



The Role of Digital Government in the European Semester process 2018

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Table of Contents

LIST OF ACRONYMS	4
EXECUTIVE SUMMARY	5
INTRODUCTION	7
1. CONTEXT AND BACKGROUND	8
2. METHODOLOGY	12
2.1 RESEARCH QUESTIONS AND SCOPE OF THE STUDY	12
2.2 OVERALL METHODOLOGICAL FRAMEWORK.....	13
3. COUNTRY ANALYSIS	17
3.1 AUSTRIA.....	19
3.2 BELGIUM	23
3.3 BULGARIA.....	29
3.4 CROATIA	35
3.5 CYPRUS	42
3.6 CZECH REPUBLIC.....	49
3.7 DENMARK.....	56
3.8 ESTONIA.....	59
3.9 FINLAND	63
3.10 FRANCE.....	67
3.11 GERMANY.....	71
3.12 GREECE	76
3.13 HUNGARY	80
3.14 IRELAND	86
3.15 ITALY.....	90
3.16 LATVIA	97
3.17 LITHUANIA	104
3.18 LUXEMBOURG.....	109
3.19 MALTA.....	113
3.20 NETHERLANDS.....	120
3.21 POLAND	123
3.22 PORTUGAL	129
3.23 ROMANIA.....	135
3.24 SLOVAKIA	142
3.25 SLOVENIA.....	147
3.26 SPAIN.....	152
3.27 SWEDEN.....	158
3.28 UNITED KINGDOM	161
4. FINDINGS SYNTHESIS AND ANALYSIS	164

4.1	SOCIO-ECONOMIC OUTLOOK	165
4.2	DIGITAL GOVERNMENT OUTLOOK	168
4.3	COUNTRY SPECIFIC RECOMMENDATIONS - KEY FINDINGS	174
4.4	NATIONAL REFORM PROGRAMMES – KEY FINDINGS.....	183
4.5	OPERATIONAL PROGRAMMES – KEY FINDINGS.....	191
5.	CONCLUSIONS AND RECOMMENDATIONS	199
ANNEX 1.	DEFINITIONS	203

Table of Tables

Table 1.	Socio-economic challenges of EU Member States according to the CSRs	165
Table 2.	2018 CSRs thematic overview	177
Table 3.	2018 NRPs thematic overview	184
Table 4.	2018 OPs thematic overview	192

Table of Figures

Figure 1.	The European Semester timeline	11
Figure 2.	Overall methodological framework	13
Figure 3	Thematic classification of the socio-economic outlook.....	13
Figure 4.	Identified themes under TO2 and TO11	15
Figure 5.	Member States within the scope of the study	17
Figure 6.	Digital government outlook: Strategy	168
Figure 7.	Digital government outlook: Organisational Change	169
Figure 8.	Digital government outlook: Legal Framework	170
Figure 9.	Digital government outlook: Infrastructure	171
Figure 10.	Digital government outlook: Services.....	172
Figure 11.	Member States receiving a country-specific recommendation	175
Figure 12.	Top three themes identified in the CSRs under TO2 and TO11	182
Figure 13.	Top three themes identified in the NRPs under TO2 and TO11.....	190
Figure 14.	Top three themes identified in the OPs under TO2 and TO11	198

List of Acronyms

AGS: Annual Growth Survey

AI: Artificial Intelligence

CEF: Connecting Europe Facility

CSR: Country Specific Recommendation

eIDAS: EU Regulation on electronic identification and trust services for electronic transactions in the internal market

ESIF: European Structural and Investment Funds

ESM: European Stability Mechanism

GDP: Gross Domestic Product

GDPR: General Data Protection Regulation

ICT: Information and Communication Technology

NRP: National Reform Programme

OP: Operational Programme

PPP: Public Private Partnership

PPS: Purchasing Power Standard

SMEs: Small- and Medium-sized Enterprises

TO: Thematic Objective

Executive Summary

Modern and efficient public administrations are necessary to ensure fast and high-quality services for firms and citizens. This, in turn, may lead to more efficient public spending and increase the focus on measures reinforcing economic growth. In this context, the use of ICT and the deployment of digital public services are instrumental to both achieving efficiency gains and reducing costs.

Country Specific Recommendations (CSRs) and National Reform Programmes (NRPs) are essential instruments to set and implement the reform priorities of each Member State. EU financial instruments like the European Structural and Investments Funds (ESIF)¹ provide resources that can be used to address these priorities and increase the quality and efficiency of state administrations through the modernisation of their operations and procedures, as well as deployment of digital public services. ESIF builds around 11 thematic objectives, which describe the main funding priorities that Member States can address through these funds. In particular, for the purpose of this study, we focus on thematic objective 2 (TO2 Enhancing access to and use and quality of information and communication technologies) and 11 (Enhancing institutional capacity of public authorities and stakeholders and efficient public administration). Access and utilisation of these funds can be discerned in the Operational Programmes (OPs) of the Member States, which frame the funding opportunities in support of investments in jobs and growth and thus contributing to the EU political priorities, the structural reforms recommended in the CSRs and then addressed in the NRPs.

The study aims to collect all data relevant to digital government² in the European Semester process, which is set up to monitor and coordinate the macroeconomic governance at the European level.

In order to provide DG DIGIT with the necessary information to achieve this goal, the study builds around the following research questions:

- **RQ1** – How do the CSRs, NRPs and OPs tackle digital government in the context of TO2 and TO11?
- **RQ2** – Based on the CSRs, NRPs and OPs analysed, are there any common elements?
- **RQ3** – Based on the CSRs, NRPs and OPs analysed, what are the main challenges still faced by the Member States in the context of TO2 and TO11?
- **RQ4** – Based on the finding of our analysis, how can the Commission better support Member States in their public administration digitalisation efforts, also in term of synergies with other Commission initiatives?

To this end, the 2018 CSRs and NRPs, as well as the OPs for the programming period 2014-2020 of the 28 Member States will be analysed through the lenses of ESIF Thematic Objective 2 (Enhancing access to, and use and quality of, information and communication technologies) and 11 (Improving the

¹ The European Structural and Investment Funds (ESIF) are composed of the European Regional Development Fund (ERDF), the European Social Fund (ESF), the Cohesion Fund (CF), the European Agricultural Fund for Rural Development (EAFRD) and the European Maritime and Fisheries Fund (EMFF).

² OECD (2018). *Digital Government*. Accessed on 7 December 2018. Available at: <http://www.oecd.org/gov/digital-government/>

efficiency of public administration). Based on the findings, the study identifies potential actions and new activities within the scope of the ISA² programme.

The methodological approach adopted in the study envisages three main phases: (I) content analysis, (II) synthesis, (III) conclusions and recommendations. In the first phase, we analyse the 2018 CSRs and NRPs, as well as the OPs for the programming period 2014-2020, to investigate the role of digital government in the context of ESIF TO2 and TO11 within the framework of the 2018 European Semester process in order to provide an answer to RQ 1. We also provide an analysis of the socio-economic outlook of the Member States (derived from the 2018 CSRs) and of their most recent developments in the digital government domain (derived from the 2018 eGovernment Factsheets) since they give the state of play in which the different recommendations and priorities are set.

After the content analysis, the study proceeds with the synthesis of the findings provided in the first phase. Additionally, we perform a comparative analysis of the countries to identify commonalities between the country documents and understand what challenges Member States continue to face when using ICT for public administration modernisation (RQ 2 and RQ3).

Finally, based on how the European Semester documents address the topic of digital government in relation to TO2 and TO11 and as an answer to RQ4, conclusions and recommendations for the Commission are provided. The proposed recommendations are addressed to the European Commission, with a particular focus on the ISA² programme. These also highlight possible business opportunities for DG DIGIT by investigating how ISA² solutions could help in addressing different challenges in the Member States. In this regard, five recommendations have been identified:

- Recommendation 1 stresses the fact that the Commission could more closely support all those Member States that are implementing or are planning to implement strategies, action plans or frameworks to enhance digital government within their country.
- Recommendation 2 stresses that the Interoperability Unit could support Member States to enhance the digital skills of the civil servants for a better service delivery, given that the lack of in-house skills represents a barrier to an efficient implementation of digital government.
- Recommendation 3 mentions that the Interoperability Unit could engage more closely with policy DGs and their Agencies, being active in all stages of the EU policy cycle, providing advice and monitoring that ICT solutions supporting specific sectors are aligned with the EIF principles.
- Recommendation 4 highlights that, although offering reusable digital solutions to Member States is an essential element for supporting them in their digital government reforms, the Commission could place more emphasis on integrating public service governance.
- Recommendation 5 calls on the Interoperability Unit to collaborate with policy DGs in their efforts to support Member States which want to make a more efficient and effective use of eProcurement tools for both the public administration and businesses.

Introduction

Following the mandate from the European Commission Directorate-General for Informatics (DG DIGIT), Wavestone was requested to examine how and to what extent the **European Semester Process** addresses topics in the digital government field falling under the European Social and Investment Funds' (ESIF)³ Thematic Objective 2 (TO2, Enhancing access to, and use and quality of, information and communication technologies) and 11 (TO11, Improving the efficiency of public administration). In order to accomplish this task, an in-depth analysis of the key documents from the European Semester is performed.

The European Semester is a cycle of economic and fiscal policy coordination which was established in 2010 in order to prevent discrepancies and contribute to ensuring convergence and stability across the EU. Each year, the European Commission analyses in detail Member States' economic and structural reforms programmes and provides them with a set of recommendations for the following 12-18 months. During this time, Member States have to align their budgetary and economic policies with the objectives and rules agreed at EU level, both in terms of the Europe 2020 Strategy and of the Stability and Growth Pact⁴.

Within this study, the European Semester documents referred to are the **2018 Country Specific Recommendations (CSRs)**, the **2018 National Reform Programmes (NRPs)**, as well as the **Operational Programmes (OPs)** for the programming period 2014–2020, which are financed through ESIF.

The study will cover all 28 EU Member States: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Building on the results of the in-depth content analysis, the study aims to identify links between the existing actions from the **ISA² programme⁵** and current challenges faced by the Member States, as well as propose new actions to better support them in their digitalisation efforts.

The report comprises the following main sections:

- **Section 1 Context and Background:** setting the political and economic context of the study.
- **Section 2 Methodology:** describing the methodology used to conduct the study.
- **Section 3 Country Analysis:** providing a detailed analysis of the European Semester documents related to each Member State.
- **Section 4 Findings synthesis and analysis:** providing the synthesis and analysis of the key findings of the study.
- **Section 5 Conclusions and Recommendations:** providing the main insights of the study, as well as our recommendations.

³ European Commission (n.d.). *European Structural and Investment Funds*. Accessed on 10 December 2018. Available at: https://ec.europa.eu/info/funding-tenders/funding-opportunities/funding-programmes/overview-funding-programmes/european-structural-and-investment-funds_en

⁴ European Council (2018). *How the European Semester works*. Accessed on 10 December 2018. Available at: <https://www.consilium.europa.eu/en/policies/european-semester/how-european-semester-works/>

⁵ European Commission (2018). *About ISA²*. Accessed on 10 December 2018. Available at: https://ec.europa.eu/isa2/isa2_en

1. Context and Background

One of today's most challenging goals for the European Union is represented by the accomplishment of the digitalisation of public administration. Digitalisation and modernisation of public administration is an increasing priority among European Member States as it is crucial to respond to evolving citizens' needs and expectations of how public administrations should look like and the services they should deliver. As stressed by the European Parliament in its May 2017 resolution,⁶ the digitalisation of public administrations shall aim to 'promote better exercise of citizenship, improve the quality of life for citizens and the social and economic development of the regions, enhance citizens' understanding of and involvement in public services, while improving their efficiency and cost effectiveness. Moreover, citizens should also benefit from enhanced communication channels with public authorities and increased transparency, which shall eventually contribute to raising participation in the democratic process and in policy-shaping. In this regard, digital public services should be designed and developed according to a user-centric approach and should consider citizens' main life events, as specified in the Single Digital Gateway initiative.⁷

However, the availability of digital public services, through eGovernment portals, is not sufficient to meet the growing needs and the higher demands of both citizens and businesses. Consequently, in the last years, there has been a shift from the concept of eGovernment to a broader vision calling for the development of *digital government*. According to the OECD, "digital government explores how governments can best use Information and Communication Technologies (ICTs) to embrace good government principles and achieve policy goals."⁸ This is achieved through the "use of digital technologies as an integrated part of governments' modernisation strategies, to create public value. It relies on a digital government ecosystem comprised of civil servants, businesses, citizens' associations and individuals which supports the production of and access to data, services and content through interactions with the public organisations."⁹ Apart from being digital, therefore, public administrations need to be innovative when it comes to processes, governance, and skills. In order to do that, governments need to harness the potential derived from the advanced use of ICT, geospatial data and the emerging technologies, in particular Artificial Intelligence (AI) and blockchain. Despite that, today, Member States are still facing some challenges when it comes to modernising their administrations at all levels.

To tackle these challenges the European Union has been heavily investing in modernising public administrations in Europe, thus, complementing Member States' actions through several funding instruments, and especially the following ones:

⁶ 2016/2273(INI), European Parliament resolution of 16 May 2017 on the EU eGovernment Action Plan 2016-2020. 2016/2273(INI), European Parliament resolution of 16 May 2017 on the EU eGovernment Action Plan 2016-2020 European Parliament resolution of 16 May 2017 on the EU eGovernment Action Plan 2016-2020.

⁷ COM(2017) 256 final, Proposal for a Regulation of the European Parliament and of the Council on establishing a single digital gateway to provide information, procedures, assistance and problem solving services and amending Regulation (EU) No 1024/2012, Brussels, 2.5.2017.

⁸ OECD (2018). *Digital Government*. Accessed on 7 December 2018. Available at: <http://www.oecd.org/gov/digital-government/>.

⁹ OECD/LEGAL/0406, Recommendation of the Council on Digital Government Strategies, 15.7.2014.

- **ISA² programme**,¹⁰ adopted in 2015, builds strongly on its predecessor, ISA,¹¹ which provided a framework that allowed Member States to work together to create efficient and effective electronic cross-border public services, while bringing also new elements such as a focus on interaction with businesses and citizens.
- **Connecting Europe Facility (CEF) Telecom**¹² supports the deployment and use of key cross-border digital services such as electronic identification and procurement.
- **European Structural and Investment Funds (ESIF)**¹³ can support actions related to the development of ICT products and services¹⁴ and those related to strengthen the institutional capacity and efficiency of public administrations¹⁵.
- **Horizon 2020**, Societal Challenges 6 'Europe in a changing world' work programme¹⁶ directly addresses problems related to the eGovernment and the modernisation of the public administrations.
- **Structural Reform Support Programme**¹⁷ aims to strengthen the overall capacity of the Member States to prepare and implement growth-enhancing institutional, structural and administrative reforms in five main reform areas. eGovernment stands out as one of the priorities for the 'Governance and public administration' area.
- **Digital Europe Programme**¹⁸ was proposed in the framework of the 2021-2027 Multiannual Financial Framework.¹⁹ The programme will boost frontline investments in supercomputing, artificial intelligence, cybersecurity and advanced digital skills. The €9.2 billion budget is distributed among these priority areas.

Given this context, the study's main goal is to assess how issues related to digital government are addressed in the European Semester process and, in particular, recognise any relevant links between the ISA² programme's priorities and actions and the content of European Semester documents of the 28 Member States.

The European Semester

Each year, under the framework of the Europe 2020 strategy, all Member States are subject to a system of economic monitoring and governance known as the European Semester.²⁰ The role the

¹⁰ Decision (EU) 2015/2240 of the European Parliament and of the Council of 25 November 2015 establishing a programme on interoperability solutions and common frameworks for European public administrations, businesses and citizens (ISA² programme) as a means for modernising the public sector.

¹¹ Decision No 922/2009/EC of the European Parliament and of the Council of 16 September 2009 on interoperability solutions for European public administrations (ISA).

¹² 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.

¹³ 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.

¹⁴ 'Enhancing access to, and use and quality of information and communication technologies (ICT)', Thematic Objective 2 of ESIF.

¹⁵ 'Enhancing institutional capacity of public authorities and stakeholders and efficient public administration', Thematic Objective 11 of ESIF.

¹⁶ European Commission Decision C(2018)4708 of 24 July 2018 on Horizon 2020, Work Programme 2018-2020, Europe in a changing world – Inclusive, innovative and reflective societies.

¹⁷ Regulation (EU) 2017/825 of the European Parliament and of the Council of 17 May 2017 on the establishment of the Structural Reform Support Programme for the period 2017 to 2020 and amending Regulations (EU) No 1303/2013 and (EU) No 1305/2013.

¹⁸ COM/2018/434 final – 2018/0227 (COD), Proposal for a Regulation of the European Parliament and of the Council establishing the Digital Europe programme for the period 2021-2027.

¹⁹ COM/2018/322 final – 2018/0132 (APP), Proposal for a Council Regulation laying down the multiannual financial framework for the years for the years 2021 to 2027.

²⁰ European Commission (n.d.) *European Semester Timeline*. Accessed on 8 October 2018. Available at: https://ec.europa.eu/info/strategy/european-semester/european-semester-timeline_en

European Commission in this process is to carry out an analysis of each Member State's budgetary plans, macroeconomic and structural reforms and monitor their efforts towards the Europe 2020 targets. As part of the process, in April, each government presents its annual NRP, outlining the country's policies and measures to achieve its growth targets but also the Europe 2020 targets.

After receiving and reviewing each NRP, as well as taking into account other documents like AGS and the Country Reports, in May, the European Commission issues CSRs to each Member State, which are endorsed by the Council between June and July. The CSRs summarise the progress made by Member States over the last year and recommend the structural reforms that each Member State should carry out over the next 12-18 months. A more detailed description of the European Semester process is offered in Box 1 below.

To sustain the implementation of Member States' NRPs, and thus fulfil the Europe 2020 strategy objectives, specific OPs are signed by Member States to receive funding for investment initiatives. Funding is allocated to OPs within the framework of European Structural and Investment Funds (ESIF), which support 11 investment priorities, also known as thematic objectives (TO). Two TOs in particular relate to digital government aspects: **TO2 – 'Enhancing access to and use of and quality of ICT'**²¹ and **TO11 – 'Enhancing institutional capacity of public authorities, stakeholders and efficient public administration'**.²² For this study, an in-depth content analysis of the European Semester documents will be conducted through the prism of these ESIF TOs.

²¹ Huckfield, L. (2012). *Thematic Objectives for EU Funds 2014 – 2020*. Accessed on 8 October 2018. Available at: <http://www.huckfield.com/wp-content/uploads/2012/11/12-EU-Funds-Thematic-Objectives-N03.pdf>

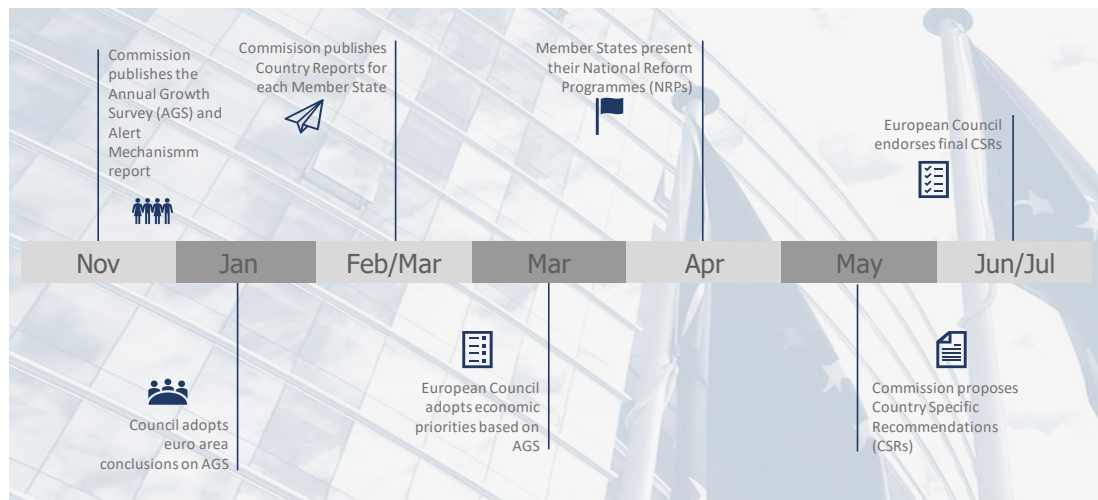
²² As stipulated in Article 9 of the Common Provisions Regulation, each of the five ESIF (ERDF, ESF, CF, EAFRD and EMFF) support different thematic objectives in accordance to its mission, in order to contribute to the Union strategy for smart sustainable and inclusive growth.

Box 1 The European Semester

Introduced in 2010 as a way to prevent discrepancies and contribute to ensuring convergence and stability in the EU, the **European Semester** is a cycle of economic and fiscal policy coordination within the EU. The Semester, which focuses on the 6-month period from the beginning of the year, aims therefore to help Member States aligning their budgetary and economic policies with the objectives and rules agreed at the EU level.

The European Semester has a clear timetable, according to which Member States receive EU-level advice and then submit their policy plans to be assessed at EU level. **Figure 1** below shows the main steps of the process.

Figure 1. The European Semester timeline



Source: The European Semester timeline summarised by Wavestone, Dec 2018. The figure presents the main process and the key documents of the European Semester, with key milestones. The Operational Programmes are not included in the timeline since they have been adopted by the Member States in 2014 and contain detailed projects until 2020.
Note: Further information available here.

The preparatory phase of the European Semester starts in November with the publication of the **Annual Growth Survey (AGS)**, where the European Commission sets out the key economic and social priorities for the year to come, as well as the **Alert Mechanism report**, which assesses the macroeconomic development of the Member States. In case of risk of potential macroeconomic imbalances, the Commission can submit policy recommendations to the Member States. Following that, the Council sets out overall policy guidelines and adopts conclusions.

Subsequently, in February, the Commission publishes the **Country reports**, which identify any progress made by the Member States in addressing the previous year's EU recommendations. In March, the European Council endorses the policy priorities for the year based on the AGS and the Council conclusions.

Between March and April, Member States submit their policy plans, i.e. their **NRPs**, along with the Stability and Convergence programmes. Finally, in May, the Commission evaluates national policy plans and presents each country with a set of draft **CSRs**, which are then formally adopted by the Council of the EU and finally endorsed by the European Council. The recommendations focus on what can realistically be achieved over the next 12-18 months.

During the remaining 6 months of the year, sometimes called 'the national semester', the Member States take into account the recommendations when drawing up national budgets for the following year, which shall be submitted to the Commission by mid-October.

2. Methodology

This chapter aims to present the methodological approach taken to conduct the study. Section 2.1 provides an overview of the scope of the study and the research questions that it aims to answer. Sections 2.2 provides a description of the overall methodological framework employed to answer the research questions through a three-step approach.

2.1 Research questions and scope of the study

The purpose of this study is twofold: on the one hand, it aims to identify the role of digital government in the context of ESIF TO2 and TO11 within the framework of the 2018 European Semester process. On the other, it intends to identify links between the existing actions of the ISA² programme and the current needs of the Member States, as well as to propose further initiatives within the scope of the ISA² programme.²³

The study intends to better understand how digital government reforms related to ESIF TO2 and TO11 are addressed in Member States' CSRs, NRPs and OPs, while at the same time identify the main challenges the different countries are still facing to better support them through the ISA² programme of DG DIGIT. In order to provide DG DIGIT with the necessary information to achieve this goal, the study builds around the following research questions:

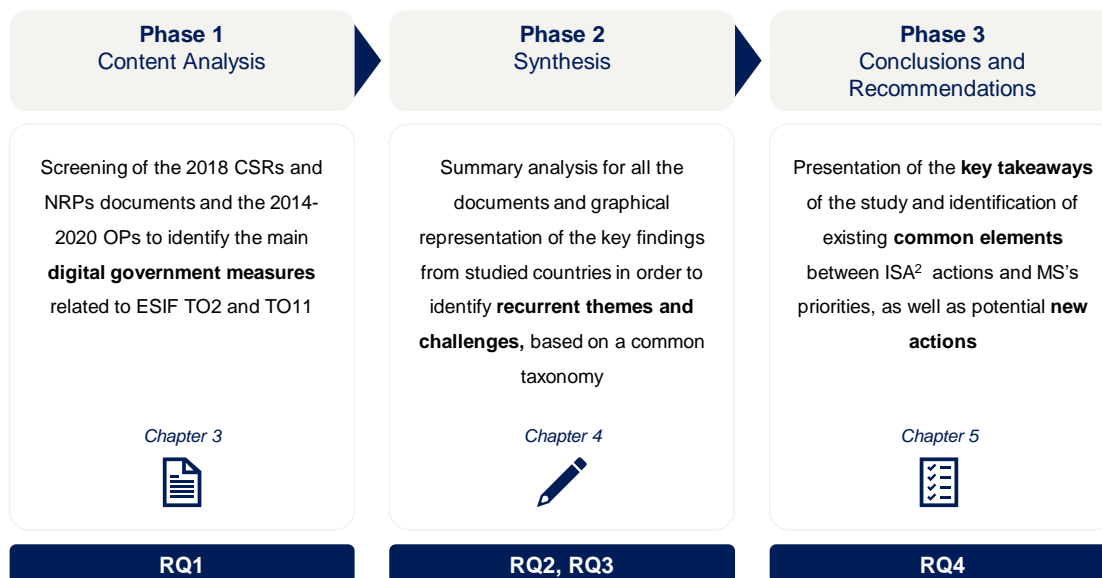
- **RQ1** – How do the CSRs, NRPs and OPs tackle digital government in the context of TO2 and TO11?
- **RQ2** – Based on the CSRs, NRPs and OPs analysed, are there any common elements?
- **RQ3** – Based on the CSRs, NRPs and OPs analysed, what are the main challenges still faced by the Member States in the context of TO2 and TO11?
- **RQ4** – Based on the finding of our analysis, how can the Commission better support Member States in their public administration digitalisation efforts, also in terms of synergies with other Commission initiatives?

