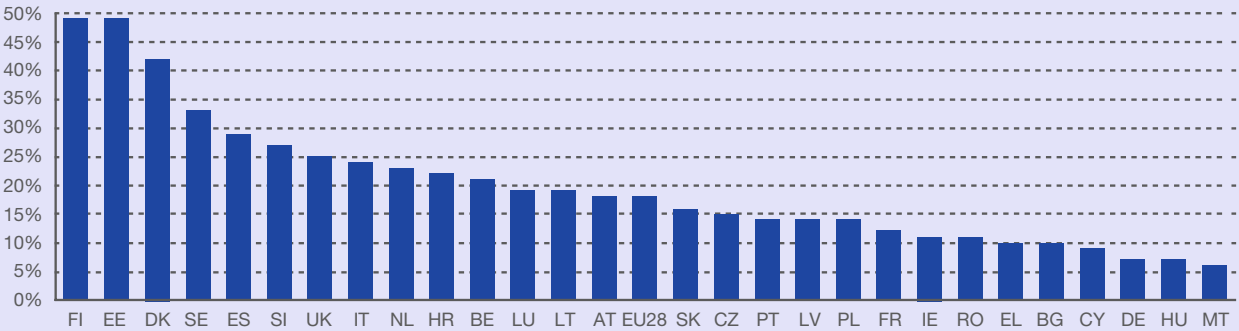
Source: analysis of the main eGovernment services presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.
Note: the map indicates those countries which implemented online health public services, with the three highlighted examples serving as an illustration.

Provision of digital health services in Europe

The eHealth component of the DESI indicator (5b1) has been very stable between 2014 and 2018. Over this period, 18% of EU citizens have used health and care services provided online each year, without having to go to a hospital or a doctor (for example, by getting a prescription or a consultation online). Almost 50% of Finnish and Estonian citizens use eHealth services, while in Denmark the percentage is slightly lower (42%).

According to Eurobarometer, 52% of all citizens would like online access to their medical and health records. EU citizens are much more willing to share data on their health and wellbeing with doctors and healthcare professionals (65%) than with companies (14%) or with public authorities even if anonymised and for research purposes (21%).

Figure 9 eHealth Services



Source: Eurobarometer, Special Eurobarometer 460: Attitudes towards the impact of digitisation and automation on daily life, 2017. Digital Economy and Society Index Report 2018, Digital Public Services.

On April 2018, the Commission issued a communication to the European Parliament and European Council[98] to complement the current achievements on the availability of health services online. It sets out how the EU can help the Member States to improve cross border online public health services. It proposes to build the necessary cooperation and infrastructure across the EU and in doing so, helping Member States to fulfil their political commitment in these areas.

The remaining eGovernment services to citizens are spread between other life-event categories, with a predominance of services related to ''Residence and other formalities' and 'Work and Retirement'.

eGovernment services to Businesses

In addition to citizens, businesses are an equally important stakeholder group for public administrations. In this regard, all European public administrations aim to provide digital public services to the private sector to facilitate their operation and reduce the administrative burden. Under the European Services Directive[99], each Member State must have an established Point of Single Contact (PSC), which allows private sector entities to deal with different public authorities through a centralised portal. Furthermore, the Single Digital Gateway (SDG) Regulation[100] recognises that in order to operate to their full potential, businesses should be able to seamlessly access cross border digital public services. To facilitate the provision of digital public services to businesses, the proposed regulation puts forward the organisation of the services provided to citizens and businesses into life events[101]. This would significantly simplify the way businesses interact with their public authorities through the PSCs.

Given the above, it is not surprised to see that in the last 12 months, 14 new public services were made available to businesses online across 34 European countries, as illustrated on **Figure 10**. These services include but are not limited to making information and certificates more accessible online thanks to the **Italian** "digital drawer of the entrepreneur"[102], **Greek** Business portal[103] and **Czech** web Business portal[104]; and supporting the entrepreneurs in starting their business thanks to online companies' registration in **Sweden**[105] for example.

98 COM(2018) 233 final, COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on enabling the digital transformation of health and care in the Digital Single Market; empowering citizens and building a healthier society, Brussels, 25.4.2018.

99 Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market.

100 Regulation (EU) 2018/1724 of the European Parliament and of the Council of 2 October 2018 establishing a Single Digital Gateway to provide access to information, to procedures and to assistance and problem-solving services and amending Regulation (EU) No 1024/2012.

101 The final number of life events to be contained in the Single Digital Gateway is still to be finally decided upon.

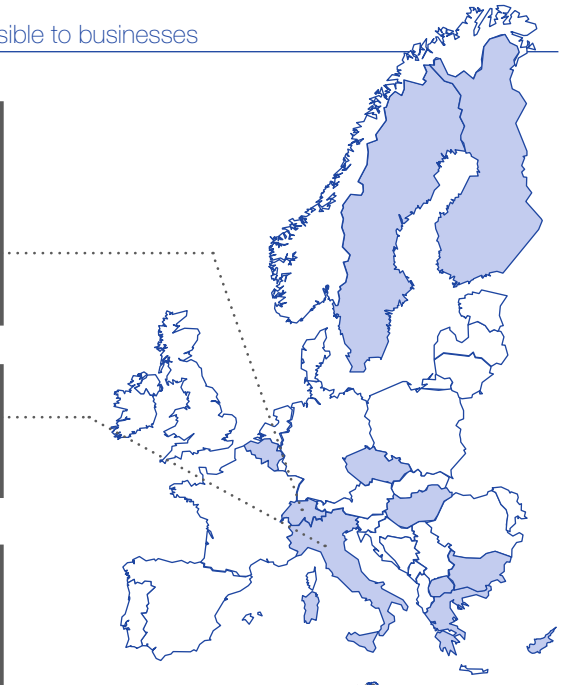
102 Italian "digital drawer of the entrepreneur" https://impresa.italia.it/itlg/app/public/#/login

103 Greek Business Portal http://www.businessportal.gr/

104 Czech business web portal http://www.businessinfo.cz/en/expanding.html

105 http://bolagsverket.se/en

Figure 10 Countries which made online public services accessible to businesses



Switzerland

The new Portal EasyGov was launched. It provides support to businesses offering the following public services online:

- Registration of entries and amendments at the competent cantonal Commercial Registry
- Simplification of the registration to Value Added Tax (VAT)
- Registration with the social security (pensions/disability allowances/EO) and accident insurance (AIA) authorities

Italy

Establishment of a 'digital drawer of the entrepreneur': a platform on which every entrepreneur is able to access information and official documents of his company without any charges. It is a point of contact between entrepreneurs and public administrations.

Malta

The Customs Department, in collaboration with the Malta Information Technology Agency, launched the National Import and Export System (NIES). It enables a system-to-system facility for the exchange of information with the trading community. The main objectives are to comply with local and EU legislation, simplify business processes, reduce the total cost of ownership (TOC), and provide a better user experience to economic operators and Customs officers.

Source: analysis of the main eGovernment services presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.
Note: the map indicates those countries which made online public services available to businesses, with the three highlighted examples serving as an illustration.

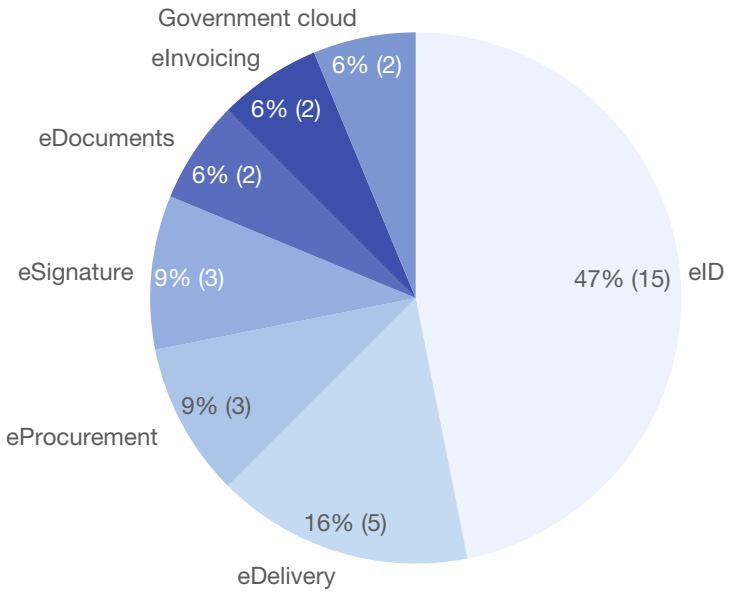
To conclude, the overall eGovernment performance in Europe is moving in the right direction, and most countries are managing to make more public services online as the usage of eGovernment services increased by 6% since 2014.[106]

eGovernment infrastructure

The launch of online government services to citizens and businesses is conditional to the existence of reliable supporting digital infrastructures. In other words, a safe digital identification system is a prerequisite to launch a service such as a eHealth portal which allows citizens to access their medical information for example. This section highlights the countries' progress made in building strong digital government infrastructures. They are clustered to the five CEF building blocks and two additional building blocks that emerged from the data analysis: Government Clouds and eDocuments, as illustrated on Figure 11.

106 Analysis of DESI indicator performed by Wavestone

Figure 11 Infrastructures supporting digital governments built in Europe



Source: analysis of the main eGovernment infrastructures presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.

eID: close to half of the infrastructure services recently implemented are related to digital identification and trust services (eSignature). This is coherent considering the required application of the European Regulation eIDAS[107]. For example, **Germany** was the first member state to pre-notify the commission of its eID scheme in accordance with the eIDAS regulation. The notification was accepted and following the completion of the process, any German citizen who has activated the eID function of their ID card will be able to use the services provided by other EU Member States administrations online, using their German eID in a cross-border context.

Figure 12 countries which implemented eID infrastructures

Sweden

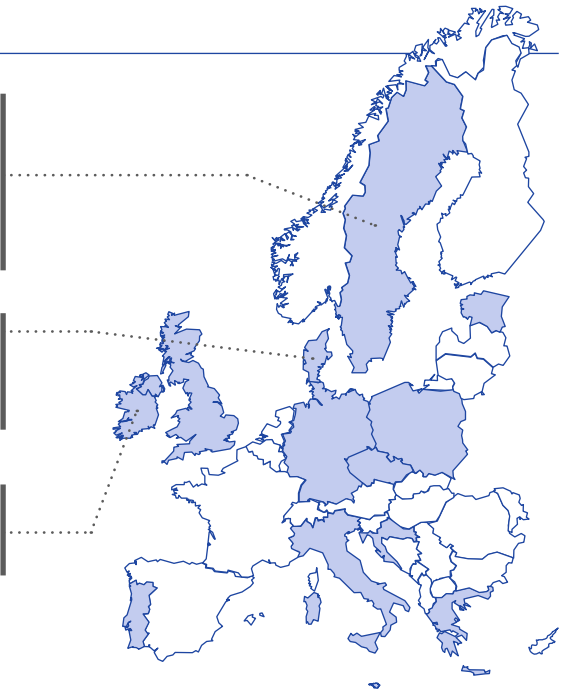
In March 2017, the technical framework of the Swedish E-identification Board (Elegitimationsnämnden) was updated and adapted to eIDAS. Thanks to that, government authorities and municipalities will now be able to connect their eServices to the Swedish eIDAS node that is being developed by the Swedish E-identification Board.