²³ European Commission (2018). *About ISA²*. Accessed on 10 December 2018. Available at: https://ec.europa.eu/isa2/isa2_en

2.2 Overall methodological framework

The methodological approach taken to conduct this study was designed to provide answers to the research questions in a structured way. It comprises three phases, shown in Figure 2.

Figure 2. Overall methodological framework



Source: The overall methodological framework of the study summarised by Wavestone, Dec 2018.

2.2.1 Phase 1: Content Analysis

The sources that underpin the research done in this study in chapter 3 contain the following documents:

(I) **CSRs** - CSRs issued by the European Commission in 2018 were first used to shape the **socio-economic outlook** for the countries. To categorise the socio-economic outlook, the information was bundled according to the themes listed in Figure 3.

Figure 3 Thematic classification of the socio-economic outlook

	Administrative and regulatory barriers		Labour market
	Business environment		Pension system
	Education		Public spending
	Fiscal Framework		Research and innovation
	Healthcare		Social inclusion
	Housing market		Tax system
	Justice system		

Furthermore, the CSRs are further analysed to give a comprehensive analysis on all the **recommendations** related to TO2 and TO11 contained in them. While analysing the CSRs, relevant themes other than *recommendations* were identified in the document's recitals section (classified as *recitals*) since they represent actual challenges present in the Member State that are likely to be solved with the help of ICT tools. More general possibilities for the application of ICT tools identified by the

team who performed the study throughout the whole document were also included as *opportunities* in the digital government domain.

(II) eGovernment Factsheets - To describe the digital government outlook for all the Member States, the study relied on the 2018 eGovernment factsheets. An overview of the relevant strategies, legal framework, organisational changes, infrastructure, services and other highlights of Member States is provided.

(III) NRPs – Every year, NRPs are presented by the Member States to the Commission to indicate the concrete plans of the country to comply with the yearly CSRs. Within these programmes, we collected and categorised all the information related to **digital government reforms** related to TO2 and TO11.

(IV) OPs - The OPs are detailed plans in which the Member States set out how funds from the ESIF will be spent during the programming period 2014-2020, tackling various thematic objectives. While OPs can be oriented towards regional, multi-regional, national and transnational ambitions, the scope of this study is limited to the analysis of the national OPs covering TO2 and TO11. The overview of the OPs is organised in the same way as the NRPs, thus looking at **funding priorities** in the scope of TO2 and TO11.

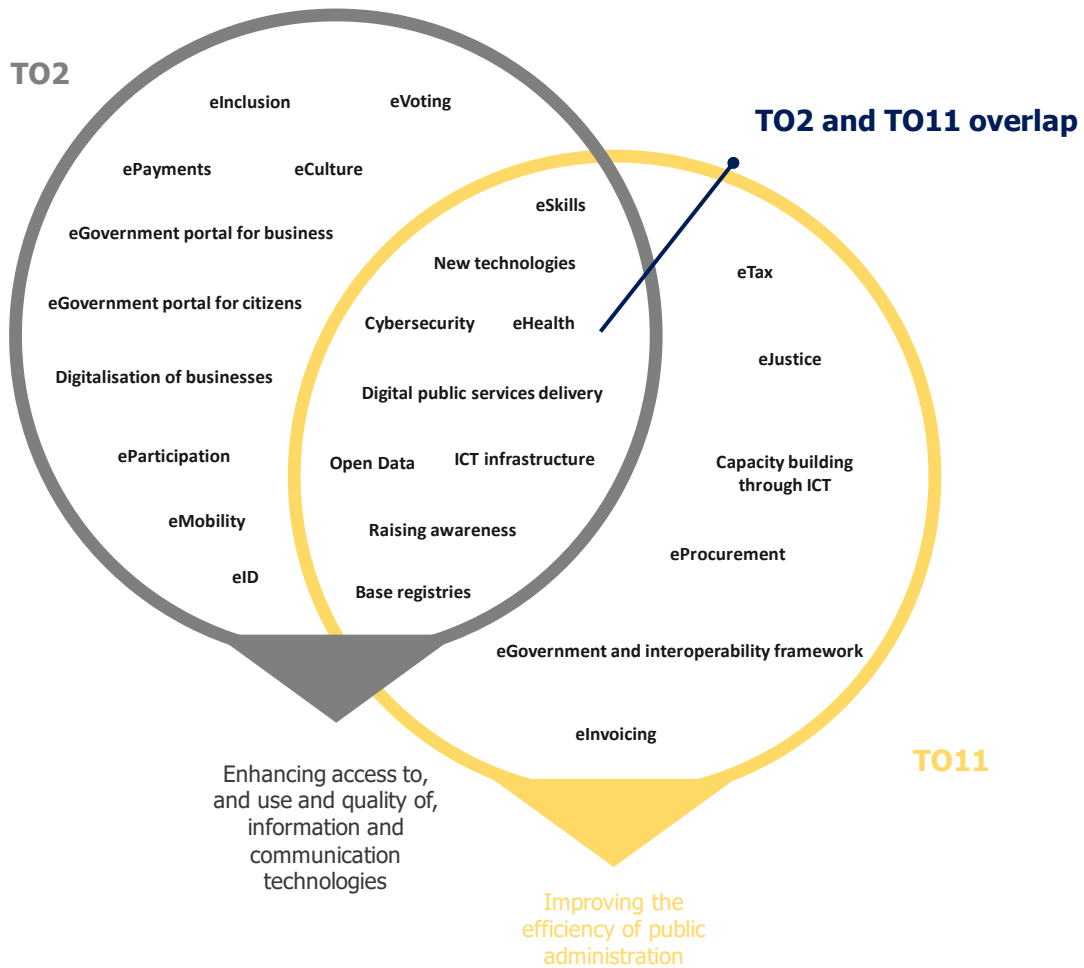
All relevant aspects related to digital government contained in the CSRs, NRPs and OPs are clustered according to the themes presented in Box 2. The definitions of the themes used for the purpose of this study are listed in Annex 1. Definitions. These themes are built upon the European Semester analysis performed in the previous year.²⁴

²⁴ European Commission (2018). *The role of eGovernment and interoperability in the European Semester process*. Accessed on 7 December 2018. Available at: <https://publications.europa.eu/s/jMBt>

Box 2 ESIF Thematic Objective 2 and 11

For the purpose of this study, recommendations, reforms and funding priorities related to ESIF TO2 (Enhancing access to, and use and quality of, information and communication technologies) and TO11 (Improving the efficiency of public administration) are considered. The decision to consider the two TOs at the same time stems from the fact that many of the interventions identified in the analysed documents require digitalisation (seen as falling under TO2) as a precondition. On the other hand, however, the technological and infrastructural interventions planned under TO2 often need some actions that originate under TO11, which aim at ensuring the organisational change necessary at the administration and government level. While analysing the countries' CSRs, NRPs and OPs we categorised them according to a taxonomy which divides themes falling under TO2, TO11 or both, as shown in Figure 4 below.

Figure 4. Identified themes under TO2 and TO11



Source: The overall methodological framework of the study summarised by Wavestone, Dec 2018.

According to the interpretation of the two TOs adopted in this study, themes classified under TO2 are initiatives coming from the government that aim to enhance the access, use and quality of ICT tools and that will mainly benefit citizens and businesses. Themes falling under TO11, on the other hand, aim to improve the efficiency of the public administration through the digitalisation of some of its processes or the development of the necessary IT infrastructure, which in turn would make public administrations more efficient, with probable spill-over effects on both citizens and businesses. Given the deep interconnection between the two TOs, we also identified themes that reflect both aspects and that can benefit both public administrations and citizens and businesses depending on the situation.

2.2.2 *Phase 2: Synthesis*

The study aims to present a comprehensive analysis of the current digital government state of play in the European Semester process. The main purpose of this second phase which is contained in chapter 4 is to assess how the 2018 CSRs and NRPs, along with selected OPs for the programming period 2014-2020 address the topic of digital government in areas related to TO2 and TO11. This is achieved through a qualitative in-depth content analysis of the above-mentioned documents.

After a brief overview of the socioeconomic outlook of the EU Member States, as well as a collective picture of the main digital government developments throughout the EU, chapter 4 provides an analysis of the information collected in chapter 3 regarding the countries' CSRs, NRPs and OPs. For the CSRs, the recommendations, recitals and opportunities previously identified are now categorised according to broader clusters of themes and classified either as belonging to TO2 or TO11. Similarly, relevant reforms identified in the different countries' NRPs and OPs are also grouped according to broader clusters of themes and classified either as belonging to TO2 or TO11.

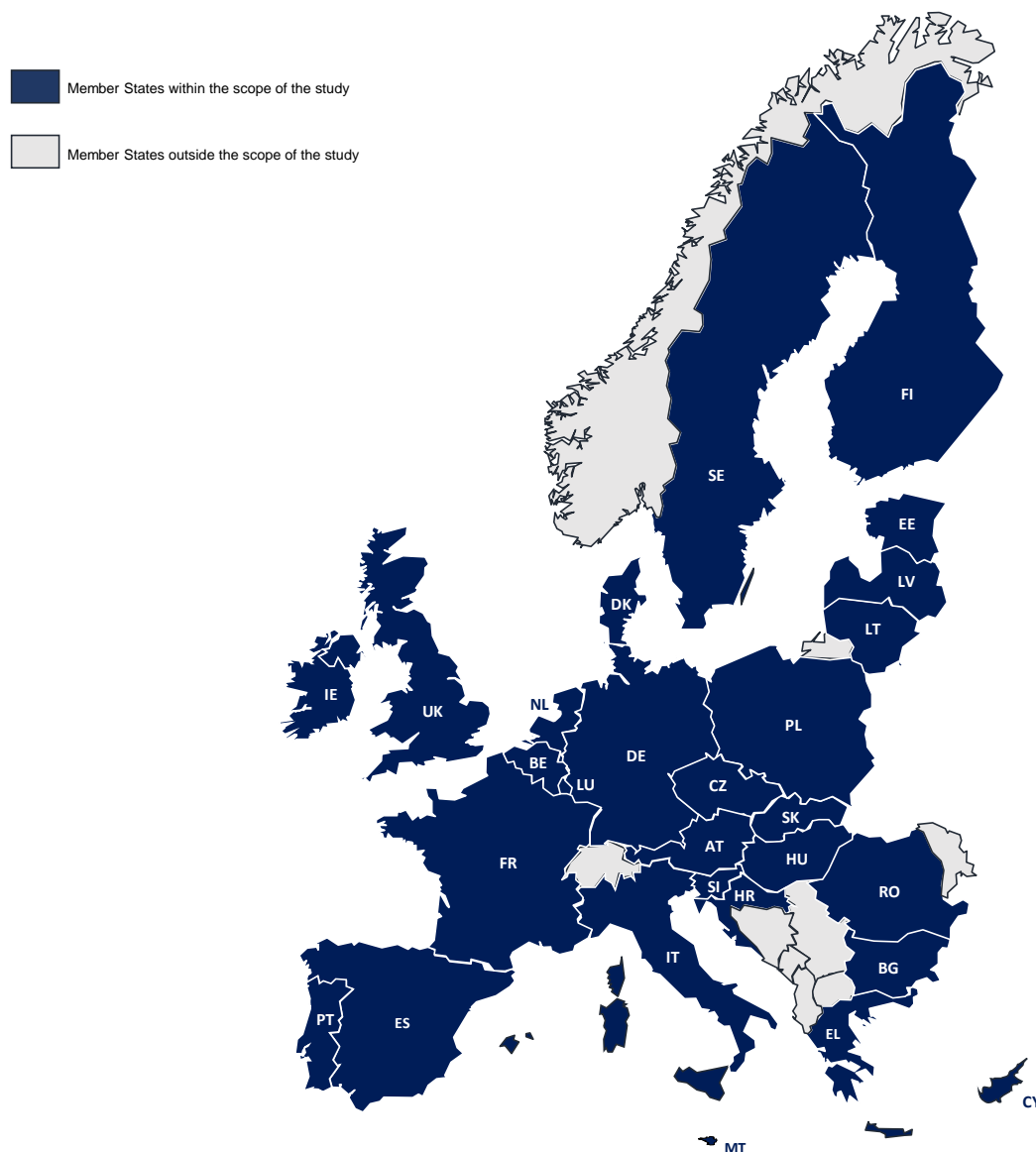
2.2.3 *Phase 3: Conclusions and Recommendations*

Building upon the results of the in-depth content analysis, conclusions and recommendations for the Commission will be provided. Recommendations will be addressed to the Commission focusing on how to better support Member States in their public administration digitalisation efforts, also in terms of synergies with different Commission initiatives.

3. Country Analysis

This chapter aims to answer RQ1, which addresses how CSRs, NRPs and OPs tackle digital government in the context of TO2 and TO11. It presents the key findings of the in-depth content analysis of the 2018 CSRs and NRPs, as well as the OPs for the period 2014-2020 for the 28 countries under the scope of this study, as shown in Figure 5.

Figure 5. Member States within the scope of the study



Source: Map showing the countries which are part of the scope of the study by Wavestone, Dec2018.

A comprehensive analysis of each country’s recommendations, reform priorities and operational actions in the field of digital government extracted from the above-mentioned documents is therefore given below. As mentioned, the chapter is organised per country and each country subsection consists of the following:

1. **Socioeconomic Outlook** of the country, derived from the 2018 CSRs.
2. **Digital Government Outlook**, analysing data originating from the 2018 eGovernment factsheets.

3. **Country Specific Recommendations**, analysing recommendations related to TO2 and TO11 contained in the 2018 CSR.
4. **National Reform Programmes**, analysis reforms related to TO2 and TO11 contained in the NRPs.
5. **Operational Programmes**, analysing the funding priorities related to TO2 and TO11 contained in the national OPs.

3.1 Austria

3.1.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Austria's CSR of 2018.²⁵

The most recent AGS did not identify Austria as a country in need of an in-depth review, which is a confirmation of its strong public finances. The macro-economic environment appears stable: Austria has a forecasted GDP growth rate of 1.7% in both 2017 and 2018. In its 2018 Stability Programme, the Austrian government expects that the headline deficit will improve from a deficit of 0.7% of GDP to a surplus of 0.4% of GDP in 2022. According to the Stability Programme, the general government debt-to-GDP ratio is expected to decline from 78.1% of GDP in 2017 to 62.2% of GDP in 2022.



Economic Outlook

Despite that, a risk to the medium and long-term fiscal sustainability of the country is posed by the foreseen increase in pension, healthcare and long-term care expenditures. Austria's public expenditure on pensions is above average when compared to the rest of the EU and is expected to further increase by 2070 (0.5% compared to -0.2% of GDP). In order to address this issue, the statutory retirement age of women (60 years of age), which is the lowest in the EU, will be gradually adjusted as of 2024 and will reach harmonisation to the male one by 2033.



Public Spending

Additionally, expenditure in the field of public healthcare, which is above the EU average, is expected to increase more than the EU average (1.3% versus 0.9% of GDP), raising public care expenditures to 8.3% of GDP by 2070. However, some countermeasures have been taken to address the sustainability issue: among them, the introduction of expenditure ceilings through the 2017 Financial Equalisation Law and a reform to strengthen primary healthcare and reduce the reliance on the hospital sector. Further benefits could also come from the use of more effective public procurement, which is expected to enhance quality and cost-efficiency.



Healthcare

The fiscal framework in Austria remains complex in terms of competencies and still suffers from misalignments between the revenue-raising powers and spending responsibilities of local and federal governments, despite reform efforts. The tax burden on labour remains high, despite the 2016 tax reform. It currently benefits higher income earners more than lower income earners, as well as men more than women.



Fiscal Framework

The labour market of Austria is generally working well. However, specific groups, especially women and people with a migrant background, are still facing challenges. For women, these translate into a high share of part-time work and a persistently high gender pay gap, which are often due to the performance of unpaid tasks, such as taking care of children or relatives. Consequently, this further reflects in a large pension gap.



Labour Market

Finally, regarding the spread of new technologies, Austria would need more competition in the service sector. Given that the Austrian economy is heavily reliant on micro, small and medium enterprises,



Business Environment

²⁵ COM(2018) 419 final, Council Recommendation on the 2018 National Reform Programme of Austria and delivering a Council opinion on the 2018 Stability Programme of Austria, Brussels, 23.5.2018.

their successful digitalisation is crucial. To address this issue, Austria shall also promote the scaling-up of particularly innovative companies in the market.

3.1.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Austria since 2017. The information originates from the eGovernment Factsheet of Austria.²⁶

Legal Framework

The Austrian Deregulation Act 2017 published on 12 April 2017 aims to bring a substantial reduction in administrative burdens. According to corresponding amendment, 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.

Organisational Change

The political responsibility for Austria's eGovernment strategy and policy has moved from the Federal Chancellery and now lies with the Federal Minister for Digital and Economic.

Infrastructure

The HELP.gv.at website that has been offering online services according to the one-stop principle since 2001 has been relaunched on 15 August 2017. In addition to the numerous graphical and structural improvements of the portal, the services in the registered area of HELP available via single-sign-on have been extended in the course of the relaunch. The services include a data safe (e-safe), the certificate of registration, the criminal record certificate, the transparency portal, the online services of the Austrian Ministry of Constitutional Affairs, Reforms, Deregulation and Justice, the central firearms-register, the online deregistration of place of residence, as well as virtual assistance or helpful online forms. The single sign-on functionality facilitates the secure archiving of important documents in the e-safe (mobile signature account) without having to register again separately.

3.1.3 *Country Specific Recommendations*

The CSR for Austria²⁷ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.²⁸

Thematic Objective 2

Recommendations

²⁶ eGovernment factsheet of Austria 2017. Accessed on 17 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Austria_2018_0.pdf

²⁷ COM(2018) 419 final, Council Recommendation on the 2018 National Reform Programme of Austria and delivering a Council opinion on the 2018 Stability Programme of Austria, Brussels, 23.5.2018.

²⁸ Firstly, the recommendations are stemming from the European Commission, directly calling on Austria to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Austria. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

In recommendation 2, the Commission directly recommends to ‘support productivity growth by stimulating digitalisation of businesses and company growth and by reducing regulatory barriers in the service sector’. Austria, therefore, shall spread the use of digital technologies, especially among the small and medium enterprises, which constitute the backbone of its economy.

Recitals

The CSR for Austria makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

In recommendation 1, Austria is called on to make its public services more efficient. This can be achieved through a more widespread use of digital technologies, especially in the healthcare sector, given that Austria is facing possible future difficulties in ensuring sustainability of health and long-term care.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Austria.

3.1.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Austria's NRP.²⁹

Thematic Objective 2

- **Improvement of the School 4.0 Strategy:** During the 2017/2018 school year, the School 4.0 — Let's get digital (*Schule 4.0 – Jetzt wird's digital*) education strategy was launched, which aims to convey digital skills to students during the entire duration of their school career. Digital skills, in fact, are now deemed as an essential prerequisite to successfully enter the job market. Starting from the 2018/2019 school year, a compulsory subject, Basic Digital Education (*Digitale Grundbildung*), will also be introduced in lower-level secondary school, covering ‘basic programming (coding) skills, standard applications, as well as a critical and reflected approach to dealing with information and data on the internet’. A Digitalisation apprenticeship package comprising 13 new job profiles will also be introduced to the students.
- **Launch of a long-term business development strategy:** The Austrian Government Programme foresees a long-term business development strategy, which will provide a one-stop shop for business support and the full digitalisation of the related processes.
- **Support of SMEs in digitalisation:** The Support to SMEs (*KMU-digital*) initiative, initiated by the *Bundesministerium für Digitalisierung und Wirtschaftsstandort (BMDW)* and the *Wirtschaftskammer Österreich (WKÖ)*, aims to support small and medium enterprises in their digitalisation efforts. To do so, the funding programme offers different services, ranging from

²⁹ Austria National Reform Programme 2018. Accessed on 17 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-country-austria-en.pdf>

consulting and qualifications for entrepreneurs and employees to information and knowledge transfer.

Thematic Objective 11

Austria's NRP makes no specific reference to measures related to TO11.

3.1.5 *Operational Programmes*

For the funding period 2014-2020, one national OP of Austria is specifically dealing with TO2 and TO11. The OP 'Investments in Growth and Employment' for the use of the ERDF fund,³⁰ focuses on three main areas: research, development and innovation; competitiveness of SMEs; and transition towards a low carbon economy.

Thematic Objective 2

- **Development of Vienna as Smart City:** The main objectives of the framework strategy towards Vienna becoming a smart city is three-fold. First, it has to invest in the right resources such as efficient use of energy that is renewable, as well as resource-efficient public mobility. Second, research and innovation infrastructure are to be expanded. Third, life quality has to be conserved and even further developed through green spaces for example.
- **Improving the competitiveness of SMEs:** Financial instruments are made available to all SMEs as they push the growth of the economy. Innovative companies and start-ups, those investing in modern technology and science are invited to participate in public-private partnerships towards further digitalisation.

Thematic Objective 11

- **Investment in smart specialisation:** Research expertise is important to invest in in order for Austria to further grow. Life Sciences, mobility, service innovation and information technology are all part of the national strategy towards specialisation. Institutions and the private sector should cooperate in order to overcome the infrastructure bottleneck. The country aims to introduce new programmes to raise competences. Research and technology infrastructure are thus necessary to facilitate access to and performing research, which will be established through various Knowledge and Technology Parks throughout the country.
- **Promotion of public procurement:** The field of innovation also takes into account the promotion of electronic public procurement. The interface between product and service innovations and public administration are planned through various pilot projects.

³⁰ Investments in Growth and Employment Austria 2014-2020 – Operational Programme for the use of the ERDF funds. Accessed on 25 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/austria/2014at16fop001

3.2 Belgium

3.2.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Belgium's CSR of 2018.³¹

Belgium is subject to the debt rule as it is in the preventive arm of the Stability and Growth Pact. The planned deficit targets from 2019 have not been specified, contributing to the deterioration of the structural balance. Nevertheless, the medium-term objective to be reached by 2020 is to set a balanced budgetary position in structural terms. The government is also aiming to improve the deficit of 1.0% of GDP to a surplus of 0.1% of GDP in 2021. The general government debt-to-GDP ratio is expected to decline from 103% of GDP in 2017 to 94.6% by 2021.

Government expenditure corresponds to an annual structural adjustment of 0.6% of GDP. The country faces additional expenditures of 0.04% of GDP due to terrorist threat and higher security-related measures, requiring the adjustment of the medium-term budgetary objective of 2017. Belgium will have to face a larger than previously expected increase in age-related long-term expenditure for pensions. In fact, it is to increase by 2.9 Purchasing Power Standard of GDP in 2070 whereas the previously projected number was 1.3 Purchasing Power Standard.

As Belgium is run by a federal system, the central government always has to ensure that the Regions and Communities³² are complying with the set rules and standards. Internal coordination was highly improved when the federal government, the regional governments and the community governments reached an agreement on individual fiscal targets at all levels to be achieved by 2020. The next step is to reach an agreement on annual fiscal targets.

Belgium is currently facing the fight against aggressive tax planning. The Notional Interest Deduction system has changed to become more incremental and the equity capital is calculated on the basis of a five-year average. The change in the system and the reduced aggressive tax planning will help impede distortions of competition between firms, safeguard public finances and provide fair treatment to taxpayers. The future steps to take are on defining specific anti-abuse rules.

The unemployment rate is decreasing and is now close to the pre-crisis level. Though the employment rate is constantly growing and 2017 was job-rich, Belgium is not well enough on track to reach the employment rate of its Europe 2020 target. In 2017, 68.1% of the working-age population was employed, whereas the target is 73.2%. The integration of disadvantaged groups such as low-skilled workers, people with a migrant background and within them women especially, is not being tackled. There are not enough policy initiatives to integrate people in the work force.

Educational opportunities are also varying, as there are several regional disparities, skills shortages and unequal quality of education. As in the labour market, the children with the most disadvantage are students of a lower socio-economic and/or migrant background. Belgium has one of the lowest



**Economic
Outlook**



**Public
Spending**



**Fiscal
Framework**



**Tax
System**



**Labour
Market**



Education

³¹ COM(2018) 401 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Belgium and delivering a Council opinion on the 2018 Stability Programme of Belgium, Brussels, 23.5.2018.