Denmark

The personal NemID (common login solution and digital signature for both public self-service, online banking, etc.), can now be used by business-owners within companies to log in to digital self-service solutions.

Ireland

The Public Services Card (PSC) and its online equivalent MyGovID enables citizens to have a single approach to online identity across the public service.



Source: analysis of the main eGovernment infrastructures presented in the 'Highlights' section of 2018 eGovernment factsheets performed by Wavestone.

Note: the map indicates those countries which implemented eID infrastructures, with the three highlighted examples serving as an illustration.

107 Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC.

An example of **eDelivery** infrastructure is the **Finnish** "Palveluväylä"[108], which consist in a standard way of transferring data between organisations to enable secure service packages to citizens, businesses and authorities. It allows the users of the platform to access information from different registers and the service providers to showcase their services to citizens, businesses and officials.

Regarding **eProcurement, Romania** is implementing a project[109] aimed at consolidating e-Procurement solutions for example. It results in implementing the eCertis services to align with the European public procurement standards and directives.

By **Government Clouds**, we refer to governments using computing services (such as the storage of documents, exchange of information or use of applications) which are on remote servers on the internet to make public services available to citizens. For example, **Estonia**[110] and **Greece**[111] introduced government clouds to improve the provision of eGovernment services, and to save costs. The implementation of G-Cloud in **Greece** reflects the willingness to modernise the public sector under the e-Government Action Plan 2014-2020 drawn up by the Ministry of Administrative Reconstruction and under the National Digital Strategy prepared by the General Secretariat for Digital Policy. The **Estonian**

108 https://esuomi.fi/palveluntarjoajille/palveluvayla/

109 https://www.aadr.ro/solu%C8%9Bii-e-procurement-%C3%AEn-rom%C3%A2nia-consolidarea-utiliz%C4%83rii-duae-%C8%99i-integrarea-serviciului-e-certis_200_0.html

110 https://e-estonia.com/solutions/e-governance/government-cloud/

111 https://www.gcloud.ktpae.gr/

Government Cloud is also part of the Estonia 2020 strategy. It is built to avoid duplication and increase cost effectiveness, as it promotes the use and reuse of data and technologies[112].

eDocument refers to the initiatives allowing to submit digital documents instead of paper documents. They represent a step forward to modernisation and ease the administrative processes since they remove the obligation to send paper documents. For example, **Bulgaria** implemented RegiX tool[113] which allow public administrations to retain and access personal data of citizens stored in the registers, and therefore remove the necessity of providing paper documents to certify this information.

112 https://www.mkm.ee/sites/default/files/digital_agenda_2020_estonia_engf.pdf, page 26
113 https://regix-service.egov.bg/

03

The role of the European Commission in the digital transformation of the public sector