³² Belgium is a federal state, composed of communities and regions. To learn more: https://www.belgium.be/en/about_belgium/government/federale_staat

proportions of graduates in science, technology and mathematics in the European Union, which could potentially hamper growth and innovation. In addition, a teachers' reform is also needed to face the shortage, in addition to ensuring a continuous professional development.

Belgium has a low productivity growth in several sectors. There are significant restrictions in the services sector, such as rail and road transport. As to construction, there is not enough competition between firms. The retail sector's functioning should also be improved. Compared to Belgium's neighbouring countries, prices for many products are considerably higher. The Belgian average of company creation is far lower than the EU average. Businesses face heavy administrative burden and complex procedures when entering the market.

3.2.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Belgium since 2017. The information originates from the eGovernment Factsheet of Belgium.³³

Strategy

The region of Flanders presented an investment plan to boost eGovernment projects. The 10-million-euro budget decided upon in 2017 will complement the existing strategy of Flanders Radically Digital, towards further supporting projects. The Flemish government allocated grants to fifteen projects addressing the three following priorities: realising an integrated online citizen service platform; creating a one-stop shop for businesses where entrepreneurs can have an overview of all their files uploaded; and a transparent subsidy process for applicants.

Organisational Change

The Directorate-General Digital Transformation has taken over the services previously provided by Fedict. It supports the government and federal organisations in the digitalisation of process, provides advice and develops projects in connection with new technologies, steering the digital transformation of the country.

Legal Framework

In order to further enhance Belgium's compliance with the eIDAS Regulation, a new law was adopted that gives the Directorate-General Digital Transformation enhanced responsibilities. The DG determines the assurance level of Belgian electronic identification means and liaises with Belgian electronic identification providers and the European Commission. Furthermore, a Royal Decree was adopted, setting out the rules governing the recognition of private electronic identification services, focusing mainly on mobile services. The government aims to foster closer cooperation with the private sector on the subject of electronic identification.

³³ eGovernment factsheet of Belgium 2017. Accessed on 14 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Belgium_2018_0.pdf

Services

Since 2017, the Flemish government no longer accepts paper invoices for all new government contracts. There is a shift towards electronic invoicing, which has a constantly growing percentage, already 33% of invoices are delivered electronically. The Flemish government shares its best practices and lessons learnt on eInvoicing with other regional governments within the country. There is now a jointly managed federal eInvoicing platform in Belgium.

3.2.3 Country Specific Recommendations

The CSR for Belgium³⁴ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.³⁵

Thematic Objective 2

Recommendations

The CSR issued for Belgium makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR issued for Belgium makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

Though not making a direct link, recitals 16, 18 and 19 show an opportunity to enhancing eSkills of children and adults alike. Belgium's future of growth and innovation relates to the proportion of students graduating in disciplinary areas such as technology, science and mathematics. As for adults, the job market demands more and more digitally-skilled people. A training on ICT could be included in the lifelong learning project for employees, which can also be open to those looking for a job.

As creating a business entails high administrative burden on entrepreneurs due to complex procedures and low level of regulatory certainty, entrepreneurship remains low. To remedy this, Belgium sees an opportunity to, for example, create an eGovernment portal for businesses where all the necessary steps are described with links to portals and the competent administrations.

Congestion in Belgium's largest cities is a problem that is worsening by the year. Apart from needing to create more infrastructure, Belgium is encouraged to use more collective alternatives. This includes public transportation use instead of individual cars. If one insists on commuting by car, there is an opportunity to create platforms of ride-sharing, thereby making use of ICT while also lessening traffic and pollution.

Thematic Objective 11

Recommendations

³⁴ COM(2018) 401 final, Council Recommendation on the 2018 National Reform Programme of Belgium and delivering a Council opinion on the 2018 Stability Programme of Belgium, Brussels, 23.5.2018.

³⁵ Firstly, the recommendations are stemming from the European Commission, directly calling on Belgium to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Belgium. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

The CSR issued for Belgium makes no recommendation of the need to intervene in the field of TO11.

Recitals

Recital 23 of Belgium's CSR makes direct mention of its state of digital public services. The interoperability of different systems within the country is not ideal. This is especially the case for the justice system, as within it digitalisation, reliability, delayed actions, comparability and uniformity of court data cause frictions. The implementation of court services such as eBox and eDeposit are behind schedule. The most important infrastructure that the Belgian justice system has to implement is the uniform coding system across all courts.

Opportunities

The CSR issued for Belgium does not describe needs that can be linked to opportunities to intervene regarding TO11.

3.2.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Belgium's NRP.³⁶

Thematic Objective 2

- **Strengthen ICT infrastructure in businesses:** Flanders launched several policies towards helping the digitalisation of businesses. One of them is to make infrastructure more efficient, which will help businesses and their employees become more productive. Flanders invested over 100 million euros on research centres towards ICT in 2017.
- **Digitalisation of services:** The private sector, manufacturing, farming and the industry in general are aimed to become more digital throughout Flanders. The region has launched several policies and strategies, such as Flanders Make, of which *Industrie 4.0* is a part of. The region of Wallonia also put forward its priorities under *Industrie 4.0*. These are the digitalisation of companies, which are encouraged to use smart technologies such as robotics and automatisation.
- **Investing in skills to support digital transformation:** The regions of Wallonia and Brussels, as well as the French Community are making investments to participate in the digital future. There are multiple initiatives in schools, where, for example, trainings are available for both students and teachers. Digital enhancement can be seen not only in the courses themselves, but also in schools' infrastructures. Brussels will launch a plan on how to respond to future digital needs in late 2018. Flanders aims to invest in training its workforce in both the public and private sectors to ensure employees possess the necessary eSkills. Wallonia is also developing new trainings for professionals and citizens who should continue learning in order

³⁶ Belgium National Reform Programme 2018. Accessed on 14 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-belgium-fr.pdf>

to become more digital-oriented. An example of these trainings is the strengthened network of *Espaces Publics Numériques*, where skills such as online banking are taught.

- **Investment in eCities:** Under the *Stratégie Numérique Digital Wallonia*, the region has approved 30 new projects towards the digitalisation of its cities. It will adopt several ideas in order to make citizens' lives easier, notably in terms of transport and environment. These will be supported by free mobile apps.
- **Funding for start-ups:** After several successful investments, Wallonia is launching a new programme of funding for start-ups that are working in the ICT domain. Five million euros are available for the years 2018-2020. Thanks to this project, the private and public sectors are now successfully collaborating. The Region of Brussels-Capital is also supporting the creation of businesses in the domain of ICT through the NextTech project.
- **Introduction of Artificial Intelligence:** In order to boost the digital economy, the Brussels-Capital region launched 19 projects worth over 11 million euros to encourage the collaboration of academia and industry towards Artificial Intelligence.
- **Establishment of an idea exchange platform:** Brussels-based European Data Innovation Hub is a platform where academia, businesses, start-ups and politicians can meet and discuss good practices on subjects such as big data, open data and data innovation. The aim is to gather experts on different themes related to digital in order to create future collaborations. Other priorities are for example Internet of Things and Virtual Reality.
- **Digitalisation through Wi-Fi in the city:** The region of Brussels has set up Wi-Fi hotspots in 199 places. This service is free of charge for all citizens and tourists and is planned to be further expanded.
- **Opening of data:** The Walloon region together with the French Community have adopted a legislation on open data. It aims to make all public administrations' data open in digital format, to be consulted or reused by citizens, businesses and other public administrations.
- **Installation of very high-speed internet:** Wallonia aims to cover the region with very high-speed internet and broadband. It is already successful on university campuses and hospitals. The next priorities are schools and economic activity zones.
- **Institution of cybersecurity:** A coordination across the regions is necessary to offer Belgian people the necessary level of security online. New objects and new applications offer several advantages in bettering people's lives, nevertheless they also come with some risks. For this reason, Belgium aspires to publish a strong cybersecurity policy.
- **Initiation of women in Tech:** Brussels-based public sector and private organisations collaborate to bring the Women in Tech platform to life. The organisers as well as the women involved are currently defining their action plan after the successful year of 2017. The Women Code Festival also took place in order to bring more women into the digitalised workforce.

Thematic Objective 11

- **Launch of the once-only principle:** In order to enhance the engagement of Belgian citizens when filling out forms, the once only principle would strengthen the data collection. Belgian administrations aim to have an effective coordination amongst different levels of authority and power.

3.2.5 *Operational Programmes*

A thorough evaluation of Belgium's national OPs for the 2014-2020 financing period has revealed that there are no initiatives planned under TO2 and TO11 that would fall under the scope of this study.

3.3 Bulgaria

3.3.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Bulgaria's CSR of 2018.³⁷

The Bulgarian government's headline surplus was of 0.9% of GDP in 2017. This percentage is presumed to fall to 0.2% in 2021. The structural deficit of 1% of GDP is on the right path to be met as a medium-term budgetary objective. The general government debt-to-GDP ratio, which was at 25.4% of GDP in 2017 will decline gradually to 19.4% in 2021. The structural balance is expected to decrease to 0.3% of GDP by 2019 from 0.9% in 2017. The economic outlook is becoming better given the improvements on fiscal policy, public spending and corporate governance, nevertheless, these areas still have progress to make.



Economic Outlook

Employment levels have been improving, however, there are several challenges that Bulgaria is facing. People who are long-term unemployed, young people, Romani and people from poor and rural areas face difficulties entering the job market. Another important challenge is the ageing and shrinking population. In the long-term, the economy might suffer from labour and skills shortages. Furthermore, undeclared work is at high levels, which impacts the economy, the fiscal system and retirement income adequacy. For these reasons, the government intends to adopt active labour market policies, as well as social services to foster employability throughout the country.



Labour Market

The risk of poverty and/or social exclusion in Bulgaria remains one of the highest throughout the EU. Almost two-fifths of the population was at risk of poverty in 2016. Moreover, Bulgaria faces challenges on the inequality of income and access to services. The government does not spend enough on social protection and the minimum income scheme is not well-developed. In fact, the country does not have a transparent process on who is entitled to what level of benefits, a problem the government intends to remedy by setting an objective mechanism that has an overview of all schemes in the country. Children and adults belonging to disadvantaged groups do not receive enough support in terms of social assistance.



Social Inclusion

Healthcare services are compromised given the low level of public spending. Resources are limited and not distributed evenly throughout the country, and health insurance is not available for all. Citizens make out-of-pocket payments in order to receive quality healthcare. In addition, there is a shortage of nurses and doctors, as they are leaving the country.



Healthcare

Children's educational opportunities are influenced by their socio-economic status and background. Ethnically-mixed kindergartens are not usual, which means that from an early age already, children from a low socio-economic background are not included in quality education. In higher education there is a shortage of skills and imbalance in diplomas, which lead to a high number of graduates in sectors that are not addressing the shortfalls of the labour market. Participation in adult learning is very low and teachers are ageing, resulting in a lack of skills needed for the future such as digital.



Administrative and Regulatory Barriers

³⁷ COM(2018) 402 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Bulgaria and delivering a Council opinion on the 2018 Convergence Programme of Bulgaria, Brussels, 23.5.2018.



Since the National Public Procurement Strategy has been put in place, the overall public procurement landscape has improved. Nevertheless, the system's lack of transparency and corruption are still a challenge to face. Because of the system's problems of administrative capacity, there are delays in the implementation of public projects.

Bulgaria's low level of productivity and growth relates to its high fragmentation in the research, development and innovation system. The level of public and private cooperation and spending on research and development is very low compared to the rest of the EU. The governance, management, lack of infrastructure and financial commitment are also hindering innovation in the country.

3.3.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Bulgaria since 2017. The information originates from the eGovernment Factsheet of Bulgaria.³⁸

Strategy

The Governance Programme of the Bulgarian Government for the period 2017-2021 was successfully adopted. There are various measures towards digital public administration. The government aims to reduce administrative burden and implement an eGovernment.

Legal Framework

The eGovernment legal framework of Bulgaria has not changed substantially. It adopted the Administrative Procedure Code to regulate the use of information system for secure electronic delivery. This can be accessed through a single portal by citizens, businesses and public organisations. The judiciary also initiated a process to amend over 150 acts, in order to ensure compliance with the Once-Only Principle and the Directive on the re-use of public sector information (PSI Directive).

Organisational Change

The State eGovernment Agency (SEGA) was successfully established. The Chairperson of the SEGA is an important actor as he will carry out the state policy in various fields related to electronic governance, ICT infrastructure and public sector innovation.

Infrastructure

In 2017, thanks to the eGovernment Roadmap, Bulgaria initiated various ICT infrastructure projects. It has started building a database of ICT infrastructure and resources; the pilot stage of a remote electronic voting system is completed; two key data registers, namely Citizen Registration and Address Register have been started; a portal for access to eGovernment software development has started; the upgrade of the national portal for spatial data (INSPIRE) has begun; and the state-owned Private Hybrid Cloud for public eGovernment services has also been started.

³⁸ eGovernment in Bulgaria 2017. Accessed on 28 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Bulgaria_2018_0.pdf

Services

Citizens now benefit from a new service where they can electronically check what personal data is stored in administrative registers. This also implies that these documents are available amongst administrations, thus removing the necessity to provide paper documents multiple times.

3.3.3 *Country Specific Recommendations*

The CSR for Bulgaria³⁹ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁴⁰

Thematic Objective 2

Recommendations

The CSR for Bulgaria makes no recommendation of the need to intervene in the field of TO2.

Recitals

Education from a young age, as well as adult learning are not ideal, especially for people from different socioeconomic backgrounds and disadvantaged situations. Skilled workers are moving abroad, and the country's population is ageing. Digital skills are amongst the lowest in the European Union and even within the country itself there are disparities due to different backgrounds. Reform should improve educational outcomes and digital skills.

Opportunities

The CSR for Bulgaria does not describe needs that can be linked to opportunities to intervene regarding TO2.

Thematic Objective 11

Recommendations

The CSR for Bulgaria makes no recommendation of the need to intervene in the field of TO11.

Recitals

"Progress in public administration reform and eGovernment is slow", and there are various concerns on corruption and institutional shortcomings, as explained in recital 17. Digitalisation would enhance transparency of the system and improve service delivery in the long-run.

Opportunities

³⁹ COM(2018) 402 final, Council Recommendation on the 2018 National Reform Programme of Bulgaria and delivering a Council opinion on the 2018 Convergence Programme of Bulgaria, Brussels, 23.5.2018.

⁴⁰ Firstly, the recommendations are stemming from the European Commission, directly calling on Bulgaria to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Bulgaria. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Recital 6 describes the necessity to improve fiscal policy. Tax administration and collection have an opportunity to digitalise and by that improve their efficiency. Tax compliance, innovation and enhanced economy are dependent on each other to improve alongside.

In order for public procurement to further improve and become more transparent and less corrupt, there is an opportunity to digitalise this service. Administrative capacity will improve through innovative means. If all levels of government and agencies reach an equal level of technological advancement, the procurement system will become more effective and easier to manage.

3.3.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Bulgaria's NRP.⁴¹

Thematic Objective 2

- **Introduction of an online contract service:** In order to incite farmers to sign and declare one-day labour contracts, an Internet-based information portal has been developed. It aims to make labour declaration easier when based in a remote area, not requiring any travels to public administrations.
- **Reform of the labour market:** In the interest of providing better social services to people searching for employment, Bulgaria is establishing an IT-based job matching process. Furthermore, all centres will be coordinated through harmonised administrative processes. Job seekers' cases will be available through joint data collection and sharing.
- **Improvement of healthcare quality:** Bulgaria aims to improve the quality of healthcare services through several means. The government will set up a National Health Information System. This will provide patients with information about their own health. In addition, administrative services and financial costs of the government will also improve. New technologies will also be used to advance towards eHealth.
- **Promotion of innovation in enterprises:** Concerning better support to enterprises, a cooperation between the private sector and the scientific community is currently being developed. New ICT-based services will be introduced, along with enhanced or new technologies.

Thematic Objective 11

- **Provision of eProcurement services:** A single national electronic web-based platform for procurement is currently being brought up. This service will increase transparency and also tackle the corruption problems of the government.

⁴¹ Bulgaria National Reform Programme 2018. Accessed on 28 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-bulgaria-en.pdf>

- **Introduction of tax eServices:** To enhance tax collection, competent institutions are working towards putting in place an efficient service to facilitate information exchange. The fiscal control mechanism will improve, and officials will fulfil their duties more easily.

3.3.5 *Operational Programmes*

For the funding period 2014-2020, two national OPs of Bulgaria are specifically dealing with themes related to TO2 and TO11. The OP 'Human Resources Development'⁴² has two goals: boost employment and reduce social exclusion, as well as reduce poverty levels. The second OP, 'Good Governance',⁴³ in turn, addresses challenges related to the efficiency of public administrations.

Thematic Objective 2

- **Modernisation of public administration:** Services will be deployed in the field of eGovernment and the use of ICT will also be expanded within public administrations according to the 'Good Governance' OP. Bureaucracy will be reduced through the simplification of procedures and regulatory regimes. Upgrades will vary in the field of, for example, tax collection, the establishment of one-stop shops and making the government more open and transparent.
- **Establishment of new enterprises:** Micro enterprises, start-ups and SMEs are financed and receiving support if they are developing new and innovative ideas. These products/services can be related to areas such as ICT and eCommerce and eServices. Technological modernisation, including infrastructure, is also financed under the 'Human Resources Development' Operational Programme.
- **Centralised health services platform:** As part of the eServices initiative in the 'Good Governance' OP, eHealth is one of the most important priorities. The system will be unified and developed to be further upgraded into a single, centralised platform. The complete health records of all Bulgarian citizens will also be available and accessible online.
- **Generation of employment:** The skills of the current unemployed and employed workforce is important to be developed, as explained in the 'Human Resources Development' OP. The ICT sector is creating various jobs that are important for the future development of the country. An innovative strategy for smart specialisation is currently being put in place. Through training, people will acquire the skills needed for the future.

Thematic Objective 11

- **Enhancing institutional capacity:** Large investments are needed to increase the efficiency of public administrations and public services at the national, regional and local levels, as pointed out in the 'Human Resources Development' OP. The expected outcomes are reforms,

⁴² Bulgaria Human Resources Development Operational Programme. Accessed on 25 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014BG05M9OP001&lan=en

⁴³ Bulgaria Good Governance Operational Programme. Accessed on 25 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014BG05SFOP001&lan=en

better regulation and good governance. Furthermore, transnational cooperation for the exchange of best practices and experience will increase the skills, competences and knowledge of employees in Bulgaria.

- **Skills enhancement of the public administration:** The quality of services is an important aspect to tackle, and these start with the competence of employees in the administration, according to the 'Good Governance' OP. Their skillset should include proper introduction to eGovernment administration, making processes more efficient, fast and affordable.
- **Introduction of electronic procurement:** New legislation that is being implemented on public procurement is introducing electronic services. If this is achieved, there will be a positive effect on the economic development of Bulgaria, and improved business conditions as stated in the 'Good Governance' Operational Programme.
- **Improving the judicial system:** In order to enhance the quality of legislation, as well as the capacity of the judicial system, eJustice is being introduced throughout the country under the 'Good Governance' OP. This will apply consistency, faster judicial processes, information security and the opening of the judiciary will have a big anticorruption effect.
- **Installation of new technological equipment:** The IT infrastructure in Bulgaria is outdated therefore hindering information systems and services. Equipment will be purchased and installed in order to ensure proper exchange of information. The government also plans to develop a cloud to migrate all resources, systems and services onto it, conforming to the 'Good Governance' OP.

3.4 Croatia

3.4.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Croatia's CSR of 2018.⁴⁴

In 2017, the general government surplus was of 0.8% of GDP. It is expected to fall to a deficit of 0.5% of GDP in 2018, however, it is predicted to improve to a surplus of 0.5% of GDP in 2021. The currently high general government debt-to-GDP ratio reached 78% of GDP in 2017 but is envisioned to decline to 65.9% in 2021. The structural balance is forecast to decline to a deficit of 0.6% of GDP in 2019.



Economic Outlook

Currently, there are no legislation initiatives foreseen to improve Croatia's fiscal framework. Policy planning and the Fiscal Policy Commission's impact is weak. Furthermore, there is also a high level of public debt. Croatia has not yet adopted the euro, meaning that there are exposures to currency risks.



Fiscal Framework

The labour market is recovering in 2017, nonetheless, the percentage of people in employment remain low compared to the EU average. There is a low average of working life duration. Women also have a low labour market participation. Furthermore, early retirement is often chosen as the social pension schemes provide favourable conditions. For people living in less-favourable conditions, the provision of social benefits is uneven, and a large share of the population is at risk of poverty. Unless longer working lives are encouraged and policies are implemented accordingly, there remain high risks of old-age poverty.



Labour Market

Croatia is below EU average on investments to early childhood education, higher education and even training to adults. The government has released a strategy on education, science and technology, where there are several reforms to be implemented. If it is successful, the quality of education will strongly grow.



Education

Public service provision is inefficient because of the wide distribution of competences across different levels of government. Furthermore, there is a territorial fragmentation of administrations. There is a large number of local public administrations, which do not provide adequate services linked to the central administration. The harmonisation of the legal framework is postponed. There is also a necessity to provide better access to healthcare.



Administrative and Regulatory Barriers

Policies towards supporting science and innovation are uncoordinated. Cooperation between academia, research institutions and the business sector is low. Priorities also cannot be set as there is no monitoring nor evaluation in place.



Research and Innovation

3.4.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in Croatia since 2017. The information originates from the eGovernment Factsheet of Croatia.⁴⁵

⁴⁴ COM(2018) 410 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Croatia and delivering a Council opinion on the 2018 Convergence Programme of Croatia, Brussels, 23.5.2018.

⁴⁵ eGovernment in Croatia 2017. Accessed on 1 October 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Croatia_2018_0.pdf

Strategy

In May 2017, the Croatian government adopted the e-Croatia 2020 Strategy. The Action Plan is in line with the prerequisites of the EU Structural Funds programme, and are highly related to the Thematic Objectives, especially number 2, digital growth. The strategy is all-encompassing and aims to build the competitiveness of the economy, while also making citizens' lives better.

Legal Framework

The eIDAS Regulation requires the preparation of the national legal framework. For that reason, a law was implemented, and the credentials of the trust services to submit to the European Commission are being prepared.

Infrastructure

The infrastructure to accommodate the use of the eID is being prepared, and the HR.eIDAS node has already been implemented to be part of the eCitizens platform. Several public services connected to the eID are available for use by Croatian citizens residing in other EU Member States. These services are for example information on health costs over the year, application for university and eJournals.

Services

There are numerous new eServices and eMessage functions that have been made available to citizens and businesses in 2017. The aim of the government is to enhance the quality of digital public services provided. These services are, for instance, electronic driving licences; access to criminal records; notification from the eTaxes system; online information on polling stations; and expiration of documents.

3.4.3 Country Specific Recommendations

The CSR for Croatia⁴⁶ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁴⁷

Thematic Objective 2

Recommendations

The CSR for Croatia makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for Croatia makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

⁴⁶ COM(2018) 410 final, Council Recommendation on the 2018 National Reform Programme of Croatia and delivering a Council opinion on the 2018 Convergence Programme of Croatia, Brussels, 23.5.2018.

⁴⁷ Firstly, the recommendations are stemming from the European Commission, directly calling on Croatia to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Croatia. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Croatia currently has a smart specialisation strategy in place. It aims to encourage students and adults to specialise in science and innovation. In recital 19, there is thus an opportunity to also encourage to pursue digital knowledge and enhance ICT skills to help further enhance Croatia's digital economy and society.

Croatia is called upon to improve efficiency in providing healthcare services in recital 12. In order to modernise the system along with hospitals' equipment, there is an opportunity to establish eHealth provisions, and lessen the burden on both the system and the citizens.

Thematic Objective 11

Recommendations

Recommendation 3 calls on Croatia to take action in enhancing the efficiency of the court system. Electronic communication in litigation needs to improve in order to reduce the duration of court proceedings.

Recitals

The CSR for Croatia makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

There is a lack of centralised competency of the Croatian public administration. Responsibilities are distributed widely and therefore hinder public service provision and public expenditure. Putting in an eGovernment and interoperability framework would help streamline the system and reduce the number of local public administrations.

3.4.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Croatia's NRP.⁴⁸

Thematic Objective 2

- **Introduction of electronic services:** The provision of online public services is becoming more widely used by the 'eCitizens' of Croatia. Online public administration services are continually developing and have already enabled significant time savings. Citizens and businesses can also communicate with competent authorities by e-mail. Judicial authorities will also soon provide the possibility to communicate through electronic means. The launch of eID to sign in to these services is currently in progress.
- **Improved coordination of social benefits:** In January 2018, an Action Plan was adopted to harmonise the social benefits at the local and regional levels. Citizens have faster and easier access to certificates of their status in the social welfare system. A new electronic public

⁴⁸ Cyprus National Reform Programme 2018. Accessed on 1 October 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-cyprus-en.pdf>.

service is available online. New eServices such as application for maternity benefits will be made available from 2019.

- **Implementation of eSchools:** The period of 2019 to 2022 will have a continued pilot project, based on the successful results of the previous period of implementing eSchools. The schools are receiving new training rooms equipped with PCs and tablets. ICT-knowledge and digital education is important for the future. In order to train the teachers as well, webinars will be held on a weekly basis for them on the subject of informatics in select schools and universities. Online professional development of teachers will be beneficial for children as informatics will become a compulsory subject in school.
- **Obtaining building permits:** Through online means, people can request building permits online significantly reducing the number of days as well as the costs to obtain building permits. In addition, the government can communicate electronically whether the project is accepted.
- **Development of a single gateway:** Croatia is reforming the business sector. New models and digital platforms will be introduced by 2020. A facilitated cross-border provision of professional services by an eCard will be made possible. Furthermore, the digital gateway will provide administrative support with information on regulations in a number of areas.
- **Development of a single point of contact:** An electronic single point of contact providing information for businesses is expected to be in operation in 2020. All relevant information for businesses and administrative support procedures will be uploaded. For instance, there will be no need of physical presence before the commercial court or the notary for various documents.
- **Transformation of healthcare services:** New technologies provide opportunities that will enhance people's lives. Telemedicine services, i.e. the provision of medical services remotely through ICT technology, is a new service that Croatia wishes to implement. It will be more accessible to patients and have better quality delivery to them. Moreover, a single national IT software will be used for the inventory management of blood products.

Thematic Objective 11

- **Introduction of eProcurement:** In order to reduce administrative costs and provide a better quality, the government introduced electronic procurement. Economic operators are consulted to harmonise documents with the public administration standards. The introduction of eInvoicing is a priority, as it will be an added-value to the economy and public administration, while increasing transparency and legal certainty. In addition, eSignature is also currently being established.
- **Development of ICT in the judiciary:** The Criminal Division of the Supreme Court introduced an Integrated Case Management System. Currently, IT systems are being upgraded and pilot projects are already in place to test the use of different software in courts and prosecution offices.
- **Update of state information infrastructure:** It is important to modernise the Croatian Public Administration, especially its ICT infrastructure. In 2018, the government is preparing a cost-

effective and interoperable ICT system through a state-cloud. In addition, the current eArchive will also be updated to store, view and search metadata. All material will have to be digitalised.

- **Establishment of a register of state property:** In order to ensure high-quality and transparent decision-making, the management of state property is undergoing digital transformation. Base and public registries will be connected electronically, with an online access to the platform. All forms are currently being re-classified in accordance with international standards. Land registry and cadastre will also be connected to a common IT system.
- **Definition of an open data policy:** the Croatian government intends to release open data through an action plan that is still to be defined. There will be several bodies responsible for coordination.

3.4.5 *Operational Programmes*

For the funding period 2014-2020, two national OPs of Croatia are specifically dealing with themes related to TO2 and TO11. OP 'Competitiveness and Cohesion',⁴⁹ intends to boost economic competitiveness, support alignment with the EU environmental acquis, invest in transport infrastructure and network infrastructure. OP, 'Efficient Human Resources',⁵⁰ aims to contribute to creating jobs and strengthening social cohesion in Croatia.

Thematic Objective 2

- **Better delivery of healthcare:** Given the low number of doctors and low provision of health services, Croatia is investing in various services. Firstly, eLearning is established in order to support continuous and specialised education to healthcare providers. These skills will be then used in order to provide telemedicine to citizens who cannot easily reach hospitals and healthcare providers. There will also be several investments towards eHealth in Croatia such as a cloud-based standardised and interoperable hospital application system (eHospital); an integrated information system for the Croatian Health Insurance Company; ePrescriptions; and electronic repayment system. The adoption of a strategic plan for eHealth development is planned to be achieved by 2020, as explained in the 'Efficient Human Resources' OP.
- **Implementation of ICT training:** eSchools, digital content and IT classes will be introduced to children in secondary grammar schools under the 'Efficient Human Resources' Operational Programme funds. ICT equipment for teachers and students will be provided, along with a high-speed internet connection. The goal is to have 50% of the Croatian schools become eEnabled, i.e. ICT-equipped. The digital content is an important component to the future workforce's knowledge and key competences. Adults are also encouraged to take part in trainings, to enhance the digital skills of citizens. In fact, vouchers will be provided to adults in

⁴⁹ Croatia Competitiveness and Cohesion Operational Programme. Accessed on 24 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/croatia/2014hr16m1op001

⁵⁰ Croatia Efficient Human Resources Operational Programme. Accessed on 24 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014HR05M9OP001&lan=en

order to become enrolled in online courses in ICT fields, at the same time enhancing eLearning possibilities in the country.

- **Establishment of different platforms:** New interventions will support information systems to build an eCitizen platform, an eBusiness platform and a one-stop shop. These are different channels of communications for citizens and businesses, which will reduce administrative burden, therefore using the funds of the 'Efficient Human Resources' OP efficiently.
- **Development of electronic services:** Croatia has identified the areas of health, education, land management, justice, culture, tourism and inclusion as the main topics for eService development in order to improve policy delivery and increase communication between the citizens and public administration. These will be overseen by the Shared Service Centre that will coordinate and manage the use of ICT applications and eServices while ensuring transparency. The Law on the State Information Infrastructure defined several new services to implement. These are: one government website as single point of contact; a common identification and authentication interface; a common user mailbox for citizens; and an interoperability framework towards interconnection with European eServices. The 'Competitiveness and Cohesion' OP focuses on these topics.
- **Update of the IT infrastructure:** To provide eServices to the public, the basic infrastructure needs to be in place. Its development receives support under the 'Competitiveness and Cohesion' OP through investments in the extension of the next generation network (NGN) broadband and e-public services provision. For people living in remote locations, ICT infrastructure in terms of broadband is important both at home and at the public administration offices. eServices, in addition should be user-friendly for all population groups, e.g. elderly and special needs. The aim is also to reduce the digital divide throughout the country.
- **Usage of ICT in education:** ICT equipment is lacking and outdated in schools, for which funds will be allocated as depicted in the 'Competitiveness and Cohesion' OP. In addition, teachers' ICT competences are also shortcoming. ICT equipment is a tool to enable the use of modern teaching methods and techniques, innovative teaching and learning practices that support student-centred learning, development of key transversal competences for the 21st century, critical thinking, collaborative and project-based learning. The eSchools project aims to equip at least 50% of all Croatian schools with ICT infrastructure and high-speed Internet. The School Cloud will modernise and allow full access to information by school administrations.
- **Electronic administration of spatial planning:** In order to improve the spatial planning process, ICT applications to support the creation of a database for documents, procedures of construction, and making open access to download spatial information are currently being developed in the public sector through the 'Competitiveness and Cohesion' OP.
- **ICT to preserve culture:** In order to collect, process, distribute and store cultural heritage, a digitised platform is being invested in from the 'Competitiveness and Cohesion' OP. The aim is to preserve and present the Croatian national cultural heritage and make it accessible to people throughout Europe through the Europeana platform.

- **Reinforcement of eTourism:** One of the priorities of the 'Competitiveness and Cohesion' OP is investing in an IT system consolidating all the data on tourist boards and registered stakeholders in the tourist sector is meant to contribute to better quality service in the tourism sector as well as higher citizen and tourist satisfaction.
- **Improving the efficiency of businesses:** The Croatian government will provide support to enterprises in order to create eBusiness solutions through ICT by optimising business processes, integrating business functions, streamlining workflows and enhancing interactions with clients and suppliers. ICT solutions are also beneficial for the services to support B2B interactions, as described in the 'Competitiveness and Cohesion' OP.

Thematic Objective 11

- **Reorganisation of the tax administration:** Tax payers should have more eServices available for their regular needs. The tax administration's institutional framework will be changed to better engage with citizens, in line with the 'Efficient Human Resources' Operational Programme.
- **Attainment of eGovernment:** The core elements of eGovernment in Croatia are further enhanced through the interconnectivity of the information system within public administrations. Interoperability is also set as a framework in order to better organise public services from hierarchical to horizontally-integrated. Investments will be made into IT infrastructure at administrations from the 'Efficient Human Resources' OP.
- **Optimisation of processes in the judicial system:** Courts and state attorneys should refer to eRegisters, information systems, records management online and databases that have all information in one place. The ICT area needs the exchange of best practices and knowledge to further develop the interoperability of the judicial information system. Therefore, to make the justice registers more interoperable and more interconnected, the Croatian national and EU registers will become more integral. This will facilitate the access of citizens and businesses to the justice system, keeping with the 'Efficient Human Resources' OP.
- **Establishment of a government cloud:** Financing from the 'Competitiveness and Cohesion' OP will be provided for establishment, equipping and making an operational cloud for the government. The aims are to consolidate the government ICT infrastructure; purchasing or developing software; and delivery of necessary equipment.

3.5 Cyprus

3.5.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Cyprus' CSR of 2018.⁵¹

Cyprus is currently in the preventive arm of the Stability and Growth Pact and subject to the debt rule. The Government plans a budgetary surplus of 1,7% of GDP in 2018 and slightly below 2,0% by 2020. The medium-term budgetary objective is set out to be reached over 2018-2021. The risks associated with the macroeconomic assumptions presented in the Stability Programme are to the downside, mainly due to the high stock of non-performing loans in the financial sector. The Commission 2018 spring forecast indicates the structural balance is projected to register a surplus of 0,8% of GDP in 2018 and 0,5% of GDP in 2019. Therefore, Cyprus is expected to comply with the provisions of the Stability and Growth Pact in 2018 and 2019. Nevertheless, expenditure developments should be monitored closely in the light of possible future risks to the robustness of revenues.

The fight against aggressive tax planning strategies is essential to impede distortions of competition between firms and to safeguard public finances. In Cyprus, the high levels of dividend and interest payments suggest that the country's tax rules are used by companies that engage in aggressive tax planning. The absence of withholding tax on outbound dividend, interest and royalty payments by Cyprus-based companies to third country residents may lead to those payments escaping tax altogether.

While employment is on the rise and unemployment is falling fast, concerns remain regarding the high unemployment of young people and the long-term unemployed. Especially the amount of young people not in employment, education or training is still one of the highest in the EU. While efforts to improve the administrative capacity of the public employment services continue, the outreach measures and timely, tailor-made assistance for young people are limited.

The inefficiency in public administration remains a challenge for the business environment, despite recent efforts regarding eGovernment services, regulatory quality and staff mobilities. Improvements need to be ensured to avoid hindrance of the investment capacity in key utilities. The main threat is the containment of the public sector wage bill, which has been a significant factor in fiscal consolidation.

In December 2017, a national anti-corruption strategy and action plan were adopted. As the current anti-corruption body remains inadequately resourced, the government considers the creation of a new independent agency. A strengthened anti-corruption framework is expected if the legislative initiatives, currently under parliamentary scrutiny, would be adopted and implemented. Furthermore, inefficiencies in the justice system persist, affecting both contract enforcement and the swift resolution of civil and commercial cases. The most critical problems are the cumbersome civil procedures, weak enforcement of court decisions, low digitalisation of courts and lack of life-long training for judges.



**Economic
Outlook**



**Tax
System**



**Labour
Market**



**Administrative
and
Regulatory
Barriers**



**Justice
System**

⁵¹ COM(2018) 412 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Cyprus and delivering a Council opinion on the 2018 Stability Programme of Cyprus, Brussels, 23.5.2018.

A contradiction can be noticed regarding the Cypriote education system. The Government's spending is well above the EU average, indicating a strong commitment to education. The educational achievements on the other hand remain poor and early school leaving has increased significantly. Furthermore, participation in vocational education and training is low and the envisioned teacher evaluation system is still pending.



Education

In the health sector, Cyprus has managed to achieve substantial progress by adopting the legislation establishing the new National Health System. The system is set out to be fully functional by 2020 but caution is necessary regarding implementation challenges and investment needs. Therefore, the CSR recommends continuing efforts towards safeguarding against possible cost overruns, modernising and improving the efficiency of healthcare providers, including primary healthcare, introducing eHealth and setting up a National Medicines Organisation.



Healthcare

3.5.2 *Country Digital Government Outlook*

The following overview entails the most relevant digital government highlights that have occurred in Cyprus since 2017. The information originates from the Government Factsheet of Cyprus.⁵²

Strategy

The Cypriote Government approved a National Strategy for a Better Internet for Children. This Strategy implies a number of actions to be implemented throughout 2018-2023. This includes the creation of a National Centre for the Secure Usage of Digital Technologies and Internet as well as the organisation of a Safer Internet Day. Furthermore, a National Strategy Against Corruption is launched which includes multiple initiatives harnessing ICT aiming to improve the transparency and efficiency. Moreover, a Memorandum of Understanding is signed between the Government and the Cyprus Legal Information Institute that intends to enable free access to relevant sources of law.

Legal Framework

The legal framework for an eInvoicing platform is being prepared as part of a co-financing program between the Cypriote Ministry of Finance and the European Commission. The aim is to ensure the exchange of electronic invoice between private and public sectors. Furthermore, the National eGovernment Interoperability Framework was updated in order to be fully aligned with the new European Interoperability Framework which was adopted on 23 March 2017.

Infrastructure

The eDelivery project in Cyprus was officially launched on 1 September 2017 with funding from the Connecting Europe Facility (CEF) programme. The purpose is to develop and uptake national eDelivery services in Cyprus. In addition, a Platform for the Digitalisation of all Grant Schemes for

⁵² eGovernment Factsheet of Cyprus 2017. Accessed on 1 October 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Cyprus_2018_1.pdf.

Enterprises is promoted. The Platform will enable online submission of applications and support the whole procedure of managing applications as well as provide administrative information along the way.

Services

In cooperation with experts from Estonia, Cyprus is working towards the introduction of Electronic Signatures and Electronic Authentication Certificates. Besides that, an Integrated Information System for the management of Grant Schemes is being implemented in cooperation between the Ministry of Energy, Commerce, Industry and Tourism. Once in place, the system provides the electronic submission of applications as well as the management mechanisms. Furthermore, the submissions of applications for job vacancies in the Public Sector can be found on the website of the Cyprus Public Service Commission. In 2017, The Cyprus Ariadne Portal has been expanded with fifteen additional eServices. One of them is the Single Sign-On, enabling citizens to access and interact digitally with the Government using only one single ID and password. Furthermore, the OIKADE application gives citizens the opportunity to register their travel data. Moreover, the Instalments Payment System is a part of the TAX Intranet System that manages instalment plans created by taxpayers via the Ariadne portal and checks their compliance with the law.

Other Highlights

Cyprus developed an application to register remotely piloted aircraft systems (drones) online. In addition, a Farmer's and Agricultural Holdings Registry is created which can be accessed through the Ariadne Portal.

3.5.3 Country Specific Recommendations

The CSR for Cyprus⁵³ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁵⁴

Thematic Objective 2

Recommendations

The CSR for Cyprus makes no recommendation of the need to intervene in the field of TO2.

Recitals

In recital 17, the efforts of Cyprus establishing a new National Health System are complimented. Nonetheless, the implementation of the new System will be challenging. The CSR thus proposes the introduction of eHealth to improve efficiency of healthcare providers.

Opportunities

⁵³ COM(2018) 412 final, Council Recommendation on the 2018 National Reform Programme of Cyprus and delivering a Council opinion on the 2018 Stability Programme of Cyprus, Brussels, 23.5.2018.

⁵⁴ Firstly, the recommendations are stemming from the European Commission, directly calling on Cyprus to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Cyprus. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

The unemployment rate is decreasing but the one of young people remains high. The CSR points out there is a need for outreach measures tailored to young people. The implementation of an eGovernment portal indicating both the available jobs and offering assistance, in particular to young people, could be a solution for the challenge.

Thematic Objective 11

Recommendations

In Cyprus' CSR, Recommendation 2 urges to step up efforts to improve the efficiency of the judicial system by revising civil procedures. Therefore, the CSR suggests increasing specialisation of courts and setting up a fully functional eJustice system.

Recitals

The CSR for Cyprus makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

The CSR for Cyprus does not describe needs that can be linked to opportunities to intervene regarding TO11.

3.5.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Cyprus' NRP.⁵⁵

Thematic Objective 2

- **Creation of eHealth System:** In the area of health, an integrated Health Information System will be rolled out to all public hospitals and health centres. A project has been set out to digitalise paper medical files. Furthermore, the Deployment of Generic Cross Border eHealth Services in Cyprus is established and a draft law on eHealth has been prepared and submitted to the Law Office for legal vetting, aiming to deploy electronic solutions in healthcare.
- **Implementation of ICT Service Delivery:** The Government set out to create a Unified Call Centre that will accept applications from multiple communication channels (telephone, SMS, email, IVR). The aim is to provide information on more than 500 procedures for services provided by the public sector to citizens/businesses on the status of requests and on contact details of all Government bodies. Furthermore, in the context of expansion of the use of IT self-service by the employers, a computerised Candidates Placement System is developed to facilitate the employers to match employment-seeking candidates on their own. The monitoring and evaluation of active labour market policies is also ensured by a computerised system.

⁵⁵ Cyprus National Reform Programme 2018. Accessed on 1 October 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-cyprus-en.pdf>.

- **Enhancement of Digital Skills:** The Government will organise workshops and training programs on the eGovernment systems and to foster acquisition of digital skills. The organisations of these workshops aim to enable the general public to acquire basic digital skills. Furthermore, students of secondary education will have the possibility to pass exams on their digital skills and certificates once the exams have been successful. Other projects that will be put in place include the EduWeb, a programme combatting digitally illiterate adults; eSafe Schools which is a strategy to develop creative and safe use of internet in schools; and CYberSafety, a national strategy ensured by the Cyprus Safer Internet Centre covering Awareness and a helpline for better internet for kids. Furthermore, a proposal is worked out for a centralised training programme for teachers on digital competences as well as a proposal for a digital technology centre for citizens.
- **Set-up of ICT infrastructure:** With regard to the future needs of high requirements on speed, such as high-definition video, telepresence, cloud computing, tele-medicine or eLearning, Cyprus aims to provide all households and enterprises to internet access of at least 30 Mbps by 2020 and, in that same year, 50% of the households and enterprises will have a subscription of internet with at least 100Mbps.
- **Establishment of Single point of contact:** As established by the Services Directive, a new web Portal for business will be implemented. The portal will be an upgrade of the existing Single Point of Contact Portal.

Thematic Objective 11

- **Deployment of eProcurement:** In order to promote transparency, contracting authorities/entities are obliged to publish contract notices as well as contract award notices for all contracts through the eProcurement system.
- **Development of eGovernment:** As part of the Digital Strategy of Cyprus, one of the major pillars is the reform related to implementing eGovernment projects. The aim is to improve governance and increase the efficiency and productivity. The most strategic project of eGovernment is the Government Gateway Portal, Ariadni. This Portal provides 90 public eServices and in 2018 the creation of 10 additional eServices is planned.
- **Establishment of eJustice:** The low level of ICT use in courts hinders the efficiency of the justice system. With the intention to digitalise the courts, a tender process has been started to purchase an electronic Court administration system to digitalise operations of the Courts. To realise this, a pilot operation will be launched by August 2019, expecting a fully operational system by February 2020.
- **Reduction of bureaucracy:** The Ministry of Energy, Commerce, Industry and Tourism aims to increase its productivity. Therefore, it is proceeding with re-engineering and electronic submission and management of all state aid schemes.

3.5.5 *Operational Programmes*

For the funding period 2014-2020, two national OPs of Cyprus are specifically dealing with themes related to TO2 and TO11. The OP on 'Employment, Human Capital and Social Cohesion'⁵⁶ outlines objectives to promote employment, skills, social inclusion and the modernisation of the public administration. The second OP on 'Competitiveness and Sustainable Development'⁵⁷ aims to boost competitiveness and growth in Cyprus.

Thematic Objective 2

- **Development of new IT services:** In order to increase the efficiency and modernise the private and public sectors, ICT will be promoted through the 'Competitiveness and Sustainable Development' OP. Various projects will be put in place in order to increase the number of digital services provided to citizens. All the Ministries will create a single data centre; a legal framework will be adopted for electronic signatures; the eProcurement system is continuously receiving upgrades; and court cases will become electronically manageable. SMEs competitiveness, in turn, will be improved through the use of ICT such as cloud computing.
- **Development of ICT in the health sector:** New actions under the 'Competitiveness and Sustainable Development' OP will relate to the computerisation of public hospitals and health centres will be expanded with a new Integrated Information System of Health. A data centre will be created, and all patients' files will be digitalised.
- **Development of skills:** Education, training and lifelong learning are important aspects that the labour market of Cyprus should benefit from. The development of ICT skills is a particular necessity. There is a high level of electronic illiteracy, and the state, together with private universities could provide the necessary means for both young people and adults to be part of the training. The 'Employment, Human Capital and Social Cohesion' OP is making eSkills a priority.
- **Establishment of a new agency:** With the funding from the 'Employment, Human Capital and Social Cohesion' Operational Programme, the Agency for Management and Payment of the guaranteed minimum income aims to enhance the administrative capacity of the welfare benefits service management. This includes making services available online and taking into account the eGovernment and interoperability framework of Cyprus.

Thematic Objective 11

- **Improvement of public administrations' interconnected systems:** Every agency stores records in a different manner. There is no database that is accessible by all stakeholders and ICT is not taken advantage of. This hinders communication, data transfer, processing of

⁵⁶ Cyprus Employment, Human Capital and Social Cohesion Operational Programme. Accessed on 25 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014CY05M9OP001&lan=en

⁵⁷ Cyprus Competitiveness and Sustainable Development Operational Programme. Accessed on 25 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/cyprus/2014cy16m1op001

information and effective use of resources. ICT as well as IT infrastructure will be developed and invested in from the 'Employment, Human Capital and Social Cohesion' OP.

3.6 Czech Republic

3.6.1 *Socio-economic Outlook*

The following information originates from the socio-economic overview which introduces the recommendations set in Czech Republic's CSR of 2018.⁵⁸

The Czech Republic is currently in the preventive arm of the Stability and Growth Pact. The Government expects a budgetary surplus in headline terms during the period 2018-2021. In this time, the medium-term budgetary objective, a structural deficit of 1,0% of GDP, continues to be met with a margin. Furthermore, the general debt-to-GDP ratio is expected to gradually decline to 29,9% in 2021. The Commission 2018 spring forecast indicates the structural balance is forecasted to decline to approximately 0,9% of GDP in 2018 and 0,2% of GDP in 2019.



**Economic
Outlook**

The cost of ageing is a challenge for healthcare and long-term care, posing a medium risk for the fiscal sustainability. Especially pension expenditure is expected to rise up to 10,9% of GDP by 2070. This expected higher increase in pension expenditure mainly reflects the capping of the statutory retirement age at 65 years. Moreover, signs of inefficient use of resources in out-patient and in-patient care will negatively affect expenditure in healthcare.



**Pension
System**

The Czech Government continues to face challenges regarding the improvement of transparency and efficiency of public procurement and preventing corruption. Corruption and bribery form ongoing concerns for business and public. Despite efforts to improve the public procurement framework, such as the enactment of obligatory use of electronic procedures, the level of competition remains a concern. While the Government invested in National Electronic Tool, a state-owned e-procurement platform, there remains a scope for removing administrative barriers. Furthermore, there is a need for joint procurement measures between the central and local authorities as well as acquiring specialist expertise in certain areas.



**Public
Spending**

Despite the evolution of the Czech economy towards more knowledge-based activities, several bottlenecks hinder the development of a well-performing research and innovation system. The increase of business research and development investment can be traced back primarily to foreign direct investments as the research and development expenditure by domestic firms has declined over the last two years. While the Czech Republic invested substantially in public research and development, the country still underperforms in the quality of its public science base and the governance of the research and innovation system remains fragmented.



**Research
and
Innovation**

The Czech Republic needs to invest in quality inclusive education and training of primary importance to tackle the bottlenecks on the Czech labour market. The inclusive education measures still need to be fully implemented, in particular with regards to Roma children. Furthermore, the Czech education system suffers a shortage of qualified teachers that could make it more challenging in the future to recruit and retain teachers. The CSR therefore indicates the importance for the Parliament to adopt the pending new career system for teachers.



Education

⁵⁸ COM(2018) 403 final, Recommendation for a COUNCIL RECOMMENDATION on the 2018 National Reform Programme of the Czech Republic and delivering a Council opinion on the 2018 Convergence Programme of the Czech Republic, Brussels, 15.6.2018.

The Czech Republic currently experiences a strong labour market performance with a steady rise in employment and a considerable decrease in unemployment. However, the potential of women, low-skilled and disabled people is not being fully untapped while their participation could offer a solution against the background of labour shortages. Furthermore, motherhood still hinders labour market participation and gender payment gaps remain, despite the measurements that aimed to make parental leave more flexible. In addition, efforts should be made to provide jobseekers with personalised continuous support and well-targeted active labour market policies should be established. Initiatives should also be organised regarding upskilling, also covering digital skills, to improve labour market access.