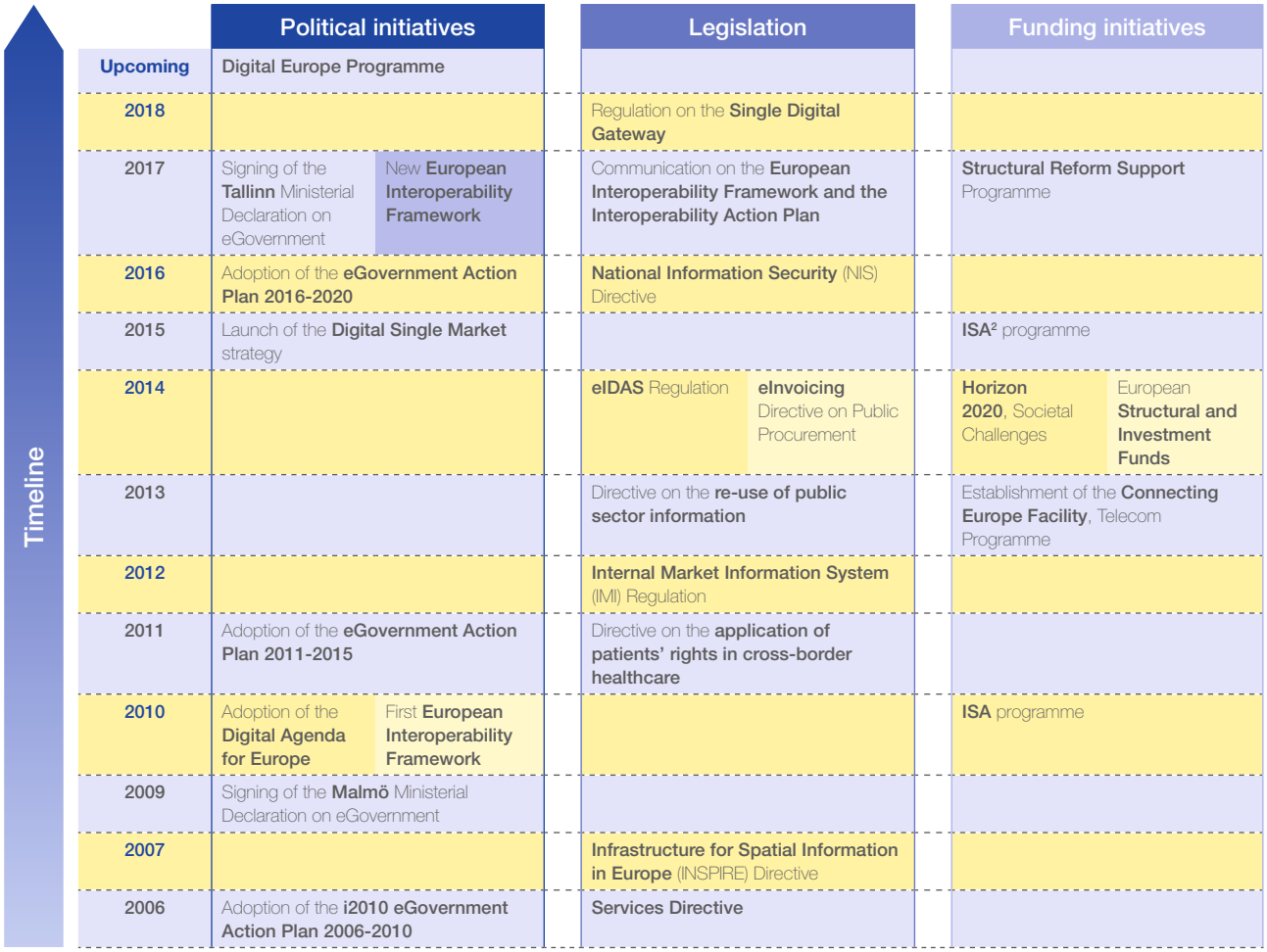
3. The role of the European Commission in the digital transformation of the public sector

The digital transformation of the public sector is one of the main priorities of the European Union. EU Member States have started implementing policies and taking direct actions towards developing eGovernment in the last decades, as specified in the previous sections. The European Commission announced its first eGovernment Action Plan[114], the i2020 initiative in 2006, which later contributed to the Lisbon Agenda enhancing the competitiveness of the EU's economy. Since then, the European Commission has further expanded the scope of its eGovernment strategies with numerous initiatives, such as the Digital Agenda for Europe (DAE) and Digital Single Market Strategy (DSM). At present, the Commission is exploring the effects new emerging technologies such as artificial intelligence and blockchain are having on the digitisation of governments and will play a fundamental role in the forthcoming Digital Europe Programme[115]. Below in **Figure 13** are three timelines that outline European Commission activities affecting digital transformation of the public sector. **Figure 13** shows the main political initiatives in the period 2006-2018, outlines the most important legislations that were adopted towards digital government, and, lastly, illustrates the EU's financial initiatives that all Member States could benefit from.

114 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - i2010 eGovernment Action Plan - Accelerating eGovernment in Europe for the Benefit of All, 25 April 2006, {SEC(2006) 511}.

115 Digital Europe Programme. European Commission Press Release, 6 June 2018.

Figure 13 Countries which made online public services accessible to businesses



Source: compilation made by Wavestone.

The political initiatives, legislations, and financial initiatives will be described in the following three sections below. Firstly, the beginning steps of the development of eGovernment before 2010. Second, the events under the Digital Agenda for Europe, ranging from 2010 to 2015. Third, the start of the Digital Single Market from 2015, an EU initiative which has greatly benefitted Member States through political incentives and legislation needed to advance the countries to achieve a full digital transformation in the public sector.

3.1. i2010 e-Government action plan: accelerating e-Government in Europe

In 2006, the European Commission published a political communication on the i2010 eGovernment Action Plan, with the aim to develop eGovernment in Europe[116]. The action plan was expected to promote effective public administrations to sustain a well-functioning European internal market benefitting all.

The action plan draws upon the 2005 Manchester Ministerial Declaration[117] which aimed to provide inclusive services to citizens (i); make government services more effective and efficient (ii); identify high impact European public services (iii) and guarantee a simple and secure access to online public services (iv). In addition to this, the action plan aimed at strengthening eParticipation and democratic decision-making as a fifth action in addition to the Declaration's priorities.

116 Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions - i2010 eGovernment Action Plan - Accelerating eGovernment in Europe for the Benefit of All, 25 April 2006, {SEC(2006) 511}.

117 Manchester Ministerial Declaration 2005. https://joinup.ec.europa.eu/document/eu-manchester-ministerial-declaration-2005

Only four years from the start of the i2010 Action Plan, the number of countries with eGovernment strategies/policies in place had more than doubled and has today reached 100% in Europe. Early on, Member States such as Sweden and Denmark took the lead in the United Nations eGovernment rankings in 2008, overtaking the United States[118]. Of the five above-mentioned priorities, the action plan had the greatest impact in promoting eGovernment strategies and policies in the different European countries, as well as providing citizens with secure access to online public services through the provision of building blocks (key enablers), such as eID, interoperability and open standards. With changes in societies and technology, the action plan has evolved to reflect these changes. The underlying ideas remained the same yet became more focused on user-centricity and empowering citizens and businesses.