3.6.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in the Czech Republic since 2017. The information originates from the eGovernment Factsheet of the Czech Republic.⁵⁹

Strategy

The Czech eGovernment Strategy 2018+ has been updated in February 2018 with five key domains: environment supporting digital technologies, digital-friendly legislation, user-friendly digital services for citizens and businesses, improving operational capacity and competences of public employees and better efficiency of centrally coordinated ICT. The updated Strategy complements the national Society 4.0 Action Plan of 2017 that focusses, amongst others, on digitalisation of public administration, connectivity and cybersecurity.

Legal Framework

The eGovernment legislation has been amended with the following acts: The Act on Information Systems of Public Administration, the Act on Trust Services for Electronic Transactions, the Act on Electronic Identification and the Act on Citizen Identity Cards. Furthermore, the necessary steps are made to transpose the GDPR and Police Directive to national legislation.

Infrastructure

The Czech Social Security Administration's databases enable citizens and employers to access their information, send requests online and receive the replies digitally. In addition, the government plans to make the databases available with the eID as personal identification means. Moreover, a New Public administration portal is being tested to enhance user-friendliness by providing online access to digital government services after the launch of the new identity cards with chips, which is planned in 2018.

Services

⁵⁹ eGovernment factsheet of Czech Republic 2017. Accessed on 2 October 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Czech_Republic_2018_0.pdf.

The Czech Republic has successfully implemented the ePrescription service with mandatory use since 1 January 2018. Furthermore, the Real Estate Cadastre has been digitalised, enabling citizens, businesses and public authorities digital access to real estate of their interest. Besides that, relevant online information, contacts and needs support has been provided to businesses and entrepreneurs on the Czech business web portal, which functions as a Single Point of Contact.

Other Highlights

The Czech Ministry of Interior has launched its mobile app called 'what to do when'. The app provides step-by-step information on public administration procedures, documents and office locations for several life events. Another feature of the application is to navigate users to the nearest public administration, CzechPOINT office and police station.

3.6.3 Country Specific Recommendations

The CSR for the Czech Republic⁶⁰ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁶¹

Thematic Objective 2

Recommendations

The CSR for the Czech Republic makes no recommendation of the need to intervene in the field of TO2.

Recitals

As indicated in recital 14, the Czech Republic is experiencing a strong labour market performance. However, the limited capacity of public employment services causes failings to provide jobseekers with personalised support. It is therefore suggested in the CSR to invest in outreach capacities of public employment, well-targeted active labour market and the enhancement of the labour market access through upskilling measures, also covering digital skills.

Opportunities

Recital 6 mentions the signs of inefficient use of resources in out-patient and in-patient care. Attention for the healthcare sector is needed as the ageing population will pose challenges to this domain in the future. To tackle this ineffectiveness, the use of eHealth could offer a solution.

Thematic Objective 11

Recommendations

⁶⁰ COM(2018) 403 final, Council Recommendation on the 2018 National Reform Programme of the Czech Republic and delivering a Council opinion on the 2018 Convergence Programme of the Czech Republic, Brussels, 15.6.2018.

⁶¹ Firstly, the recommendations are stemming from the European Commission, directly calling on the Czech Republic to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit the Czech Republic. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

The CSR for the Czech Republic makes no recommendation of the need to intervene in the field of TO11.

Recitals

The CSR for the Czech Republic makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

Attempts to foster transparency and efficiency regarding public procurement and corruption are pointed out in recital 9. Despite the investment in a state-owned eProcurement system, there is a need for better cooperation to set up joint procurement measures. An upgrade of the eProcurement system could therefore be put in place to meet these needs.

3.6.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in the Czech Republic's NRP.⁶²

Thematic Objective 2

- **Digitalisation of tax administration:** The Czech citizens are enabled to file most of their tax confirmations electronically, without having to visit the tax office in person. The digitalisation of the administration is being further developed through the Modern and Simple Tax Portal. The aim is to offer taxpayers the services of the tax office in a virtual format.
- **Development of eHealth:** As part of the National eHealth Strategy 2016-2020, the digitisation of the health sector is ongoing. The implementation of the second stage of the ePrescription is planned to be implemented, the preparations for the eHealth act are to be completed and a National eHealth Centre is set out. Furthermore, other eHealth initiatives are planned such as the creation of reference registers and the establishment of the eHealth Infrastructure Services database, which will provide an integrated departmental data interface. The non-public register of health professionals, set up in 2018, is to be finalised over the course of 2018 to enhance the planning of staffing requirements.
- **Digitalisation of businesses:** The CzechInvest Investment and Business Development Agency will not only make priority of attracting technologically advanced and innovative foreign companies, but it will also support domestic SME's. In particular, assistance will be given to their technological development to move them forward in the supply and value chains.
- **Organisation of eCulture:** The Czech Government plans to present the cultural heritage through digital means. In this regard, the Czechiana project is developed, as part of the Europeana project. The purpose of this project is to present the national cultural heritage of

⁶² Czech Republic National Reform Programme 2018. Accessed on 2 October 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-czech-republic-en.pdf>.

both the Czech Republic as well as Europe. This will also be done in the form of 3D virtual tours and 3D models of cultural structures.

- **Establishment of ICT infrastructure:** To underpin the digital agenda and the evolution towards eGovernment, a national plan for the development of new generation networks, including of high-speed internet, is set out to complement the digitalisation. The Czech Republic will ensure targeted support is in place to create these networks.
- **Development of Electronic Identification:** As of 1 July 2018, the Electronic Identification Act will be effective. This is based on the eIDAS Regulation and will be compatible with cross-border identification systems. The information system of the National Point for Identification has been created. This is a test environment as part of the Electronic Identification and will also be used for the electronic prescription project. Furthermore, new electronic identity cards will be created that will be fitted with an electronic contact chip. Using the electronic ID will enhance the user-friendliness of the basic population register and other official systems, as well as enable the citizens to communicate electronically with the state.
- **Creation of eGovernment Portal:** The Public Administration Portal aims to safeguard the quality in the provision of trustworthy and guaranteed information services. It will be integrated with the Data Box Information System to simplify communication of Czech citizens with authorities. A new version of the portal is currently being tested to enhance the layout, intuitive control and mobile friendliness. Linked to the Public Administration Portal, a new Citizen's Portal will be created. For the citizens, the Portal will enable them to complete electronic submissions, provide output from public administration information systems and give information on the status of individual actions made by citizens. In 2017, the mobile app 'What to do if' was launched to help individuals around basic events in life in a simple and comprehensive way. Furthermore, the Czech POINT network will be expanded with contact points to provide citizens with information and verified data from central registers. Finally, the Public Administration Portal, a project that facilitates communication between authorities and citizens, will be developed further.
- **Deployment of eMobility:** The Czech Government and the Automotive Industry Association signed a Memorandum together to consolidate the prospects of the Czech automotive industry. The Memorandum's central themes are eMobility, autonomous driving and digitalisations.

Thematic Objective 11

- **Enhancement of eGovernment:** In its attempt to foster eGovernment, the Czech Republic has set out the following three priorities to reduce the burden on both citizens and public administration. To manage the evolution towards eGovernment, the position of government commissioner for information technologies and digitalisation was created. The responsibilities of the commissioner are the oversee the development of digital services and use of ICT in public administration, develop digitally friendly legislation and a digital economy, the fostering of digital skills and monitor the impact of digitalisation on the Czech society.

- **Creation of eProcurement:** In 2018, the Czech Government will explore international best practices in digitalisation of public procurement with view on implementation of the best solutions in the Czech legislative environment. Furthermore, awareness campaigns will be set up to introduce electronic public procurement.

3.6.5 *Operational Programmes*

For the funding period 2014-2020, two national OPs of the Czech Republic are specifically dealing with themes related to TO2 and TO11. The ‘Employment’⁶³ OP defines the priorities of investments in promoting employment, social inclusion and an efficient public administration. The ‘Integrated Regional Operational Programme’⁶⁴ will improve public administration and public services in the Czech Republic.

Thematic Objective 2

- **Enhancement of data sharing among different agencies:** After an evaluation of communication mechanisms in both Operational Programmes, the best practice to implement for the easy access to data, is using the principle of Open Data. There will be new tools developed for both officials and citizens. A centralised public administration information system will be created to enable data sharing by linking the data resources.
- **Implementation of security measures:** In order to enhance cybersecurity, a new legislation is being adopted. This includes clauses on security measures throughout the country, the implementation of electronic identification as well as authentication and authorisation. Best practices from other countries will also be taken into account when enhancing cybersecurity, as explained in the ‘Employment’ OP of the Czech Republic.
- **Reduction of administrative burden:** The ‘Employment’ OP demonstrates that thanks to the digitalisation of administration processes, burdens will be greatly reduced. Citizens will have faster access to aid thanks to the harmonisation of inspection activities, reduction of the number of guidance documents, and simplification of terminology.
- **Improving the efficiency of public administrations:** The ‘Integrated Regional Operational Programme’ points out that the quality of information systems is an essential element of modern and well-functioning institutions at all levels of government. It contributes to lessening bureaucracy throughout the country. The implementation of the performance management process ensures the transfer and sharing of data communication between and within institutions as well as cross-border, along with communication with the citizens.
- **Implementation of eHealth:** An action plan for eHealth will be implemented through the ‘Integrated Regional Operational Programme’ in order to enhance digitalisation of the sector. The upload of all information on the computer system will include medical management, diagnosis support and followed medical care. The establishment of an eHealth network will

⁶³ Czech Republic Employment Operational Programme. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014CZ05M9OP001&lan=en

⁶⁴ Czech Republic Integrated Regional Operational Programme. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/czech%20republic/2014cz16fop002

improve the interoperability of health systems and will ensure access to safe and high-quality healthcare.

- **Modernisation of businesses:** A new Czech initiative foresees the modernisation of the private sector, through the 'Integrated Regional OP' funds. It consists of reducing the administrative burden on companies. In addition, Open Data, electronic filing, electronic identification and authentication will contribute to the goals of the initiative.
- **Modernisation of schools:** In order to improve the educational facilities, school premises will be expanded with new technological equipment in the classrooms with funds from the 'Integrated Regional OP'.
- **Reduction of administrative burden:** The Czech government aims to reduce burden on its citizens through, for example, the reduction of the number of guidance documents and the number of changes; setting up and using consistent terminology in documents; and transparent evaluation procedures. Electronic form of communication and data exchange are necessary steps to change the management style of public administrations, as illustrated in the 'Integrated Regional OP'.

Thematic Objective 11

- **Increasing the efficiency of the judiciary:** The 'Employment' OP explains that eJustice is not yet widely used in the Czech Republic. There is excessive administrative burden in courts as well as lack of process standardisation. To complement the digitalisation of the judiciary and prison systems will also be updated to electronic means.
- **Development of human resources:** There is an absence of standard knowledge of ICT throughout the public administrations. This lack of education amongst employees leads to insufficient professionalism leading to lack of standards of cybersecurity, crisis management, spatial planning, soft skills and eGovernment. The 'Employment' OP funds will tackle this challenge.

3.7 Denmark

3.7.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Denmark's CSR of 2018.⁶⁵

The headline deficit of Denmark in 2018 is projected to be at 0.7% of the GDP, and the structural deficit is planned to become 0.5% of GDP by 2025. The general government debt-to-GDP ratio is projected to decline to 34.2% in 2020 but is then expected to rise to around 40% by 2025. The forecast of the structural balance to reach 0.9% of GDP is moderately higher than the target of the 2018 Convergence Programme. Nevertheless, Denmark is on the right path to reach the provisions of the Stability and Growth Pact in 2018.

Denmark's goal is to ensure labour supply in order to promote sustainable growth. Vocational education and training will increase workers' competency. As regarding the disadvantaged groups such as young people with low education levels, disabilities, people of migrant background and people with reduced work capacity, the government plans to focus more on integration measures.

High productivity is essential to continue Denmark's economic growth, maintain high level of welfare and ensure competitiveness. Productivity growth is burdened by the limited competition in domestically oriented services such as retail, finance and transport.

Housing prices are constantly increasing and overvaluation risks are emerging. In addition, citizens have high household debts, very high loan-to-income levels meaning that the amount of debt related to mortgages is substantial especially around the capital, Copenhagen. People further face rising interest rates as a result of the high levels of debt.

3.7.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in Denmark since 2017. The information originates from the eGovernment Factsheet of Denmark.⁶⁶

Strategy

Denmark has updated and launched several new strategies towards better eGovernment, service delivery and infrastructure. The overall Danish eGovernment Strategy, which covers the period 2016-2020, was updated yearly and in 2017 all the initiatives of the strategy are advancing successfully. The national cyber and information security strategy is renewed to face new challenges. A new strategy for ICT management was also launched to focus on the mandatory compliance to the central government's ICT system. A new action plan was launched for the period 2017-2019 on the Open Government Partnership. A White Paper on a common public sector digital architecture was successfully signed by the whole Danish public sector.



**Economic
Outlook**



**Labour
Market**



**Business
Environment**



**Housing
Market**

⁶⁵ COM(2018) 404 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Denmark and delivering a Council opinion on the 2018 Convergence Programme of Denmark, 23.5.2018.

⁶⁶ eGovernment in Denmark 2017. Accessed on 27 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Denmark_2018_0.pdf

Legal Framework

The legislative framework has not changed in the country. The judicial system was however preparing to transpose the EU Directive on electronic invoicing, as well as the GDPR into national law. The government has introduced an initiative on having all new legislation 'digital-ready'. This will ease the development and adoption of new legislation.

Services

The improved services are benefitting businesses. Firstly, the NemID can now be used by business-owners as well to log onto the public self-service portal. Secondly, the Central Business Register is a portal where businesses can register their information concerning beneficial owners. Thirdly, the Danish Maritime Authority launched a pilot project to reduce the paper-based administrative processes and instead use blockchain technology for the digitalisation of ship registration processes.

3.7.3 Country Specific Recommendations

The CSR for Denmark⁶⁷ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁶⁸

Thematic Objective 2

Recommendations

The CSR for Denmark makes no recommendation of the need to intervene in the field of TO2.

Recitals

The labour market of Denmark is steady, yet facing changes, as described in recital 6. Job integration measures for newly arrived refugees are successful and measures are taken to include other disadvantaged groups in the labour market. One of the trainings towards increasing the supply level of skilled workers concerns the development of digital skills, along with general trainings and vocational education.

Opportunities

The CSR for Denmark does not describe needs that can be linked to opportunities to intervene regarding TO2.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Denmark.

⁶⁷ COM(2018) 404 final, Council Recommendation on the 2018 National Reform Programme of Denmark and delivering a Council opinion on the 2018 Convergence Programme of Denmark, Brussels, 23.5.2018.

⁶⁸ Firstly, the recommendations are stemming from the European Commission, directly calling on Denmark to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Denmark. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

3.7.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Denmark's NRP.⁶⁹

Thematic Objective 2

- **Service sector growth:** Denmark is currently facing the challenge of exposing its services sector to more international competition. The domestically oriented sector in particular, will benefit the most from new competition if it grows digitally and Denmark in general will seize new opportunities thanks to technological developments. In fact, new technologies such as eCommerce and the platform economy will support higher productivity, better service and more selection of goods at lower prices for the citizens.

Thematic Objective 11

Denmark's NRP makes no specific reference to measures related to TO11.

3.7.5 *Operational Programmes*

A thorough evaluation of Denmark's national OPs for the 2014-2020 financing period has revealed that there are no initiatives planned under TO2 and TO11 that would fall under the scope of this study.

⁶⁹ Denmark National Reform Programme 2018. Accessed on 27 September 2018. Available at: https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-denmark_en.pdf

3.8 Estonia

3.8.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Estonia's CSR of 2018.⁷⁰

Estonia is not experiencing macroeconomic imbalances and is generally doing well in addressing recommendations in order to achieve its Europe 2020 targets. For that reason, the projections and goals of the government are favourable. In year 2017, the general government deficit was of 0.3% of GDP. The goal for 2018 is to bring it to a surplus of 0.2% of GDP. The structural deficit of Estonia is calculated to reach 0.8% of GDP in 2019. The general government debt-to-GDP ratio is currently at the level of 9% of GDP and is projected to decline to 5.3% of GDP by 2022.

The government spends around 16% of GDP on social protection, less than the EU average of 28% of GDP. Income inequality is 5.6%, a bit higher than the EU average of 5.2%. The country still faces poverty and is working towards providing adequate family benefits. The government has also raised the level of minimum income, as well as pensions. In addition to facing poverty, people with disabilities are also facing social exclusion. The population, as throughout Europe is ageing and Estonia needs a long-term strategy for care services.

The gender pay gap at 25.3% is one of the highest in the European Union. The parental leave and benefit system is currently changing for the better in order to provide better work-life balance for women. The government wants to have women return to work earlier after taking maternal leave, which is a solution to lessening the gap. One of the upcoming priorities is amending the Gender Equality Act, which will at first only apply to the public sector in improving wage transparency.

Estonia has a moderate performance on research, technology and innovation, which negatively impact its productivity growth. Only 0.7% of GDP is dedicated towards business research and development, whereas the EU average is 1.3%. A decline can also be observed in companies creating new products and innovating. Measures are needed in order to boost the economy's research and innovation performance.



3.8.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in Estonia since 2017. The information originates from the eGovernment Factsheet of Estonia.⁷¹

Legal Framework

Businesses have benefited from the adoption of a new legislation, called Simplified Business Income Taxation Act. The act reduced the administrative burden imposed on small companies and micro-entrepreneurs. Furthermore, taxes are also reduced, to the benefit of entrepreneurs earning small amounts. For the benefit of public administrations themselves, Estonia adopted a Regulation on the

⁷⁰ COM(2018) 406 final, Council Recommendation on the 2018 National Reform Programme of Estonia and delivering a Council opinion on the 2018 Stability Programme of Estonia, Brussels, 23.5.2018.

⁷¹ Estonia eGovernment Factsheet 2017. Accessed on 25 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Estonia_2018_0.pdf

Principles for Managing Services and Governing Information. Authorities are required to implement the Regulation in a uniform manner and the government has issued guidelines for this purpose. The Regulation establishes the view on how to develop, maintain and provide high quality public services.

Organisational Change

The State Information System Department has been renamed to Government CIO Office. It has six new teams working towards the bettering of Estonian digital public services. These are: Digital Service Excellence Team; Legal Team; Financing Team; ICT Skills Team; Cybersecurity Policy Team; International Affairs Team; and Govtech Team.

Infrastructure

One of the most important achievements for Estonia in 2017 is the establishment of the Government Cloud and the creation of a Data Embassy in Luxembourg abroad to Estonian territory, the first of its kind. Two training programmes are also part of the eGovernment infrastructure strategies, namely Select IT and Digi ABC. In the former, adults can sign up to become junior software developers and the latter is a general project made to bring more digital skills to the industry.

Services

The eGovernment services in Estonia are constantly updated. The main achievements of 2017 concern portals and websites. Citizens can apply online for identity cards through a new website. eResidency for business registration now also has a website dedicated to the services. And lastly, the Ministry of Agriculture has launched a new client portal.

3.8.3 Country Specific Recommendations

The CSR for Estonia⁷² is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁷³

Thematic Objective 2

Recommendations

The CSR for Estonia makes no recommendation of the need to intervene in the field of TO2

Recitals

The CSR for Estonia makes no specific mentions in the recitals of the need to intervene regarding TO2.

⁷² COM(2018) 406 final, Council Recommendation on the 2018 National Reform Programme of Estonia and delivering a Council opinion on the 2018 Stability Programme of Estonia, Brussels, 23.5.2018.

⁷³ Firstly, the recommendations are stemming from the European Commission, directly calling on Estonia to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Estonia. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Opportunities

Estonia has a high public expenditure on research, technology and innovation. Nevertheless, the country is still facing challenges in this area, as described in recital 10 of the CSR. In order to boost the economy's research and innovation performance, Estonia has the opportunity to invest more in businesses' technological capacity. The private sector's productivity will grow, as well as their output in terms of contributing to Estonia's productivity growth.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Estonia.

3.8.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Estonia's NRP.⁷⁴

Thematic Objective 2

- **Development of competences:** Estonia aims to develop the digital skills of both teachers and of pupils. These skills are important to successfully join the labour market that is connected to the information society. IT skills are becoming more important in the Estonian road to digitalisation.
- **Change in the traditional ways of work:** New technologies and IT platforms change the traditional, paper-based ways of work. Employees become more autonomous and more flexible and working hours are not fixed anymore. In addition, employees are also more mobile and take up new types of tasks.
- **Effective healthcare:** A national eHealth Strategy has been adopted to develop eHealth and personal medicine. This strategy will help to improve "the quality, accessibility and effectiveness of healthcare services". The improved infrastructure will become more patient-centred and take into account the needs of the ageing population for example.
- **Use of a single portal:** In order to attract more investment in the country, Estonia aims to make more services available in English online. In addition, its goal is to use the www.eesti.ee portal as a single contact point where all information is available in one place.
- **Enhancement of ICT infrastructure:** Estonia plans to enhance its ICT, transportation and other public infrastructure. Information exchange, for example, should be available to all, not depending their living location. ICT infrastructure is planned to develop throughout the country and establish a quality high-speed broadband Internet access.
- **Improvement of public services:** The public sector faces the challenge of being flexible in the eyes of the ageing population, but at the same time become more modern because of

⁷⁴ Estonia National Reform Programme 2018. Accessed on 25 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-estonia-en.pdf>

society's growing expectations. The government intends to reduce administrative burden, end duplication of efforts amongst authorities, ensure legal clarity through transparency and make data exchange simpler in order to implement the principle of 'once only'.

Thematic Objective 11

- **Implementation of new technologies:** In order to increase the added value of all sectors, the use of ICT and new key technologies is a necessity. It is also important to raise awareness, improve skills and gain knowledge of the creative industry, thereby benefitting the service sector.

3.8.5 Operational Programmes

For the funding period 2014-2020, one national OP of Estonia is specifically dealing with themes related to TO2 and TO11. The 'Operational Programme for Cohesion Policy Funding'⁷⁵ is a multifund programme aimed to deliver a strategy for smart, sustainable and inclusive growth.

Thematic Objective 2

- **High-speed broadband full coverage:** In order to allow for further growth of the knowledge economy, Estonia aims to cover the whole territory with high-speed broadband infrastructure. This will contribute to the development of eServices, productivity in the public and private sectors such as teleworking, as well as ICT implementation in health and learning. For children, eLearning opportunities through modern resources will be installed in various schools.
- **Introduction of new technologies and eServices:** Today's most important technology trends (e.g. cloud technology, social media, AI) have a significant impact on future innovations such as Internet of Things and data exchange. eID and digitally signed contracts can be better implemented and become more interoperable across borders if new technologies are well-implemented. In addition, hospitals are also encouraged to make use of new technologies and IT systems.
- **Enhancing cross-border interoperability:** In order to augment cross-border eGovernment services, a more modern digital service infrastructure will be put into place. Digital signature is one of the priorities.

Thematic Objective 11

Estonia's OP does not make any specific reference to measures related to TO11.

⁷⁵ Estonia Operational Programme for Cohesion Policy Funding 2014-2020. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/estonia/2014ee16m3op001

3.9 Finland

3.9.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Finland's CSR of 2018.⁷⁶

The headline balance of the government in 2017 is a deficit of 0.6% of GDP and is projected to remain unchanged in 2018. However, it is expected to reach a slight surplus by 2021. The general government debt-to-GDP ratio was the highest in 2015 at 63.6% and then declined to 61.4% in 2017. According to the calculations of the 2018 Stability Programme, the debt ratio will decrease to 56.7% of GDP in 2021.

Similarly, to many countries in Europe, Finland is also facing the challenges of an ageing population and a declining workforce. In 2017, the costs on pensions, health and long-term care were 24% of GDP, projected to increase to 27% of GDP by 2030. The Finnish Parliament is currently planning a reform of social and healthcare services. These reforms such as ensuring access to healthcare in remote areas, cooperating between private and public and providing more competition will lead to cost savings.

Compared to its Nordic neighbours, employment rate was relatively low at 74% of the working age population. Women, low-skilled workers and people of migrant background are in general less employed. The non-participation in the labour market of the aforementioned groups are a growing concern. Finland is putting in place short-term measures to activate the labour market such as parental leave reform, promoting gender equality, investment in adult learning and a basic income experiment. Nevertheless, several challenges remain to incentivise work. Another challenge faced by the government is the inactivity trap. The benefits system is sometimes more rewarding than working part-time or a low-paid job. To respond to this, Finland is working on a model to set wage agreements amongst firms to support productivity growth.

3.9.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in Finland since 2017. The information originates from the eGovernment Factsheet of Finland.⁷⁷

Strategy

Finland is an advanced digital society. The programme on the National Architecture for Digital Service came to a successful end in 2017. It presented a new eService, an online portal, www.suomi.fi. Through this portal, citizens, businesses and even governmental organisations can interact and have access to different public services. In terms of future planning, the government adopted a roadmap on enhancing digital services. There will be a total of 112 services from all governmental agencies.