Among the main financial instruments of i2010 and of the action plan, the ICT PSP (Information and Communication Technologies Policy Support Programme) 119 and the IDABC (Interoperable Delivery of European eGovernment Services to public Administrations, Businesses and Citizens)120 programmes played an important role.

The ICT PSP, which ran from 2007 until 2013, aimed at stimulating innovation and competitiveness through the wider uptake and best use of ICT by citizens, governments and businesses. This programme helped the launch cross-border eHealth services, whose pilot projects were launched thanks to ICT PSP[121].

The IDABC programme, which ran in the period 2004-2009, contributed to the i2010 initiative by financing the development of IT solutions, services, and studies, and acted as a forum where EU Member State countries could coordinate their eGovernment policies. In 2009, the IDABC was replaced by ISA (Interoperability Solutions for European Public Administrations)[122], and lasted until 2015, supporting primarily the implementation of the Digital Agenda for Europe. It focused on enabling a more strategic environment, better stakeholder communication tools and the development of monitoring methods[123].

The i2010 eGovernment Action Plan and the different initiatives were complemented by EU legal acts. As early as 2002, the Commission published a Directive on privacy and electronic communications.[124] The Directive's priorities related to digital government aimed to harmonise Member States' provisions to ensure the right to privacy. Furthermore, the Services Directive[125] of 2006 brought many benefits to businesses and consumers, which introduces the legal obligation to establish eGovernment services. It was useful in establishing all necessary electronic procedures in the Member States in connection with the commencement or exercising of a business service activity. Furthermore, Directive 2007/2/EC established an Infrastructure for Spatial Information in the European Community (INSPIRE)[126]. This Directive, aims to make European services more interoperable, by making spatial or geographical information more accessible. Today, the INSPIRE online forum is run by the Commission, allowing stakeholders to exchange knowledge.

---

118 i2010 eGovernment Action Plan Progress Study Summary Report, European Commission, November 2009.

119 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Towards interoperability for European public services, 16 December 2010, COM/2010/0744 final

120 Decision 2004/387/EC of the European Parliament and of the Council of 21 April 2004 on interoperable delivery of pan-European eGovernment services to public administrations, businesses and citizens (IDABC), OJ L 144, 30.4.2004 (see OJ L 181, 18.5.2004, p. 25).

121 CIP ICT PSP Final Evaluation. European Commission, 20 July 2011.

122 Decision No 922/2009/EC of the European Parliament and of the Council on interoperability solutions for European public administrations (ISA), OJ L 260, 3.10.2009, p. 20.

123 Communication from the Commission to the European Parliament and the Council Final evaluation of the implementation of the IDABC programme, 29 May 2009, COM(2009) 247 final.

124 Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

125 Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market.

126 Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).

3.2. Digital Agenda for Europe: effective eGovernment, interoperability & standards

The 2009 Ministerial Declaration on eGovernment in Malmö[127] paved the way to incrementing the digitisation of governments. As the political focus on digital government increased, the European Commission started to promote the development of Information and Communication Technologies (ICTs). In 2010, the European Council adopted Europe 2020 – A strategy for smart, sustainable and inclusive growth.[128] One of its flagship initiatives was the Digital Agenda for Europe (DAE) 2010-2020, which allowed the EU to take relevant actions within the framework of sectoral and horizontal policies related to the four freedoms of movement of goods, persons, services and capital, along with research and development. The DAE built upon wide public consultations that were launched by the European Commission and the European Parliament, which successfully engaged governments, businesses, and citizens.

The DAE is constituted of seven pillars, which were identified during the consultations as the most important problem areas, and all priorities have specific actions dedicated to them. These pillars are: the Digital Single Market; Interoperability and Standards; Trust and Security; Fast and ultra-fast Internet Access; Research and Innovation; Enhancing digital literacy, skills and inclusion; and ICT-enabled benefits for EU society. Supporting legislation planned for 2010 included the revision of the Directive on the re-use of Public Sector information[129], which entered into force in 2013; the revision of the Electronic Signatures Directive, which became the eIDAS Regulation[130] and repealed the former Directive in 2014. eIDAS stands for 'electronic identification, authentication and trust services'. The Regulation aims to increase trust in electronic transactions within the internal market. It establishes a common foundation for secure electronic interactions between citizens, businesses and public authorities, resolving the problem of Member States implementing the previous Directive in various ways.

The Regulation on the Internal Market Information System[131] was adopted in 2012. It is an online tool that facilitates the exchange of information between public authorities involved in the practical implementation of EU law. The system facilitates cross-border administrative cooperation obligations. There are pre-defined and pre-translated workflows, which means that the system's multilingual interface overcomes difficulties that arise when exchanging data cross-border. By the end of 2017, the total number of requests for information sent through the system exceeded 100,000, and over 8,000 authorities are registered in the system.

Along with the DAE, the European Commission adopted in 2010, the European eGovernment Action Plan 2011-2015.[132] Its four political priorities concerning the digitisation of European public administrations were based on the Malmö Ministerial Declaration. These are: Empower citizens and businesses; Reinforce mobility in the Single Market; Enable efficiency and effectiveness; Create the necessary key enablers and pre-conditions to promote digital government. Similarly to the i2010 Action Plan, the eGovernment Action Plan 2011-2015 was also successful, and had a positive impact on the development of eGovernment. As five years before, its biggest impact was in the harmonisation of national strategies and provision of interoperability solutions among the Member States.

---

127 Malmö Ministerial Declaration, 2009.

128 Communication from the Commission: EUROPE 2020 A strategy for smart, sustainable and inclusive growth, 3 March 2010, COM(2010) 2020 final, Brussels.

129 Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending Directive 2003/98/EC on the re-use of public sector information.

130 Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC.

131 Regulation (EU) No 1024/2012 of the European Parliament and of the Council of 25 October 2012 on administrative cooperation through the Internal Market Information System and repealing Commission Decision 2008/49/EC ('the IMI Regulation').

132 European eGovernment Action Plan 2011-2015.

In 2010, as an additional action towards fulfilling the Digital Agenda for Europe priorities, the European Commission put the European Interoperability Strategy (EIS) and the European Interoperability Framework (EIF) in place to promote interoperability among public administrations.[133] The European Commission was given the responsibility to identify existing gaps in national interoperability frameworks that might hinder cross-border cooperation. It is still successfully ensuring coordination through the ISA[2] programme, by developing and operating solutions for public administrations on the basis of citizens' and businesses' needs. Public administrations benefit from the EIF because it provides specific recommendations towards cooperation as well as sharing, exchanging and reusing information.

As part of the overall Digital Single Market strategy, the European Commission has also launched the Connecting Europe Facility[134] (CEF) programme, which is a key EU funding instrument, directing investment into European transport, energy and digital infrastructures. As part of this, CEF Digital funds a set of generic and reusable Digital Service Infrastructures (DSI), also known as building blocks, and cross-border digital infrastructures that aim improve all European citizens' daily lives. The building blocks are basic capabilities that can be reused in any project to facilitate the delivery of digital public services across borders and sectors. Currently, there are five building blocks: **eDelivery, eInvoicing, eID, eSignature** and **eTranslation**. Since the programme's launch in 2014, there

133 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Towards interoperability for European public services. 16 December 2010, COM/2010/0744 final.

134 Regulation (EU) No 1316/2013 of the European Parliament and of the Council of 11 December 2013 establishing the Connecting Europe Facility, amending Regulation (EU) No 913/2010 and repealing Regulations (EC) No 680/2007 and (EC) No 67/2010.

are multiple success stories in different policy areas such as Justice, Identity and Data. Through the funding (in the form of grants), Member States have been most successful in implementing and advancing the infrastructure and services they provide related to procurement, notably eInvoicing.

The European Commission launched the European Structural and Investments Funds[135] for the years 2014 through 2020, which includes five separate funds: the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund, the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF). The ERDF, ESF and the Cohesion Fund support 11 investment priorities or in other words thematic objectives (TOs). Directly related to eGovernment are TO2: enhancing access to, and use and quality of information and communication technologies (ICT) and TO11: enhancing institutional capacity of public authorities and stakeholders and efficient public administration. Digital growth is a necessity for public administrations to achieve, in order to provide good quality and interoperable ICT-enabled services.

With its fast and efficient development, the DAE started to focus on newer priorities. It initially focused on broadband and is now focusing on the creation of jobs, digital services and applications such as:

- eHealth with the adoption of the eHealth Action Plan 2012-2020[136];
- Accelerating cloud computing through the Commission Communication establishing the European Cloud Strategy[137];
- Launching the Cybersecurity strategy of the European Union in 2013[138];
- Standardising eInvoicing formats used across the EU through the Directive on eInvoicing in public procurement of 2014[139];
- Developing eSkills to create jobs with the new Skills Agenda for Europe[140].

Along the lines of the previous action plan, the third eGovernment Action Plan that started in 2016 is also prioritising the development of technological enablers to facilitate the access and use of public services, which should be possible throughout the whole of the European Union.

3.3. Digital Single Market Strategy for Europe: modernisation of the public sector by embracing new technologies

When Jean-Claude Juncker's Commission started its mandate in 2014, it made clear that one of its first priorities was the completion of the Digital Single Market in Europe – one of the pillars of the DAE. Connectivity will not only benefit citizens and businesses but will also generate a better economy for the European Union. The EU's mission to achieve the completion of the DSM includes legislative steps as well as boosting digital skills, for the advantage of people working in both the private and public sectors, as well as for the consumers of these services.

---

135 Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

136 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions eHealth Action Plan 2012-2020 - Innovative healthcare for the 21st century. 6 December 2012, COM(2012) 736 final.

137 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Unleashing the Potential of Cloud Computing in Europe. 27 September 2012, COM(2012) 529 final.

138 Joint Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of The Regions Cybersecurity Strategy of the European Union: An Open, Safe and Secure Cyberspace, 7 February 2013, JOIN(2013) 1 final.

139 Directive 2014/55/EU of the European Parliament and of the Council of 16 April 2014 on electronic invoicing in public procurement.

140 Communication from The Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions A New Skills Agenda for Europe Working together to strengthen human capital, employability and competitiveness. 10 June 2016, COM(2016) 381 final.