**Economic
Outlook**


**Public
Spending**


**Labour
Market**

⁷⁶ COM(2018) 425 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Finland and delivering a Council opinion on the 2018 Stability Programme of Finland, Brussels, 23.5.2018.

⁷⁷ eGovernment in Finland 2017. Accessed on 26 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Finland_2018.pdf

Infrastructure

Finland and Estonia often collaborate on digital matters and exchange their best practices. The two countries developed the Palveluväylä X-Road technology. It is a jointly developed Data Exchange Layer, where public administrations and companies can access services and databases. Furthermore, Tutki Hankintoja, an information service allowing citizens and businesses to follow public spending by the government, was also launched in 2017.

Services

Both citizens and businesses are benefiting from new digital public services offered since 2017. Citizens have an online mailbox that can be used to communicate with the government, the Suomi.fi Messages Service. Through the portal of the Finnish Transport Safety Agency, people can renew certain driving licences online. The Koski is also a new portal provided by the Finnish National Agency for Education where Students can access all degrees, diplomas and examinations. Regarding services for businesses, the Enterprise Finland service is now available on the general suomi.fi portal.

3.9.3 Country Specific Recommendations

The CSR for Finland⁷⁸ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁷⁹

Thematic Objective 2

Recommendations

The CSR for Finland makes no recommendation of the need to intervene in the field of TO2.

Recitals

Finland is undergoing an administrative reform as described in recital 10. A reform of the social and healthcare services is currently being planned by the government. The goal is to reduce expenditure in the area, while making services better for patients. Objectives are to ensure equal access to healthcare, independently to their place of residence, a better regional public administration, cooperation of public and private social and health centres and giving people more freedom of choice through competition. An important amendment is the use of digital and electronic services in order to increase productivity.

Opportunities

Recital 14 identifies employability and unemployment as currently the biggest challenges encountered by the government in Finland. To face this, there are several short-term and medium-term propositions on skills development, such as adult learning and vocational training in order to “enable occupational

⁷⁸ COM(2018) 425 final, Council Recommendation on the 2018 National Reform Programme of Finland and delivering a Council opinion on the 2018 Stability Programme of Finland, Brussels, 23.5.2018.

⁷⁹ Firstly, the recommendations are stemming from the European Commission, directly calling on Finland to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Finland. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

mobility and reduce skills mismatches". Once workers' skills in the digital area increase for example, employers and employees become more flexible, resulting in higher productivity.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Finland.

3.9.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Finland's NRP.⁸⁰

Thematic Objective 2

- **Healthcare reform:** In order to make healthcare services more client-oriented and easier to establish in remote areas, electronic services are the main solution to adopt. Patient data will be shared in one platform.
- **Reform of the employment administration:** Finland's employment services are currently undergoing reform. The administration introduced updated electronic services in 2017, where job-seekers can start a request, their needs are assessed online, as well as the preparation of their employment plan. This reform benefits the country's digitalisation process and has the goal of making a digital job marketplace, open to all.
- **Education targets:** Finland is also investing in its educational system and early teaching of digital. Schools will have all new digital material in order to enhance the learning environments and strengthen innovation projects. Teachers' competence is also targeted and every comprehensive school will have an expert tutor that shows digital pedagogical approaches. Cooperation amongst higher education institutions towards digitalisation will receive funding from the state.
- **Broadband connection:** Finland, together with the EU Funds, will invest in the improved broadband access to Internet in rural areas. The enhancement of vitality of rural areas is referred to as Smart Villages.

Thematic Objective 11

- **Digitalisation of public services:** The Act on Transport Services aims to digitalise road and rail transport services. The reform will harmonise and lessen administrative burden on operators. Competition will be made fairer, for instance through the abolition of the taxi transport quota system. Transport service data will become digitalised, open and compatible.
- **Data registry:** The Finnish Transport Safety Agency has planned change in legislation in terms of data regulation. The register reform will gather all bodies and data into a single

⁸⁰ Finland National Reform Programme 2018. Accessed on 26 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-finland-en.pdf>

transport register. Market data and statistics will be more accessible and contribute to market planning.

- **Introduction of automation:** The logistics sector will also see a reform towards digitalisation. The aim is to convert physical information into digital and machine-readable data. A decentralised information-sharing infrastructure will be promoted to ensure easy information flow. The logistics sector will become more efficient and more autonomous through innovation.
- **Research and development:** The Ministry of Economic Affairs and Employment, together with Business Finland in a public-private partnership (PPP), “will launch a competence centre for innovative public procurement to boost demand for innovative solutions”. In addition to the centre, a development programme is also planned to be launched between 2017 and 2021, in order to carry out data management, computing and competence development.

3.9.5 *Operational Programmes*

For the funding period 2014-2020, the ‘Sustainable Growth and Jobs – Finland’s structural funds programme’⁸¹ OP is specifically dealing with themes related to TO2 and TO11. The OP will contribute to Finland reaching the key EU and national development priorities along with the Europe 2020 objectives.

Thematic Objective 2

- **Enhancing skills:** Literacy, number skills and ICT skills are a prerequisite for full participation in the labour market. In order to support citizens’ access to jobs, lifelong learning should be possible to adapt, change and renew skills. The government intends to put in place opportunities and learning tools accessibilities.
- **Reduction of administrative burdens:** In order to enhance electronic communication between the government and the citizens, agencies will cooperate to remove unnecessary or duplicate requirements on data provision. In addition, various processes will become electronic such as tax filing. The government aims to abide by the once-only principle.

Thematic Objective 11

- **Using digital information resources:** Public and private sector as well as academia should work together towards developing services and platforms for everyday needs. The modernisation of public services will also create new jobs amongst the developer community. The development of digital information resources, business processes through open data, procurement and systems interoperability are important for the Finnish economy. In addition, new ICT services will better link the remote areas of Finland in order to access public services.

⁸¹ Sustainable growth and jobs 2014-2020 – Structural Funds Programme of Finland. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/finland/2014fi16m2op001

3.10 France

3.10.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in France's CSR of 2018.⁸²

In its 2018 Stability Programme, the French government aims to improve the general GDP government balance from a deficit of 2.6% to a surplus of 0.3% of GDP by 2022. According to the 2018 Stability Programme, the general government debt-to-GDP ratio is expected to decrease from 97.0% in 2017 to 89.2% in 2022. Though not planned to be achieved during the Programme, France's medium-term budgetary objective is a structural deficit of 0.4% of GDP.

The French level of public expenditure at 56% of GDP is the highest in the EU, 10.6% higher than the EU average. The medium-term goal of having a low interest rate environment is unlikely to prevail, in addition to potentially hurting the economic potential due to the cut in productive investment. The Action Publique 2022 sets out the principles that are to be adopted through the 2018-2022 multiannual public finances programming law.

The unemployment rate has declined by 1%: from 10.4% in 2015 to 9.4% in 2017, predicted to further decrease in the upcoming years while employment is forecast to rise consistently. Nevertheless, the difference of non-EU born people and those born in France in employment is 17.5 percentage points. Policy action is needed towards fostering equal opportunities on the labour market, starting from education and apprenticeships to recruitment support and reducing the share of workers on temporary contracts.

The French tax system is characterised by a high level of complexity due to tax expenditures, inefficient taxes and taxes on production which burden businesses and SMEs in particular. Furthermore, the tax administration also faces more burdens because of this. France also has high taxes on production in the EU consisting of capital and labour taxes for which companies are liable.

France's innovation performance remains below that of EU innovation leaders, even though there is a high level of public support. In order to better benefit from the digital economy, France should enhance its broadband coverage. Improving the efficiency of public support schemes would lead to better innovation output. In fact, one of the challenges that France faces is the cooperation of the public and private sectors. In addition, the government should also invest in research partnerships of academia and the industry.

3.10.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in France since 2017. The information originates from the eGovernment Factsheet of France.⁸³



**Economic
Outlook**



**Public
Spending**



**Labour
Market**



**Tax
System**



**Research
and
Innovation**

⁸² COM(2018) 409 final, Council Recommendation on the 2018 National Reform Programme of France and delivering a Council opinion on the 2018 Stability Programme of France, Brussels, 23.5.2018.

⁸³ eGovernment factsheet of France 2017. Accessed on 12 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_France%20_2018_0.pdf

Strategy

In October 2017, the French government launched the *Action Publique 2022* with two objectives related to digital government. First, to improve the quality of services for users by developing a relationship of trust between users and public administrations. Second, to offer a modernised work environment to public officials. This programme builds upon previous strategies, in order to take into account previous achievements and challenges that are to be faced.

Legal Framework

The Digital Bill or *Loi pour une République Numérique* was adopted after the draft's approval in 2016. The law introduces new provisions that will regulate the digital economy as a whole. The law amended previously existing ones on data protection, as well as prepared for the EU GDPR's entry into force in 2018. Various principles are now defined, such as openness of public data and net neutrality and more digital rights are reserved for citizens such as right to be forgotten and better informing consumers of online reviews.

Organisational Change

In order to better assist the digitalisation of the French public administration, the government's general Secretariat for the Modernisation of Public Action gave way to the Inter-Ministerial Directorate of Public Transformation and the Inter-Ministerial Directorate for Digital Affairs and State Information and Communication System.

Services

In terms of infrastructure for public administrations, France launched the portal *démarches simplifiées*, which aims to digitalise public services and allow public administrations to create their own online forms. These forms can be filled out online and citizens can follow the evolvement online as well. The most popular services used are students signing up to university and people asking to take their driver's licence exam.

3.10.3 Country Specific Recommendations

The CSR for France⁸⁴ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁸⁵

Thematic Objective 2

Recommendations

The CSR for France makes no recommendation of the need to intervene in the field of TO2.

⁸⁴ COM(2018) 409 final, Council Recommendation on the 2018 National Reform Programme of France and delivering a Council opinion on the 2018 Stability Programme of France, Brussels, 23.5.2018.

⁸⁵ Firstly, the recommendations are stemming from the European Commission, directly calling on France to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit France. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Recitals

Recital 18 mentions the need for improvement of France's coverage with fast broadband that would enhance its ability to benefit from the digital economy. This reform would benefit society as well as businesses. Quality coverage throughout the whole of France is needed, in order to reinforce cohesion throughout all regions.

Opportunities

In recommendation 2, the European Commission invites France to take action in reforming vocation education and training systems. The labour market will be strengthened by more equal opportunities for low qualified workers and better opportunities for jobseekers. This is also an occasion to enhance the eSkills of citizens, who can enter the job market more easily, with the necessary technological skills for the digital economy.

Thematic Objective 11

Recommendations

The CSR for France makes no recommendation of the need to intervene in the field of TO11.

Recitals

The CSR for France makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

France's tax system is distinguishable throughout the EU due to its high complexity. The European Commission identified this in recital 17, mentioning that it leads to inefficiency and barriers. As a solution, the implementation of eTax could lead to decreasing the complexity of the system. If France progresses to eTax, it should also take action in lessening regulatory and administrative burden to tax administrations.

In recommendation 3, relating to innovation, France is invited to take action in increasing the performance of the innovation system. This can be done through efficient public support schemes and better transfer of knowledge between public institutions, academia and the private sector. Through this, the efficiency of all stakeholders would be increased.

3.10.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in France's NRP.⁸⁶

Thematic Objective 2

- **Research in Artificial Intelligence:** France wishes to be at the forefront of the next technological breakthroughs such as Artificial Intelligence (AI). The concern that the country

⁸⁶ France National Reform Programme 2018. Accessed on 7 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-france-fr.pdf>

is facing is putting in place a regulatory framework which will appropriately answer to the questions and risks that arise with new innovations. A public investment of EUR 13 billion is devoted to research and innovation, to which EUR 1.5 billion is allocated to AI.

- **Digital innovation in healthcare:** In February 2018, the government announced its strategy towards the transformation of the healthcare system. It will take into account citizens' needs, notably by focusing on quality, financing, digitalisation, human resources and better territorial coverage. Furthermore, hospitals should become set up with modern equipment that will allow telemedicine in hard-to-reach areas by 2020.
- **Broadband coverage:** With a EUR 20 billion investment, France has been working towards achieving its goal of very high-speed Internet by 2022. The investment stems from the private sector, the government and the European Union.
- **Open Data:** The French government is dedicated to the opening of data, notably through the creation of portals where data can be exchanged. As this is in the planning phase at the moment, the logic of whether opening it in sectoral or trans-sectoral ways is still to be decided upon.
- **Creation of a single portal for exports:** The state is cooperating with the regions in order to create a digital platform bringing together all the support and financing offers for export. This would bring all the stakeholders into one portal, where they can provide support towards how to export from France, such as answering questions on financing and guarantees.

Thematic Objective 11

- **Speed up the transformation of public administrations:** Simplification of administrative procedures for the users and re-allocating administrative tasks to fasten the process for both officials and citizens. New technologies generate opportunities that allow the complete transformation of the back-office processes, which will then allow citizens/customers to benefit from a more user-centric experience.

3.10.5 Operational Programmes

A thorough evaluation of France's national OPs for the 2014-2020 financing period has revealed that there are no initiatives planned under TO2 and TO11 that would fall under the scope of this study.

3.11 Germany

3.11.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Germany's CSR of 2018.⁸⁷

For the upcoming four years, the German government plans a budget surplus of about 1.5% of GDP. After hitting historically high levels, the surplus will narrow due to more domestic demand. The general government debt-to-GDP ratio is moderately declining, to reach 53% in 2021.



**Economic
Outlook**

In general, public investment has been increasing in the past two years, nevertheless there are still more opportunities to pick up on at the regional and municipal levels. Public expenditure on education, in turn, was at 4.2% of GDP in 2016, a tad below the 4.7% EU average. Spending on research also fell short by 1% of the national target which was 10% for 2016. Further public financing also needs to prepare for future challenges such as growing student numbers but less teachers. Germany's growth is strongly related to its spending on education and research. Furthermore, investment in business research and development is more concentrated on large firms rather than supporting SMEs and entrepreneurs.



**Public
Spending**

Germany's tax system is characterised by its complexity, which leads to inefficiency and distortions on decision-making. The corporate tax system is also complex, burdening the government with high tax administration costs as well as distorting the level and location of investments.



**Tax
System**

The labour market of Germany is performing very strongly. In 2017, unemployment fell to a record low of 3.6%, and employment rose to 79.8%. Youth unemployment is among the lowest in the EU. Nevertheless, there is an increase in shortages of skilled labour. There is a wide gender pay gap in Germany, partly due to the fact that women choose more to work part time. Wage growth is also moderate throughout the country, and the number of low-wage earners remains high. The income inequality and the percentage of population at risk of poverty is declining, thanks to the solid social protection system. However, as throughout the EU, the population is ageing, and Germany's pension expenditure is steadily growing. The high levels might deteriorate adequacy, and people with low wages and breaks in working experience are mostly at risk of poverty in old age.



**Labour
Market**

As in the labour market, socio-economic background is an influence on education outcomes. Children and students of a migrant background face more challenges than native-born students. Drop-out rates of school and university are higher, especially for girls – who then have a harder time integrating the labour market. The future share of adult population that is low-skilled is a problem, especially because adult learning is below the EU average.



Education

⁸⁷ COM(2018) 405 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Germany and delivering a Council opinion on the 2018 Stability Programme of Germany, Brussels, 23.5.2018.

3.11.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Germany since 2017. The information originates from the eGovernment Factsheet of Germany.⁸⁸

Strategy

The National eGovernment Strategy is currently in place in Germany. It is regularly evaluated and updated. The upcoming updates will consider the principles set out in the Tallinn Declaration in 2017. In the meantime, there are several procedures and services that have been successfully adopted in 2017.

Legal Framework

There are three main developments that Germany has implemented in its legislative framework. Firstly, in order to ensure that personal rights are lawfully protected, the Federal Data Protection Act was amended to take into account the GDPR's requirements. Secondly, in accordance with the eIDAS Regulation, the law on the promotion of electronic proof of identity came into force in 2017. Thirdly, the Act for the Improvement of Online Access to Administration Services requires all levels of government to provide administrative services online. They have a deadline of five years to implement online portals and single-user accounts.

Infrastructure

The Cabinet adopted the decision to launch a digital platform for all eGovernment services, the *Portalverbund*. Every public administration service, be it provided by a federal, state or local authority, will be available online. The digital infrastructure will have to change within five years, in line with the above-mentioned Act.

3.11.3 *Country Specific Recommendations*

The CSR for Germany⁸⁹ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.⁹⁰

Thematic Objective 2

Recommendations

The CSR for Germany makes no recommendation of the need to intervene in the field of TO2.

Recitals

⁸⁸ eGovernment in Germany 2017. Accessed on 1 October 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Germany_2018_0.pdf

⁸⁹ COM(2018) 405 final, Council Recommendation on the 2018 National Reform Programme of Germany and delivering a Council opinion on the 2018 Stability Programme of Germany, Brussels, 23.5.2018.

⁹⁰ Firstly, the recommendations are stemming from the European Commission, directly calling on Germany to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Germany. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Recital 9 explains the slow progress of digitalisation throughout the country, in both society and the economy. Broadband capacity is lagging, and there is a high divergence amongst urban and rural areas in terms of Internet speed. One of the main problems is the small territory covered with high-performance fibre-based access networks, as it was cheaper to upgrade only the existing copper cable networks. Furthermore, digital public service delivery and eHealth services are below the EU average performance.

Opportunities

The CSR for Germany does not describe needs that can be linked to opportunities to intervene regarding TO2.

Thematic Objective 11

Recommendations

The CSR for Germany makes no recommendation of the need to intervene in the field of TO11.

Recitals

The CSR for Germany makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

The tax system in Germany is complex, leading to inefficiency and distortions in investment, financing and labour market participation. Furthermore, the high tax administrations costs are also burdening the system. For these reasons, within recital 11 there is an opportunity for Germany to become more focused on investing in an eTax system.

3.11.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Germany's NRP.⁹¹

Thematic Objective 2

- **Set up of digital infrastructure:** In order to let people benefit from the digitalisation of the country, the Federal Government aims to work together with private sector operators. Federal funds of EUR 7.7 billion will be used to expand the fibre optic cable in underserved regions. A joint effort between the private sector and the state will support broadband rollout. Germany plans to become the leader in 5G networks and is continuously researching and setting up trials of the modernised mobile communication standard.
- **Preparation of digital education:** The government plans to provide students with a digital infrastructure learning environment in all subjects through a digital education initiative of EUR 3.5 billion. This way, children are becoming accustomed to a wide variety of digital

⁹¹ Germany National Reform Programme 2018. Accessed on 1 October 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-germany-de.pdf>

technologies that will be needed in the future workforce and the German digital economy. Digital is also planned to be present in higher education, especially for teaching in universities. Lifelong learning amongst adults is also an investment, especially for digital knowledge. As for adults no longer in the education system, centres for digitalisation will be made available for them to strengthen digital literacy for all ages.

- **Digitalisation of businesses:** The Federal Government fully supports the modernisation of the private sector. The digitalisation of businesses is one of the most important factors towards achieving globalisation. Competition is more overseen by the government, especially in favour of German digital companies, which aim to achieve an international base.
- **Enhancement of work-life balance:** Digitalisation offers a new opportunity to work remotely from employees' usual offices. Home office possibility is especially beneficial to people with young children and for people who are on the move. Work environments are becoming more family-friendly and thus mobile, and digitalisation is promoted by the federal government for this reason.
- **Support to start-ups and SMEs:** There are various types of support possibilities available to start-ups. The ones that are dealing mostly with digitalisation can compete towards receiving further funding and support from the government. Start-ups are important to strengthening the innovation environment of Germany. Several SMEs were chosen to purchase digital equipment for them, in order to ensure high-quality and modern training. The government supports SMEs because many are specialising in digital-related topics, such as IT architecture and enhancing digital societies.
- **Digitalisation of public administration:** In addition to the eGovernment Act, a supplementary law was adopted that obliges the federal and state governments to make all their administrative services available on one portal. The implementation of a single, unified digital portal will be available for citizens and businesses.
- **Promotion of Smart Cities:** The Federal Government actively supports cities, counties and municipalities in digital modernisation. There are several pilot projects implemented to date.
- **Expansion of mobility infrastructure:** The region of North Rhine-Westphalia and its Ministry of Economy, Innovation and Digitalisation finance the establishment of public and private charging stations of electronic cars. eMobility and charging infrastructure will be more provided to cities, municipalities and counties.

Thematic Objective 11

- **Simplified tax system:** Administrative burden on the taxation procedure will become smoother if the government implements digital processes. ICTs are an opportunity towards efficiency as well as uniformity in the system.
- **Development of digital technologies:** The German digital economy is seizing various opportunities through digital technology advances. The cooperation between academia and the industry is important and receives funding. The aim of the funding is to adopt new technologies such as blockchain, Internet of Things and Big Data.

- **Establishment of Artificial Intelligence:** In order to expand the activities of Industry 4.0, the federal government set up a Centre for Artificial Intelligence, together with French partners. To further enhance this digital innovation, Germany and Poland made a joint research agreement.

3.11.5 *Operational Programmes*

A thorough evaluation of Germany's national OPs for the 2014-2020 financing period has revealed that there are no initiatives planned under TO2 and TO11 that would fall under the scope of this study.

3.12 Greece

3.12.1 Socio-economic Outlook⁹²

The Greek economy was severely hit during the crisis. Its real GDP growth was negative from 2008 to 2016, with a small recovery in 2014. The positive growth rates of 2017 are thus encouraging and pave the way to more strengthening in the upcoming years. There are positive expectations in several domains that will eventually help the growth of GDP such as domestic investments, exports and banks' capacity to grant loans.



**Economic
Outlook**

The labour market is also recovering since 2014. In 2017, the European average of employment was 66.5%, whereas Greece had 53.5%. There is room for improvement before reaching the average. It is the same case for the unemployment rate. These remain extremely high at 21.5% in 2017, compared to the euro average of 8.6%. The Social Solidarity Scheme, in addition to income support, helps unemployed beneficiaries in their search for jobs.



**Labour
Market**

In terms of fiscal balance that was targeted by the European Stability Mechanism (ESM) programme, Greece over-performed by almost 2.5% of GDP. The primary surplus target of 3.5% of GDP in 2018 is on track to be met. Greece has followed the recommendations made to it in terms of macroeconomic improvements such as on compensation of employees.



**Fiscal
Framework**

As Greece entered the crisis, it did not have a universal healthcare coverage available to its citizens. One of the main problems was the loss of employment, through which people were insured for healthcare, medicine and hospitalisation. Universal healthcare coverage was one of the main priorities of the structural reform. Today, under the new legislative framework, "all Greek citizens are entitled to universal healthcare coverage".



Healthcare

3.12.2 Country Digital Government Outlook

The following overview entails the most relevant digital government highlights that have occurred in Greece since 2017. The information originates from the eGovernment Factsheet of Greece.⁹³

Strategy

The Greek government adopted two major eGovernment strategies. The National Digital Strategy 2016-2021 aims to create to new jobs and boost economic development, in order to include more citizens in the economic and social life of the country. The strategy's priorities are all-encompassing, ranging between digital skills, digital services and ICT infrastructure. The National Strategy for Administrative Reform 2017-2019 is a step towards enhancing digital processes within public administrations. This will reduce administrative burden in the back-office and speed up processes for citizens.

⁹² Note: The European Commission did not issue a CSR to Greece this year, the information for this section was taken from the Compliance Report on the ESM Stability Support Programme for Greece. Accessed on 1 October 2018. Available at: http://www.consilium.europa.eu/media/36299/compliance_report_4r_2018-06-20-docx.pdf

⁹³ eGovernment in Greece, 2018. Accessed on 24 September 2018. Available: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Greece_2018_0.pdf

Legal Framework

Legislation has evolved to extend the provisions for eProcurement. The new law adapts to the EU Directives on procurement. The law also stipulates that public authorities are required to use the National Electronic Public Procurement System at all stages, in order to harmonise the output of documents.

Infrastructure

There have been several achievements in terms of infrastructure in the last year. First, Greece implemented the eIDAS node, as required by EU Regulation. Second, the G-Cloud, hosted by the Data Centre of the Information Society S.A. has also come into operation. Public sector services will move onto this unified portal in the future. Third, the National Citizens Registry was launched, implementing the once only principle and reducing administrative burden on citizens.

Services

Citizens and businesses now also have several new digital public services available for their use. Transportation was made easier through the single electronic card called ATH.ENA in the capital city of Athens. Students can now also enrol into any university of the country digitally. As for businesses, the existing business portal added two new services: the downloadable Electronic Certificate and Copy and the Electronic Application for Registration in the General Commercial Registry.

3.12.3 *Country Specific Recommendations*

Greece is currently subject to a stability support programme and, therefore, has not issued no CSR for Greece was issued by the Commission in 2018. The analysis of the European Semester's appraisal and assessment of Greece's digital government progress will be done through the prism of Greece's OPs.

3.12.4 *National Reform Programme*

At the time of the study, Greece has not submitted its NRP officially to the European Commission.