The DSM itself is built upon three pillars: Access – better access for consumers and businesses to digital goods and services across Europe; Environment – creating the right conditions and a level playing field for digital networks and innovative services to flourish; and the Economy & Society – maximising the growth potential of the digital economy. The digital transformation of the public sector falls in the latter pillar, where the Commission aims to ensure the free flow of non-personal data (notably by launching the European Cloud Initiative[141]) and building an inclusive digital society.[142]

Since 2015, the Commission has presented 35 legislative initiatives in the context of the DSM. Of these, 17 were agreed between the European institutions. Along with the legislative proposals, the Commission has also introduced several new plans such as the Digital Education Action Plan, the EU Blockchain Observatory, and guidelines for platforms to tackle illegal content.[143]

Looking beyond the second eGovernment Action Plan which came to an end in 2015, a new strategy was launched in 2016 and is running until 2020. The new e-Government action plan has three policy priorities: modernising public administrations using key digital enablers; enabling mobility of citizens and businesses through cross-border interoperability; and facilitating digital interaction between administrations and citizens/businesses for high-quality public services[144].

Since the start of the action plan, Member States showed an increased commitment by signing the Tallinn Ministerial Declaration on eGovernment in 2017, which will be running until 2022. The document outlines further objectives to be reached within public administrations as a complementary tool. These include, for example, the once-only and digital-by-default principles, and issues related to trustworthiness and security of people online and openness and transparency. The Ministerial Declaration outlines Member States' further actions, and puts user-centricity at the fore-front of how to deliver better digital public services.

The DSM has various actions outlined in its strategy. Interoperability, an important factor in digitising public administration, has been an important priority for the last decade. For this reason, the European Interoperability Framework[145] was updated in 2017.

Through interoperability, public administrations receive help when facing the challenges stemming from legal, organisational, semantic and technical aspects. The ISA² programme oversees the EIF as well as several other programmes related to boosting interoperability on both the EU and national levels. The European Commission, in turn, ensures appropriate governance of interoperability. It also oversees actions and general financial instruments, in addition to the targeted action under the EIF.

Cross-border interoperability is a political priority in European public service initiatives. It is important to get all countries to the same level, and ISA² has a variety of actions available to public administrations. The EIF aims to give countries specific recommendations based on their needs. ISA² continually consults involved stakeholders in order to better support public administrations in their digital transformation.[146]

---

141 https://ec.europa.eu/digital-single-market/en/cloud

142 https://ec.europa.eu/digital-single-market/en/economy-society

143 http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=47878

144 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions EU eGovernment Action Plan 2016-2020 Accelerating the digital transformation of government, 19 April 2016, COM/2016/0179 final.

145 Communication from the Commission to the European Parliament, the European Economic and Social Committee and the Committee of the Regions European Interoperability Framework, 23 March 2017, COM(2017) 134 final.

146 Commission Staff Working Document, Revision of the European Interoperability Framework – Synopsis report of the consultation activities, 23.3.2017, SWD(2017) 113 final.

One important action set out in the DSM is the launch of a new initiative with the Member States piloting the once-only principle. The 'Once-Only' Principle (TOOP) Project[147] was launched in January 2017 as a contribution to increasing the efficiency of the Digital Single Market. TOOP has three pilot projects in different areas: 1) cross-border eServices for business mobility; 2) updating connected company data; and 3) online ship and crew certificates to connect 60 information systems from at least 20 countries. The first area will benefit administrations and businesses in terms of increased transparency. In 2016, the Commission adopted a communication on ICT standardisation priorities for the Digital Single Market. The European Union is expanding its priorities in terms of digitisation of public administrations: it aims to include new standards in domains such as 5G, Internet of Things and Big Data.[148] With this political communication, the Commission established its role in supporting the funding and development of future ICT standards that are needed to further improve interoperability.

In order to improve the efficiency of the single market, in 2016, the European Commission presented its proposal for Regulation on the Single Digital Gateway[149], which was approved by the European Parliament in 2018. The Single Digital Gateway will help citizens and firms to access information and administrative procedures online, e.g. to apply for study loans or register a car. It will make it easier for citizens and business to do their frequently used and most important procedures online.

It complements the Once-Only Principle project, by providing one interface with centralised access where all information about rules and rights on buying products and services is available. It aims to be accessible to citizens from anywhere in Europe.

The sector of health is also important in terms of digital transformation within the Digital Single Market: new solutions are needed every day, in order to make systems more resilient, accessible and effective. For this reason, the European Commission published a Communication on eHealth in 2018.[150] This Communication also aims to improve cross-border interoperability. The effective share of health data relies on alike technologies across countries and are important for giving good care to patients. The Directive on patients' rights in cross-border healthcare[151] had already established the eHealth network to advance interoperability, nevertheless, more is needed to be done on the EU level in 2018, seven years since the Directive. Namely, the secure sharing of patients' data, digital tools for person-centred care, and better data to advance research.

As a lever for public and private organisations strengthen citizens' trust, the General Data Protection Regulation (GDPR)[152] is one of the most important achievements of the current Commission in furthering the Digital Single Market. It took four years of preparation and debate before the Regulation was approved by the European Parliament in 2016, replacing the Data Protection Directive 95/46/EC. The enforcement date for Member States was the 25 May 2018. The GDPR does not only apply to EU members, but also any company that holds the data of citizens that reside within

147 http://www.toop.eu/

148 Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on ICT Standardisation Priorities for the Digital Single Market, 19 April 2016, COM(2016) 176 final.

149 Regulation (EU) 2018/1724 of the European Parliament and of the Council of 2 October 2018 establishing a Single Digital Gateway to provide access to information, to procedures and to assistance and problem-solving services and amending Regulation (EU) No 1024/2012.