3.12.5 *Operational Programmes*

For the funding period 2014-2020, two national OPs of Greece are specifically dealing with themes related to TO2 and TO11. The OP on the 'Reform of the Public Sector'⁹⁴ has three funding priorities: strengthen capacity; promote eGovernment; and develop human resources. The OP on 'Competitiveness, Entrepreneurship and Innovation'⁹⁵ contributes to achieving the Europe 2020 targets for smart, sustainable and inclusive growth.

⁹⁴ Greece Reform of the Public Sector Operational Programme. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/greece/2014gr05m2op001

⁹⁵ Greece Competitiveness, Entrepreneurship and Innovation Operational Programme. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/greece/2014gr16m2op001

Thematic Objective 2

- **Digitalisation of administrative procedures:** In order to enhance interoperability, internal communication will be digitalised thanks to the 'Reform of the Public Sector' OP. This will drastically change the routine of the public sector. The administration will record documents through electronic data formats. The priority is to create an environment of digital collaboration/communication between departments and public officials. This will also enhance the accessibility of citizens to digital services. The government will provide a single platform of multi-channel services in order to enhance electronic communication.
- **Enhancing participation:** In order to improve the services provided to citizens and businesses, their participation in the design, implementation and monitoring of public policies is essential. The strengthening of participatory democracy through ICT services is one of the main actions of the 'Reform of the Public Sector' OP.
- **Enhancement of ICT infrastructure:** In order to promote the growth of the economy, Greece will invest in its digital service infrastructures. New generation networks such as broadband technology will be installed throughout the country in order to bridge the digital divide between urban centres and peripheral areas of Greece. The computing infrastructure in the government will be secure, interoperable, cost-effective and will actively promote the sharing of electronic resources. Digitalisation through the 'Competitiveness, Entrepreneurship and Innovation' OP funds will promote eGovernance without borders.
- **Integration of ICT in businesses:** Greece is below the EU average of Internet usage. For example, eCommerce within enterprises and SMEs, i.e. online purchases, were limited. These companies should target international markets and put in place a strategy to enhancing ICT usage. The demand and offer for ICT by businesses is constantly growing, therefore new technologies such as cloud computing, data processing and management, digital content and various solutions will lead the development of the market. These actions will be funded from the 'Competitiveness, Entrepreneurship and Innovation' OP.
- **Development of new technologies:** The government is leveraging open data and big data to enhance digital entrepreneurship through the 'Competitiveness, Entrepreneurship and Innovation' OP. Other technologies such as machine to machine transaction, contactless systems, software solutions, digital public services and cloud computers are currently being developed.

Thematic Objective 11

- **Development of information systems:** In order to further enhance the communication between all levels of government as well as various agencies, a common language will be used to bind standards and have a unified interface. Another action is, for example, identifying and implementing a unified policy for the supply, use, management and maintenance of basic IT infrastructure in public administration bodies. The transparency and credibility of the state will be enhanced as well, as depicted in the 'Reform of the Public Sector' OP.

- **Enhancing skills:** The civil servants' digital illiteracy should be tackled, and IT skills should be strengthened through the 'Reform of the Public Sector' OP. The action includes pre-entry training, developing knowledge, skills and competences. Furthermore, there will be training in the use of new devices, in order to modernise the public administration. 'On the job training' for current employees will be promoted through eLearning solutions, possible to do at employees' desks.

3.13 Hungary

3.13.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Hungary's CSR of 2018.⁹⁶

Hungary finds itself in the preventive arm of the Stability and Growth pact and subject to the debt rule. The Government set out, in the 2018 Convergence Programme, a deterioration of the headline deficit from 2,0% in 2017 to 2,4% in 2018. Thereafter, a gradual improvement to 0,5% of GDP by 2022 is envisioned. The medium-term budgetary objective, which entails a structural deficit of 1,5% of GDP, should be met by 2020. The 2018 Convergence Programme points out that the security-related measures in 2017 have a significant budgetary impact. According to Articles 5(1) and 6(3) of Regulation (EC) No 1466/97,⁹⁷ provisions are set out that additional expenditure due to the severity of terrorist threats allows a temporary deviation from the adjustment path towards the medium-term budgetary objective.

On 12 July 2016, Hungary received a recommendation from the Council to achieve an annual fiscal adjustment of 0,6% of GDP towards the medium-term budgetary objective. In 2017 Hungary was found to be in non-compliance, significantly deviating from the adjustment path. Therefore, the Commission issued a warning to Hungary on 23 May 2018. Subsequently, the Council adopted a recommendation that confirms Hungary needs to take the necessary measures ensuring the nominal growth rate of net primary government expenditure does not exceed 2,8% in 2018. The Commission's 2018 spring forecast indicates there is a risk of a deviation from the recommended effort. The forecast also expects a serious deviation from the Stability and Growth Pact requirements on the nominal growth rate of the net primary government expenditure in 2019. The Council thus issued the opinion that further significant measures are required as of 2018 to comply with the Stability and Growth pact.

As a consequence of the favourable economic trend, the opportunity to reintegrate notably unemployed people in the labour market, significantly improved the overall employment rate. Nonetheless, the gender employment gap remains wide due to the limited support of qualitative childcare. On top of that, the public work scheme remains the main active labour market policy, the scheme is found to be insufficiently focussed with limited effectiveness in reintegrating participants in the open labour market.

The healthcare system in Hungary faces various difficulties: poor health outcomes due to unhealthy lifestyles, low levels of healthcare spending, an inefficient allocation of resources and a limited effectiveness. Besides that, primary care providers cannot act as effective gatekeepers since they lack the appropriate equipment.

The Hungarian share of people at risk of poverty and social exclusion remains above EU average and the minimum income benefits is below 50% of the poverty thresholds for a single household, which is the lowest in the EU. Furthermore, on the social aspect, the social dialogue structures and processes



**Economic
Outlook**



**Fiscal
Framework**



**Labour
Market**



Healthcare



**Social
Inclusion**

⁹⁶ COM (2018) 416 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Hungary and delivering a Council opinion on the 2018 Convergence Programme of Hungary, Brussels, 23.5.2018.

⁹⁷ Council Regulation (EC) NO 1466/97 of July 1997 on the Strengthening of the surveillance of budgetary propositions and the surveillance of economic policies.

in Hungary are qualified as underdeveloped as they do not allow for a meaningful involvement of social partners in policy design nor implementation.

While Hungary did implement measures to improve its tax system, some problems are yet to be solved. The tax wedge on labour remains high in EU comparison and the overall complexity of the tax systems is still found to be a weakness.

The Commission expresses concerns regarding the attempts of Hungary to prevent and prosecute corruption, as it appears to have increased over the past years. Especially the limited transparency and restrictions on access to information impede measures to prevent corruption. Besides that, the regulatory barriers hamper efficient reallocation of resources, productivity and innovation. As consequence, there is a trend to entrust certain services to state-owned firms created for these purposes, to the detriment of open competition.



3.13.2 Country Digital Government Outlook

The following overview entails the most relevant digital government highlights that have occurred in Hungary since 2017. The information originates from the Government Factsheet of Hungary.⁹⁸

Legal Framework

The eAdministration Act entered into force on the 1st of January 2018. The main goal of the Act is to oblige almost all public administration bodies as well as other institutions, e.g. courts and public prosecutor offices, to provide electronic channels and electronic services. The Act also states that the public administration bodies are considered cooperating bodies. Therefore, an information exchange is implied that is to be secured by electronic means as part of the implementation of the once-only principle. Furthermore, the Act sets out that the use of eHealth services is compulsory and includes the development of an eProcurement system that started functioning from 1 January 2018.

Organisational Change

Since the Central Office for Administrative and Electronic Public Services ceased to exist, its tasks were adopted by other departments. The Deputy State Secretary for Registries' Management of the Ministry of Interior has taken up the responsibility on data management and data processing while IT infrastructure management and the delivery of eGovernment services are covered by the National Infocommunication Service Provider Ltd.

Infrastructure

Hungary set out to launch the Public Sector Information portal later in 2018. The intent of this platform is to ensure a service-oriented and standardised connection between national base registries and the different public administration information systems. In the context of health services, the IT communication and cooperation platform Electronic Health Cooperation Service Space (EEZST) is in

⁹⁸ eGovernment Factsheet of Hungary 2017. Accessed 10 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Hungary_2018_0.pdf.

place. The platform enables health professionals in the sector to work together via electronically stored information about patients and the provision of access to health professionals working in different institutions to the same data. From the 1st of November, private healthcare providers as well as the Ambulance System will be obliged to join the platform. Another digital innovation in the Hungarian infrastructure is the Hungarian Central Government Service Bus, an interoperability platform ensuring a service-oriented and standardised connection between national base registries and the public administration information services. The service is online since 1st of January 2018 which creates the possibility to replace the current architecture in communication between base registries and specific sectoral systems and replacing them with new connections in an easy way.

Services

Concerning the digital public service delivery, three major changes took place with regards to citizens. First, there is the development of a new online service for personal income tax declaration. The second innovation is the possibility for citizens to send electronic letters and initiate electronic administrative processes using the eDelivery service ePapir. Finally, the launch of Electronic Health Cooperation Service Space ensures that information systems and health professionals will cooperate. Regarding new services for business, the creation of the Company Gate will enable interaction between business and government.

Other Highlights

In January 2018, a new customisable electronic administration user interface, SZÜF, will function as the point of single contact. It will be replacing the former magyarorszag.hu portal. The portal includes a life-event based approach to publish existing eGovernment services.

3.13.3 Country Specific Recommendations

The CSR for Hungary⁹⁹ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁰⁰

Thematic Objective 2

Recommendations

The CSR for Hungary makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for Hungary makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

⁹⁹ COM (2018) 416 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Hungary and delivering a Council opinion on the 2018 Convergence Programme of Hungary, Brussels, 23.5.2018.

¹⁰⁰ Firstly, the recommendations are stemming from the European Commission, directly calling on Hungary to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Hungary. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Recital 16 indicates the Hungarian healthcare system is found to have limited effectiveness. Especially the primary care takers are not sufficiently equipped to function as gatekeepers. The Commission thus highlights the need to rationalise hospital resources and target investments to strengthen primary care services. By introducing eHealth systems to strengthen the ICT applications in the sector these required improvements could be facilitated.

The Commission points out in both recommendation 2 and recital 11 that in Hungary, social dialogue structures and processes remain underdeveloped and therefore do not allow for a meaningful involvement of social partners. In order to combat deficiencies in stakeholders' engagement as well as the limited transparency and thus improve the quality of policy making, stakeholder consultations through a digital platform could offer a solution.

Thematic Objective 11

Recommendations

The European Commission sets out in recommendation 2, that, to strengthen the anti-corruption framework, reinforce the prosecutorial efforts and improve transparency and competition in public procurement, data gained from the eProcurement system accessible to the public.

Recitals

The CSR for Hungary makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

The CSR for Hungary does not describe needs that can be linked to opportunities to intervene regarding TO11.

3.13.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Hungary's NRP.¹⁰¹

Thematic Objective 2

- **Enforcement of digital competence in public education:** The project Development of Digital Competence has three objectives: the increase the number of lessons supported by ICT, to develop teacher trainings that focus on the use of ICT tools and to develop student's digital competence to reach the level expected by the labour market.
- **Creation of electronic access to public consultations:** In order to ensure public consultations regarding EU projects and tenders, the managing authority in Hungary makes the call for proposals for public consultation available via the www.szechenyi2020.hu website. There is a deadline of 10 days ensured. Besides the call for proposals, there is also the

¹⁰¹ Hungary National Reform Programme 2018. Accessed on 17 September 2018. Available at: https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-hungary-en_0.pdf.

possibility to execute public consultations regarding legislation. This is embodied by either the contact points specified on the website (general consultation) or direct consultation by those involved in the preparation of the legislation (direct consultation), e.g. the persons, institutions and organisations involved by the responsible minister.

Thematic Objective 11

- **Development of an electronic public procurement system:** As of 15 April 2018, the use of the electronic public procurement system is obligated for the Hungarian contracting authorities. By October 2018 Hungary aims to introduce the compulsory use of electronic communication in each procurement procedure. The transition towards the full application has been initiated in November 2017 and the Hungarian Government opted for a gradual implementation.

3.13.5 Operational Programmes

For the funding period 2014-2020, out of all the Hungarian OPs, the 'Public Administration and Civil Service Development OP'¹⁰² of Hungary is specifically dealing with objectives related to TO2 and TO11. Various funding will reinforce the services provided by the public authorities.

Thematic Objective 2:

- **Digitalisation of services:** As a first step towards the harmonisation of administrative procedures, physical one-stop shops will be established at regional and local levels. The development of eSolutions consists mostly of allowing citizens to firstly start administrative processes online. Some procedures will soon be available to be conducted fully online. Citizens want to be able to file their taxes online, for example.

Thematic Objective 11:

- **Enhancement of technology in government:** The current procedures in government are not standardised. The government has started adopting a more modern (electronic) form of administration. Broadband communications infrastructure is also currently being developed towards more efficient eGovernment. The harmonisation of technology is important because of the varying office systems at different level of government. In addition to enhancing the system, administrative processes are also enhanced, such as document verification, document delivery and basic building blocks.
- **Development of skills:** Public service employees lack continuous feedback and collaboration. This will be remedied by eLearning, courses, exchange of ideas and training. People entering in new functions have to pass several exams, one of which will measure their proficiency.

¹⁰² Hungary Public Administration and Civil Service Development Operational Programme. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/hungary/2014hu05m3op001

- **Implementation of eProcurement:** The use of eProcurement solutions is still in the initiation phase in Hungary. There are several problems hindering full implementation which are, for example, absence of standardised application, fragmentation of market solutions and high costs. eProcurement will also increase transparency, through an electronically structured system. The administrative burden on procurers will be greatly lessened thanks to online consultations, online support, eSignature and SMS notifications.

3.14 Ireland

3.14.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Ireland's CSR of 2018.¹⁰³

Ireland is experiencing macroeconomic imbalances which stem in particular from the large stocks of private and public debt and net external liabilities that constitute vulnerabilities. However, improvements have been substantial, especially the productivity growth that continues to support private deleveraging. Besides that, the Government debt is projected to continue its downward trajectory, which moves the deficit closer to balance. Ireland can thus be found in the preventive arm of the Stability and Growth Pact and is subject to the transitional debt rule. The Irish government indicates the deficit is expected to decline to 0,2% of the GDP in 2018 and to continue to gradually improve thereafter. The medium-term budgetary objective of Ireland is a structural deficit of 0,5% and it is expected to be met from 2019 onwards. The Commission esteems the macroeconomic scenario underpinning the budgetary projections plausible but, according to the 2018 spring forecast of the Commission, there is risk of deviation from the recommended fiscal adjustment in 2018.



**Economic
Outlook**

Due to the rapidly ageing population, the Irish healthcare system is under pressure and Ireland faces fiscal sustainability risks related to the cost of ageing. While efficiency measures, such as a cost-saving arrangement with the pharmaceutical industry, have been put in place the Irish healthcare system remains costly and is subject to challenges compounded by the rapidly ageing population. Primary healthcare services are not capable to alleviate the growing pressure and primary care's role as gatekeeper needs to be strengthened in order to reduce the burden of the hospitals.



Healthcare

The low public investment following the economic bust is taking a toll on the availability of appropriate infrastructure in the areas of transport, clean energy, water services, housing and telecommunications. Especially the affordability is a concern and if not addressed, constraints limiting the supply of housing could contribute to the economic imbalances already in place.



**Public
Spending**

While unemployment in Ireland fell to 6,7% in 2017, the Commission remarks certain groups remain detached from the labour market, resulting in social exclusion. The Irish social protection and taxation systems are deemed to be very effective in curtailing poverty and inequality and measures to incentivise employment. Nonetheless, the high at-risk-poverty-or-social-exclusion rate remains persistent due to the high proportion of people living in households with low work intensity, putting the rate higher than the EU average. Since the high cost of childcare can act as a barrier to accessing paid employment, this has a negative effect on women's employment rate. Another issue regarding labour is the difference between the employment rates of low, medium and highly skilled workers. In Ireland, a mismatch of skills as well as skills shortages are becoming more evident in several areas. On top of that, Ireland has the one of the lowest levels of digital skills in the EU, which is in contrast with the high proportion of science, technology, engineering and mathematics graduates leaving the higher education system.



**Labour
Market**

¹⁰³ COM (2018) 407 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Ireland and delivering a Council opinion on the 2018 Stability Programme of Ireland, Brussels, 15.6.2018.

3.14.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Ireland since 2017. The information originates from the eGovernment Factsheet of Ireland.¹⁰⁴

Strategy

Ireland has published the eGovernment Strategy 2017-2020 in July 2017 after approval by the Irish government. The Strategy embodies the Government's intention to be open, flexible and collaborative with people and business by using digitalisation and technology to improve efficiency and effectiveness of the public services. In July 2017, Ireland also published an Open Data Strategy. The Strategy builds upon the achievements of the Open Data Initiative 2014. The objective of the Open Data Strategy is twofold: publish high value government data in an open format on the one hand and engage with a broad community of stakeholders to promote social and economic benefits on the other. The Open Data Portal that is part of the Strategy is ranked no. 1 in the European Commission's Open Data Maturity assessment for 2017.

Legal Framework

Concerning eGovernment legislation, Ireland has developed the Data Sharing and Governance Bill. After the drafting process, the Bill is expected to be passed in 2018. Besides that, Ireland is taking up the engagement to establish a Single Digital Gateway and to implement the eIDAS Regulation.

Infrastructure

In light of infrastructural changes related to eGovernment, Ireland has undertaken various innovative initiatives. The Office of the Government Chief Information Officer is developing a Digital Portal to support citizens in finding government services online and the better use of data across governments. The Public Services Card has been created and enables citizens, together with its online equivalent MyGovID, to have a single approach to online identity across public services. In the field of healthcare, the eReferrals Systems has been set up. These systems allow general practitioners to refer patients electronically to any hospital.

Services

As part of the eGovernment services, Irish citizens that want to attend the Visa Public Office in person are given the opportunity to book appointments online thanks to the Irish Nationalisation and Immigration Service Appointments Booking System. They are also granted the possibility to apply online for the renewal of their passport and can send requests to the national police force, the Garda, which clears citizens within days through their eVetting solution for applications.

¹⁰⁴ eGovernment Factsheet of Ireland 2017. Accessed 17 September 2018. Available at : https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Ireland_2018_0.pdf.

3.14.3 *Country Specific Recommendations*

The CSR for Ireland¹⁰⁵ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁰⁶

Thematic Objective 2

Recommendations

In recommendation 2, Ireland should prioritise the upskilling of the adult working-age population, with a focus on digital skills as the country's performance in this field is amongst the lowest in the EU.

Recitals

Recital 12 points out the infrastructural problems Ireland is facing due to years of low investment as consequence of the economic bust. One of the fields that needs to be considered and where infrastructure needs to be improved is that of telecommunication.

Opportunities

In recommendation 1 as well as in recital 11, there is a reference to the expected increase in age-related expenditure. It is therefore suggested to increase the cost-effectiveness of the healthcare system as well as pursuing the envisaged pension reforms. Regarding the reforms needed in the healthcare sector, the introduction of eHealth applications could ensure a more cost-effective functioning.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Ireland.

3.14.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Ireland's NRP.¹⁰⁷

Thematic Objective 2

- **Education in digital skills:** As the population of Ireland has a low level in basic digital skills, shortages become apparent notably in ICT, financial services and engineering. Therefore, an ICT Skills Action Plan has been developed that covers the period 2018-2026. In addition, the Skills for Growth Initiative, launched in 2017, aims to increase both the quality and quantity of the data available on skills needs in individual enterprises. To promote employment in the ICT sector, the Springboard+ initiative enables homemakers that want to upskill, reskill or cross

¹⁰⁵ COM (2018) 407 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Ireland and delivering a Council opinion on the 2018 Stability Programme of Ireland, Brussels, 15.6.2018.

¹⁰⁶ Firstly, the recommendations are stemming from the European Commission, directly calling on Ireland to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Ireland. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

¹⁰⁷ Ireland National Reform Programme. Accessed on 17 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-country-ireland-en.pdf>

skill in ICT and increase their qualification level. On a broader level, the Getting Citizens Online programme, as part of the National Digital Skills Strategy, aims to support and empower citizens to fully participate in Ireland's digital economy and society. A scheme is included to train citizens' their digital skills, thus removing a key barrier to digital adoption.

- **Digitalisation of the healthcare system:** Ireland started the National Development plan 2018-2027 for its healthcare system that provides the budget to ensure the healthcare meets the needs of the population and the implementation of health strategies and policies, including eHealth, can take place. The Individual Health Identifier programme introduces the eReferrals service that is gradually being implemented across services nationwide. National systems containing health records for women and babies in maternity, oncology clinical information and laboratory information are set out to facilitate the information sharing across and amongst services.

Thematic Objective 11

Ireland's NRP makes no specific reference to measures related to TO11.

3.14.5 *Operational Programmes*

A thorough evaluation of Ireland's OPs for the 2014-2020 financing period has revealed that there are no initiatives planned under TO2 and TO11 that would fall under the scope of this study.

3.15 Italy

3.15.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Italy's CSR of 2018.¹⁰⁸

Italy is currently in the preventive arm of the Stability and Growth Pact and subject to the debt rule. According to the stability programme, the headline deficit is projected to improve from 2.3% of GDP in 2017 to 1.6% in 2018, and 0.8% in 2019. The medium-term budgetary objective, set at a balanced budgetary position in structural terms, is planned to be reached in 2020. The debt-to-GDP is foreseen to continue declining as of 2018, reaching 122% in 2021.

Italy's taxation system weighs heavily on capital and labour. This hampers economic growth, since high tax burden of production factors discourages investments and employment. Italy shall shift towards tax bases such as property or consumption, which are less detrimental to growth. Further actions might also include the simplification of the tax code and an overall increase of tax compliance. In this regard, the extension of the mandatory electronic invoicing to all private sector transactions from 2019 might prove beneficial. Finally, no strategic action has been envisaged to further fight against a shadow economy, which accounts for about 12.9% of GDP.

The fight against corruption remains a challenge for the country, especially with regard to the business environment and public procurement. Measures have been taken to alleviate this situation, with Italy improving its anti-corruption framework by revising its statute of limitations, extending the protection of whistle-blowers to private sector workers and better aligning the offence of corruption among private parties with international standards. However, the situation might be further improved by increasing the efficiency of its criminal justice. Indeed, Italy's justice system continues to impede a secure business environment, as it is constantly burdened by a collection of lengthy court proceedings and a high number of pending civil and commercial cases, which remain a challenge to judicial efficiency.

Italy's old-age pension expenditure is among the highest in the EU. Despite past pension reforms, further improvement is needed to avoid that the high share of old-age pensions in public spending restrains other types of social spending, like education, whose expenditure is declining since early 2000s. The rate of people at risk of poverty and social exclusions, moreover, is well above the EU average and pertains especially children, temporary workers and migrants.

Investments, which sharply declined during the crisis, are still low as compared to the 2007 levels and to other Member States. This is particularly true for private investments. The main factor upsetting the investment environment are undeveloped capital markets, impaired bank-lending and a lack of high-skilled people due to brain drain and limited lifelong learning. To address the issue there is the need for a long-term policy framework that would enable investments capable of supporting innovation.

Labour market conditions have improved in recent years, with the headcount employment back to pre-crisis levels. Despite that, the employment rate, although increased to over 62% last year, is still



**Economic
Outlook**



**Fiscal
Framework**



**Administrative
and
Regulatory
Barriers**



**Public
Spending**



**Research
and
Innovation**



**Labour
Market**

¹⁰⁸ COM(2018) 411 final, Council Recommendation on the 2018 National Reform Programme of Italy and delivering a Council opinion on the 2018 Stability Programme of Italy, Brussels, 23.5.2018.

considerably below the EU average. In particular, long-term and youth unemployment remain high, posing risks to social cohesion and growth.

3.15.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Italy since 2017. The information originates from the eGovernment Factsheet of Italy.¹⁰⁹

Strategy

The Agency for Digital Italy has drafted and is responsible for the execution of the Three-Year Plan for IT in the Public Administration. It has been defined in accordance to what is stated in the Digital Growth Strategy. 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.

Legal Framework

The latest reform of the Digital Administration Code (*Codice dell'Amministrazione Digitale*) lays down the legal foundations for many of the services established in the Three-Year Plan for ICT in the Public Administration.

Infrastructure

Italy has implemented the several changes to its eGovernment infrastructure, among them: Launch of the National Resident Population Register (ANPR); the activation in all municipalities of the Electronic Identity Card system as of December 2018; the establishment of an eProcurement Forum; and introduction of PagoPA as the new means of payment to Public Administration.

Services

Finally, in 2017 the main change in digital public service delivery for citizens has been the possibility to use the credentials of their Public System of Digital Identity (*Sistema Pubblico di Identità Digitale*, SPID) to consult registers, check the pension situation and request services of the INPS (National Institute of Social Security) through their own computer without having to physically go to the offices of the Institute

¹⁰⁹ eGovernment factsheet of Italy 2017. Accessed on 24 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Italy_2018_0.pdf.