150 Communication from the Commission to the European Parliament, the European Economic and Social Committee and the Committee of the Regions on enabling the digital transformation of health and care in the Digital Single Market: empowering citizens and building a healthier society, 25 April 2018, COM(2018) 233 final.

151 Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare.

152 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

the EU – meaning that in the midst of distrust caused by privacy issues on social networking sites[153], citizens now have more transparency on what really happens with their data. The public sector is especially vulnerable, as it deals with sensitive data on a large scale. The Regulation should push the government and its different agencies to better coordinate their internal functions and share data more efficiently. There are several provisions that are very relevant for public sector bodies, such as the appointment of a data protection officer (DPO), and data portability.

While the GDPR was receiving attention for its transposition deadline, in the same month, the Directive on security of network and information systems (NIS Directive)[154] also had to be implemented into national law in May 2018. The Directive provides legal measures to boost the overall level of cybersecurity in the EU. The Directive affects wide-ranging sectors, both private and public. In order to make implementation by Member States faster, the Commission has adopted a Communication on NIS that provides information, guidance and recommendations[155].

To conclude, the GDPR and NIS Directive for example are two strategically important pieces of legislation whose implementation is already considered as great achievement for the European Union, along with the total of 35 existing legislative proposals under the Digital Single Market. The areas in which there is still need for further progress relate to developing the European Data Economy, tackling cybersecurity challenges, and promoting online platforms.[156]

153 E.g.: Facebook is required to add more privacy controls and better explain how and why it collects user data.

154 Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union.

155 Communication from the Commission to the European Parliament and the Council Making the most of NIS – towards the effective implementation of Directive (EU) 2016/1148 concerning measures for a high common level of security of network and information systems across the Union. COM/2017/0476 final.

156 Digital Single Market: Commission calls for swift adoption of key proposals and maps out challenges ahead. European Commission Press Release, 10 May 2017.

04

The way forward

4. The way forward

The eGovernment factsheet 10 year anniversary report aimed to shed light and celebrate the achievements of European public administrations and the European Commission in terms of digital transformation of the public sector from 2008 to 2018. As illustrated by the report, the development of eGovernment in the last ten years was successful in all countries throughout Europe. All countries have adopted supporting strategies, action plans, or initiatives and when necessary updated its legislative frameworks to support the implementation of new policies in this area. All countries have dedicated actors that are responsible for overseen and coordinating efforts to implement the foreseen reforms. Most importantly, all European public administrations have implemented underpinning eGovernment infrastructure, such as eInvoicing, eProcurement, eID, or eDelivery. Furthermore, citizens and businesses across Europe are now benefiting from new digital public services from car registration to finding and applying for a job. All European public administrations have also dedicated efforts to implement various principles decided together at the European-level that eases people's lives, such as uploading personal information and documents once only.

It is important to recognise the role that the European Commission has been playing in pushing the Member States towards digital transformation. As early as 2006, the European Commission implemented the i2010 eGovernment Action Plan. The Commission realised the benefits that digitisation can bring to societies, and highlighted the best practices in its Communication. After its successful review in 2010, two following eGovernment strategies were implemented (the latest, Digital Single Market strategy is still ongoing), along with ministerial declarations, frameworks, funding initiatives and legislation in the form of Directives and Regulations. With the adoption of the European Interoperability Framework earlier in 2017, the European Commission, in collaboration with the Member States is directing efforts to start monitoring its implementation. Throughout the years, the focus on digitising the public administrations kept expanding. More and more legislative initiatives were presented in several domains, especially towards enhancing interoperability, cross-border services and security.

When it comes to further digital transformation of public administrations, the future of Europe looks ambitious. In 2021 the European Commission will adopt a new Multi-Annual Financial Framework (MFF), which will have a large budget dedicated to digital transformation. More specifically, the European Commission is planning to launch a Digital Europe programme. The European Commission currently plans to dedicate a budget of EUR 9.2 billion to the programme. It will be distributed among five key priorities: high performance computing (EUR 2.7bn); artificial intelligence (EUR 2.5bn); cybersecurity & trust (EUR 2bn); digital transformation & interoperability (EUR 1.3bn); and advanced digital skills (EUR 0.7bn). The digital transformation & interoperability strand of the Digital Europe programme, in particular, will continue the efforts of ISA[2] programme in driving forward the digital transformation of European public administrations. The future of the digital transformation of the public sector will build upon the Digital Single Market strategy – so far successful in terms of strategy and legislation. To reinforce the existing achievements, investment will turn to new challenges that Europe is facing in order to strengthen the competitiveness of the EU. As said by Mariya Gabriel, Commissioner for the Digital Economy and Society: *"Having the first pan-European digital programme is a major step for strengthening Europe's world leadership in the digital transformation. We will invest in key strategic digital capacities, […], European citizens will stay at the heart of this programme."*

An action supported by ISA²

ISA² is a EUR 131 million programme of the European Commission which develops digital solutions that enable interoperable cross-border and cross-sector public services, for the benefit of public administrations, businesses and citizens across the EU.

ISA² supports a wide range of activities and solutions, among which is the National Interoperability Framework Observatory (NIFO) action.

ISA² solutions can be used free of charge and are open source when related to IT.

More on the programme

ec.europa.eu/isa2

Contact ISA²

isa2@ec.europa.eu

Follow us:

@EU_ISA2
@Joinup_eu

ISA² programme