3.15.3 Country Specific Recommendations

The CSR for Italy¹¹⁰ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹¹¹

Thematic Objective 2

Recommendations

In an effort to fight against corruption, recommendation 1 calls on Italy to strengthen the use of ePayments through lower legal thresholds for cash payments.

Recitals

The CSR for Italy makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

In recommendation 2, Italy is expected to increase the efficiency and quality of local public services. It appears clear that ICT tools might contribute in achieving this goal, for instance by providing digital one-stop shops for the citizens, thus reducing administrative burden by offering a large number of services from one website.

In recital 25, the introduction of measures to raise human capital and skills would improve the employability of the workers. Given the lack of high-skilled workers, also due to brain drain issues and limited lifelong learning, the acquisition of eSkills appears crucial so that workers can better meet the future needs of the labour market.

Thematic Objective 11

Recommendations

The CSR for Italy makes no recommendation of the need to intervene in the field of TO11.

Recitals

In recital 12, eInvoicing is directly mentioned as a possible solution to increase tax compliance.

Opportunity

In recommendation 2, Italy is urged to reduce the length of its civil trials at all instances. This can be seen as an opportunity for eJustice measures, and thus the use of ICT tools to improve efficiency.

¹¹⁰ COM(2018) 411 final, Council Recommendation on the 2018 National Reform Programme of Italy and delivering a Council opinion on the 2018 Stability Programme of Italy, Brussels, 23.5.2018.

¹¹¹ Firstly, the recommendations are stemming from the European Commission, directly calling on Italy to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Italy. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

3.15.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Italy's NRP.¹¹²

Thematic Objective 2

- **Tax credit for spending on research, development and innovation:** In the context of the Piano Impresa 4.0, the Budget Law 2018 extended the super-amortisation on purchases of capital goods and the hyper-amortisation for the technological and digital transformation processes of companies, as well as the increase of 40% of the cost of acquisition of intangible assets functional to the technological transformation. Moreover, for the three-year period 2018-2020, the measures foreseen by the plan were further strengthened with the allocation of a further 10 billion euros.
- **Tax incentives for creation of innovative start-ups:** After the approval of the European Commission, in October 2017 the tax incentives for those (both individuals and legal entities) investing in innovative start-ups became permanent. According to the data released by the Ministry of Economic Development, as of 31 December 2017, there are more than a thousand innovative start-ups created through the new digital and free mode.
- **Launch of the business portal *impresa.italia.it*:** InfoCamere, the IT company of the Italian Chamber of Commerce has created an online platform through which every entrepreneur will be able to access the information and official documents of his company reducing administrative burden.
- **Improvement of the Public System for Digital Identity:** In line with the objectives of the three-year Plan for Information Technology in the Public Administration 2017-2019, which foresees a strengthening of the digital identity, steps have been taken to improve the Public System for Digital Identity. More than 3,500 public administrations have now joined the system with more than 4,000 online services accessible with the single access control.
- **Launch of the *Alternanza Scuola-Lavoro 4.0 project*:** The project *Alternanza Scuola-Lavoro 4.0*, an initiative created to foster the integration between the world of schools and that of the new digital entrepreneurship, is underway. In the initial phase, more than 60 start-ups will be involved to welcome high-school students with the aim to transmit the entrepreneurial culture of innovation.
- **Continuation of the National Digital School Plan:** The Plan dealt with the development of the digital skills of the students, the training and support of over the teachers on the issues of teaching and digital innovation. For instance, so far between 60 and 70 percent of the schools has provided educational courses on computational thinking, educational robotics and digital citizenship.

¹¹² Italy National Reform Programme 2018. Accessed on 24 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-italy-it.pdf>.

- **Digital transformation of the national road network:** Ministerial Decree n.70 of 28 February aims to incentivise the use of digital technologies, through a process shared with the main stakeholders in the sector and the state concessionaires of services. To support the dissemination of good technological practices in the process of digital transformation of the national road network, an expense of one million euros (for each of the years 2018-2019) is foreseen for the experimentation of Smart Road solutions and connected and automatic driving.

Thematic Objective 11

- **More efficient use of eProcurement tools:** In the context of a general digitalisation process of the country, the programme called *Programma per la razionalizzazione degli acquisti nella PA* aims at making more efficient and effective the use of eProcurement tools for both the public administration and businesses.
- **Extended use of eInvoicing:** In order to fight against tax evasion and consequently avoid losing any revenue that shall go to the state, the use of eInvoicing measures will be extended. As of the first of January 2019, it will become mandatory also for both business to business and business to customer transactions. For activities at a high risk of tax evasion or elusion, the use of eInvoicing is mandatory as from the first of July 2018.
- **Increase of tax compliance through eTax services:** Italy aims to stimulate tax compliance of the taxpayers through a broadened offer of eTax services, which are increasingly used by the users. Among them there are the pre-filled online tax returns and different services accessible via smartphone.
- **Creation of a registry for expropriation procedures:** Further to the launch of the public sales portal where professionals and creditors will be able to insert sales notices for movable and immovable property subject to bankruptcy and executive procedures, the digitalisation process of the judiciary will also include the issuing the decree of the Ministry of Justice and the Ministry of Economy and Finance, which regulates the functioning of the electronic register of forced expropriation procedures.
- **Launch of a knowledge-sharing platform in the context of the public administration simplification:** Dedicated web pages are used to make planned and implemented simplification initiatives known. In this regard, in October 2017, a knowledge-sharing platform aimed to reach public servants, business associations, as well as citizens and professionals was launched.
- **Adoption of the three-year Plan for Information Technology in the Public Administration:** In May 2017, the three-year Plan for Information Technology in the Public Administration 2017-2019 was approved. It aims to effectively guide the digital transformation of the country by defining the guidelines of the operational strategy for the development of 'public information technology' and setting the fundamental architectural principles, as well as the uniform usability and interoperability standards.

- **Digitalisation of school administrations:** School administrations are also interested by the process of digital transformation, with a particular focus on the digital-by-default principle. As part of this, the Teacher's Card has been introduced, which helped create an official digital identity for more than 600,000 teachers. Students shall also become part of this infrastructure.

3.15.5 *Operational Programmes*

For the funding period 2014-2020, four national OPs of Italy are specifically dealing with the themes related to TO2 and TO11. The OP 'Education'¹¹³ on improving the efficiency of public administrations and public services through increased access to and interoperability of public data on education, as well as the definition and development of quality standards and quality management systems. In the OP 'Governance and Institutional Capacity'¹¹⁴ the modernisation of Italy's public administration as to increase transparency, interoperability and access to public data is seen as a key priority. The reduction of administrative burdens and the improvement of the judicial system are also at the centre of the funding priorities, along with the enhancement of online public services and digital inclusion. The OP 'Social Inclusion'¹¹⁵ addresses the needs to improve skills and employability of marginalised people and to find new systems and models for social intervention. This includes the provision of training to public servants to boost their ability to deliver services. Finally, the OP 'Employment'¹¹⁶ supports operations for reinforcing the administrative capacity of the labour market systems.

Thematic Objective 2

- **Enhancement of interoperability and access to public data:** in order to achieve a successful modernisation and digitalisation of the Italian public administration, the OP 'Education' recognises the need to enhance the interoperability of and access to public data. This concerns also school administrations, which are more and more implementing new administrative procedures embracing the 'open government' approach, and providing digital services, like online enrolment.
- **Promotion of digital skills:** The OP 'Employment' stresses the importance of increasingly promote and disseminate the necessary digital skills both in the schools and for the adult population, especially to guarantee the digital inclusion of groups of potentially disadvantaged people.

Thematic Objective 11

- **Adoption of innovative teaching methods with the help of ICT tools:** According to the OP 'Education', digitally equipped schools will be promoted as a way to foster the emergence of

¹¹³ Italy Operational Programme 'Education' 2014-2020. Accessed on 27 November 2018. Available at: http://www.istruzione.it/allegati/2014/PON_14-20.pdf

¹¹⁴ Italy Operational Programme 'Governance and Institutional Capacity' 2014-2020. Accessed on 27 November 2018. Available at: <http://www.pongovernance1420.gov.it/wp-content/uploads/2016/10/Testo-del-Programma-Operativo-Nazionale-Governance-e-Capacit%C3%A0-Istituzionale-2014-2020-CCI2014IT05M2OP002-10-novembre-2016.pdf>

¹¹⁵ Italy Operational Programme 'Social Inclusion' 2014-2020. Accessed on 27 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014IT05SFOP001&lan=en

¹¹⁶ Italy Operational Programme 'Employment' 2014-2020. Accessed on 27 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014IT05SFOP002&lan=en

innovative teaching methods in order to tailor them to the evolving needs of the students. This entails also the possibility of accessing the didactic material through online means.

- **Improvement of the justice system:** The OP 'Governance and Institutional Capacity' aims to improve the efficiency and performance of judicial offices through technological innovation and support the computerisation and digitalisation of the judicial offices. This aims to reduce the length of both civil and criminal proceedings and make the judicial process more efficient.
- **Digitalisation of the public administration:** The OP 'Governance and Institutional Capacity' contains actions aimed at supporting the digitalisation on the public administrations in order to strengthen transparency, accountability and citizens' participation through the development of open data and open government. This in turn aims to achieve the integration and simplification of the processes that affect citizens and businesses, with a focus on the simplicity and usability of services and online communication, as well as on the digital-by-default principle and a reduction of administrative burdens.
- **Improvement of the access to ICT tools and enhance their use and quality.** One of the priorities of the OP 'Governance and Institutional Capacity' is to increase the use of online services. In order to do that, the aim is to provide better and interoperable digital public services to both citizens and businesses.
- **Enhancement of civil servants' digital literacy:** The OP 'Governance and Institutional Capacity' mentions actions aimed to strengthen the digital skills of the civil servants involved in the management and provision of services like ePayments, eInvoicing and eID.
- **Increased transparency, interoperability and access to public data:** The OP 'Social Inclusion' highlights the need to improve the integration of information, statistical and administrative databases by developing shared systems in the social policy field aimed at simplifying citizens' access to public data, as well as allowing the use of existing information by the public administrations themselves, thus reducing administrative burden.

3.16 Latvia

3.16.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Latvia's CSR of 2018.¹¹⁷

Latvia is currently in the preventive arm of the Stability and Growth pact. The Government expects a deterioration of the headline balance from a deficit of 0.5% of GDP in 2017 to 0.9% of GDP in both 2018 and 2019. Improvement is planned in 2020 and 2021 with 0.4% of GDP. Based on the Commission 2018 spring forecast, there is a risk of significant deviation from the medium-term objective in 2018. However, as the outcome for 2017 was better than expected, the risk is lower in 2018.

The income inequality in Latvia is amongst the highest in the EU due to the low redistribution produced by the tax-benefit system. The tax-wedge on low-wage earners remains high which inhibits the promotion of formal forms of employment. The low GDP share in tax revenue results in limited resources for sustainable delivery of public services and social inclusion measures. Therefore, the revenue potential of property and capital taxation is underused relative to other Member States.

Stemming from the high amount of people at risk of poverty or social exclusion in Latvia, the social inclusion should be prioritised. Especially poverty rates among people with disabilities and elderly have been increasing in recent years, currently being amongst the highest in Europe.

As a consequence of adverse demographic developments and emigration, the Latvian labour market is tightening. Furthermore, efforts are needed to increase participation in both initial and continuous vocational education and training. More in particular, adult participation in learning increases only at a slow pace. On top of that, the involvement of the unemployed in active labour market is lower than in most Member States, a concern especially for the high unemployment amongst the low-skilled.

The Latvian health system has undergone reforms and received increased funding. Nonetheless, the public financing to healthcare remains below EU average and the need to implement efficiency-increasing measures remains. The major problems are the lack of communication and cooperation amongst the hospital sectors streamlined hospital sectors and the high out-of-pocket payments. On top of that, the differentiation between full and minimum health services results in lower accessibility for some groups.

The weak regulatory quality and low efficiency and effectiveness of the public administration in Latvia are detrimental to the business environment. While an ambitious reform plan for a more professional public sector has been presented in 2016, the scope of the reforms remains limited to the central administration. As consequence, the effectiveness and efficiency of the municipalities and municipality-owned enterprises are currently not in the reforms. To ensure improvement in the Latvian public administration as a whole, the scope should be opened up.



**Economic
Outlook**



**Fiscal
Framework**



**Social
Inclusion**



**Labour
Market**



Healthcare



**Administrative
and
Regulatory
Barriers**

¹¹⁷ COM(2018) 413 final, Recommendation for a COUNCIL RECOMMENDATION on the 2018 National Reform Programme of Latvia and delivering a Council opinion on the 2018 Stability Programme of Latvia, Brussels, 15.6.2018.

Latvia still faces threats to its business environment in the form of corruption and money laundering. The Commission urges to curb the delay in legislation on the whistle-blower protection. Furthermore improvements in the justice system including the continuous strengthening of the anti-money laundering framework is required.

3.16.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Latvia since 2017. The information originates from the eGovernment Factsheet of Latvia.¹¹⁸

Strategy

In July 2017, the Latvian Government finalised a report aimed for improving the environment of public services provision. This report includes proposals for modernisation of public service provision as well as ensuring efficiency and comprehensive availability of electronic public services. Amongst the strategic actions, there is also the approval of the Third National Action Plan for Open Government, part of the Open Government Partnership. The Plan promotes progress toward zero bureaucracy and envisions the improvement and implementation of various electronic services, such as an open-source public data portal, a research and publication database as well as a database with state-owned companies. Further developments within the Plan include the development of a portal to support the reduction of administrative burdens for entrepreneurs and residents.

Legal Framework

New regulations were adopted and implemented on governing the provision of digital public services. The Law on Official Electronic Address came into force in March 2018. The main aim of the law is to provide secure, efficient and high-quality electronic communications and handling of electronic documents between public entities and private individuals. A new Personal Data Processing Law is set out to enter into force from May 2018, transposing the GDPR into national law.

Infrastructure

In 2017, the Government launched the new Latvian Open Data Portal that will serve as a single point of access to open government data. Citizens are given the possibility to access the current and historical medical data of patients. Furthermore, the National Electronic Procurement system was updated and now deploys standardised forms to simplify and reduce administrative burden for entrepreneurs.

Services

In the framework of eHealth, the ePrescription service has been created and its use is mandatory for all doctors and pharmacies since 2018.

¹¹⁸ eGovernment Factsheet of Latvia 2017. Accessed on 18 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Latvia_2018_0.pdf.

3.16.3 *Country Specific Recommendations*

The CSR for Latvia¹¹⁹ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹²⁰

Thematic Objective 2

Recommendations

The CSR for Latvia makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for Latvia makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

In recommendation 2, Latvia is urged to consider upskilling of low-skilled workers and jobseekers as part of the CSR recommendations. The education in eSkills to improve digital literacy of unemployed citizens or those working low-skilled jobs could therefore be an opportunity.

The CSR includes in both recommendation 2 and recital 12 a reference to the need of increased accessibility, quality and cost-effectiveness in the healthcare system. By introducing eHealth services, the three issues could be addressed.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Latvia

3.16.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Latvia's NRP.¹²¹

Thematic Objective 2

- **Development of the eHealth system:** The Latvian government has made an eHealth system available to residents, medical institutions and pharmacies since 12 September 2016. By November 2017 all inpatient medical institutions signed the agreement with the National Health Service to use the health information system. The eHealth portal www.eveseliba.gov.lb provides residents access to their electronic healthcare and enables medical practitioners to write medical documents such as ePrescriptions, eSick leaves and execute eReferrals.

¹¹⁹ COM(2018) 413 final, Council Recommendation on the 2018 National Reform Programme of Latvia and delivering a Council opinion on the 2018 Stability Programme of Latvia, Brussels, 15.6.2018.

¹²⁰ Firstly, the recommendations are stemming from the European Commission, directly calling on Latvia to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Latvia. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

¹²¹ Latvia National Reform Programme. Accessed on 18 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-latvia-en.pdf>.

- **Infrastructure development:** Latvia intends to ensure equal access to electronic communications across the country. Therefore, a broadband network is being developed based on EU recommendations. The purpose is that by the end of 2020, the second stage of the programme Next Generation Networks in Rural Territories will have built a total length of optical cable lines of 2200 km. In the frame of strengthening the capacity of municipalities in attracting companies and investments, the Government aims to provide free and fast wireless electronic communication in public places, e.g. libraries, research centres, railway stations, ports, airports, public administrations and local governmental buildings. The Policy Plan for the Electronic Communications Sector for 2018-2020 has been approved in 2018. The Plan sets out two action lines: to foster provision of qualitative and user centric services and to create conditions for the use of innovative technologies.
- **Digitalisation of Cultural Heritage Content:** Latvia plans to set up a single open information system that creates cultural heritage digitalisation and competence centres. The finalisation of the system aims to resolve the matters on copyright, long-term preservation of digital cultural heritage and the reuse of open data in the cultural sector.
- **Educate on Safe Internet for Children:** In order to ensure that children and their parents understand how children can use internet in a safe way, Latvia invested in a new project that will be carried out by the Safer Internet Centre. This project called Safer Internet, aims to educate and inform society about safety of children on the internet.
- **Development of eSkills:** In order to enhance the information society, the opportunity will be given to the Latvian population to learn eSkills relevant to their education and professional activity. The education aims to encourage unemployed, employees of small and medium-sized enterprises and citizens to learn eSkills. Furthermore, also the employees of public administration will receive an eSkills training. It is expected to improve the medium level ICT skills of the population reaching 40% in 2020, the eCommerce will have a turnover from the internet of 15% in 2020 and by the same year, public administration efficiency will increase to 85%. To put the use of ICT in practice, a Campaign for promotion of use of ICT usage possibilities by the Society runs from March 2018 until June 2020. The aim is to teach 6000 digital agents that will be able to provide the public with consultations on the use of digital government.
- **Modernisation of public administration:** In order to reduce the bureaucratic barriers, the Latvian Government has introduced the one-stop shop principle. Therefore, the Portal www.latvija.lv is reviewed and updated on a regular basis. Starting from 1 March 2018, the Law on Official Electronic Address entered into force and mandated the organisation of official communication between public administration and its customers only in electronic form and in one place.

Thematic Objective 11

- **Cybersecurity:** The Law on Information Technology Security has been amended in July 2017. The purpose of this Law is to improve the security of information technologies, specifying the most important requirements in order to guarantee the receipt of such essential services. As additional element of security, the use of eID was made mandatory and is identified as the primary mean of personal identification starting from 2023, a process of which the transition period starts in 2019. The eServices are planned to be adapted to the requirements of the eIDAS Regulation.

3.16.5 *Operational Programmes*

For the funding period 2014-2020, one OP of Latvia is specifically dealing with themes related to TO2 and TO11. The OP 'Growth and Employment'¹²² focuses on promoting the information society; ensure competitiveness and innovation of SMEs; promoting employment and work force mobility; investments in education; skills and lifelong learning; enhance social inclusion and fight against poverty and efficient administration of the EU funding.

Thematic Objective 2

- **Digitalisation of rural areas:** To reduce the digital divide between low and high economic interest areas, Latvia plans to contribute to the continuation of the 2007-2013 project 'broadband communication infrastructure in rural areas'. The aim is to ensure increase the mobility of the rural population and the business community by using the high-quality broadband service benefits, e.g. access to e-services, high-volume data transfer or e-commerce.
- **Promotion of ICT in businesses:** Latvia acknowledges the benefits of ICT and its application in the commercial and socio-economic environment, in particular regarding information exchange. To support the continuous use of ICT in economic activity, there is a need for broadband network development and the development of digital infrastructure.
- **Creation of eHealth infrastructure:** Latvia plans to continue the efforts on the eHealth integration platform that was set up in the 2007-2013 planning period. Furthermore, systems that will transform the health sector, like eReferral, electronic health records, ePrescription and a single eHealth portal will be put in place. To ensure a successful implementation in the EU framework, eHealth solutions for interoperability and standardisation will be considered.
- **Fostering of eSkills:** Investments are to be continued to develop eLearning solutions. Latvia aims to expand the educational information system's current capacity by integrating it in other information systems. Furthermore, ICT investments to ensure digital teaching materials and a digitalisation of the education will be made.
- **Development of eCulture:** to ensure that the Latvian cultural heritage is as widespread as possible and can be freely available online, the process of digitalisation of cultural resources

¹²² Latvia Growth and Employment Operational Programme. Accessed on 23 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/latvia/2014lv16maop001

is ongoing. ICT opportunities to access culture promote not only cultural presence online but also promote new products and services. Latvia intends to continue to finetune the earlier investments made to protect cultural heritage, including the creation of the digital library of eServices. The next step entails the set-up of publicly accessible digital collections and making cultural content resources available to the general public. Furthermore, the cultural guidelines 'Creative Latvia' will be digitalised.

- **Creation of ICT infrastructure:** Latvia indicated to foster its ICT infrastructure by establishing a centralised administration and ICT platform with interfaces transformation, modernisation and semantic technology.
- **Provision of eServices:** to enhance the operational process of public administration as well as the service delivery, Latvia intends to invest in transformation and optimization through ICT. By establishing electronic services, the most cost-effective solutions such as the one-stop shop principle and user support security can be established. Furthermore, these innovations will raise the possibility of ICT use for citizens.
- **Enhancement of digital administration:** Latvia aims to foster the use of eServices by its citizens. Therefore, it will not only ensure the citizens possess the adequate skills to benefit from digital services but also enhance the digitalisation process of the health, education, justice and cultural services, continuing the transformation towards fully digitalised administrations.

Thematic Objective 11

- **Establishment of an open data system:** Latvia will deploy the SAM framework to enhance and improve data exchange, data publication and availability of data. A centralised information interoperability platform will be established that ensures full public electronic data exchange between systems and increase opportunities for local information systems to transfer data to the state information systems in a secure way and open for citizens.
- **Stimulation of eInvoicing:** The government will stimulate the development of information and data services that can be used in the creation of services for private sector e-business and eCommerce solution. Furthermore, it considers eInvoicing as one of the e-business development-enhancing aspects of ICT investment.
- **Development of eGovernment and interoperability:** To ensure Latvian integration into the European single market and to ensure cross-border cooperation, it is planned to provide the national e-solution for interoperability with the EU solutions, including the creation of machine translation technology base.
- **Digitalisation of justice system:** to ensure a timelier processing of the case load and related problems, Latvia will develop a wide range of modern ICT based solutions to use in judicial proceedings. These eSolutions include an investigations and judicial proceedings eFile solution and also introduce the process of eProceedings. Furthermore, a centralised electronic archive data system will be introduced to monitor the judicial process quality.
- **Innovation capacity building:** Latvia intends to respond to the current challenges in the field of research and development. Therefore, it will invest in innovation capacity building with

attention for knowledge-based development and scientific and technological development of human capital, including in the field of ICT.

3.17 Lithuania

3.17.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Lithuania's CSR of 2018.¹²³

Lithuania is currently in the preventive arm of the Stability and Growth Pact. The Government anticipates maintaining a headline surplus of 0,6% of GDP from 2018 to 2020. The medium-term budgetary objective, a deficit of 1% GDP, is planned to be met throughout this period. Due to the implementation of systemic pension reform as well as structural reforms, Lithuania was granted a temporary deviation in 2016 and 2017. These deviations are carried forward for a period of three years. The Commission 2018 spring forecast states that the structural balance is forecasted to remain above the medium-term budgetary objective in both 2018 and 2019.



Despite the reform of the Lithuanian tax system, the environmental and recurrent property taxes remain below the Union average. The tax base should be broadened in order to improve tax collection and close the value added tax gap, which is currently among the widest in the EU.



In 2018, a new pension indexation formula is introduced to ensure the fiscal sustainability of the Lithuanian pension system. Nonetheless, the current system is driven by a decline in benefit ratio since the total wage bill is projected to increase at a slower pace than wages as a consequence of the rapidly shrinking working-age population. Therefore, concerns are raised about the pension adequacy, which is among the lowest in the Union.



Following the robust economic growth and adverse demographic developments and emigration, the labour market is tightening quickly. As a result, skills shortages come up in Lithuania. An education and training system that provides everybody with the relevant skills is thus required. In addition, the persistent demographic pressures affected the efficiency of the education, making the need for equitable access to quality and inclusive education more urgent. As the Lithuanian pupils perform below average in basis skills, reforms in teachers' initial training as well as other quality-focused reforms are needed. Furthermore, the participation of adults in learning low and the content of the vocational education and training curriculum is outdated. The training offer should thus be enhanced.



As the Lithuanian benefit system is one of the lowest in the Union, the elderly, people with disabilities, children, single parent households and unemployed of Lithuania are at risk of poverty and social exclusion. The Government has taken significant steps to fight poverty but room for improvement remains and more efforts could be done to incentivise labour market participation, in particular among the vulnerable groups.



Progress has been made in strengthening the corruption prevention framework by adopting legislation on lobbying and whistle-blower protection. Nonetheless, the implementation of the legislation remains a challenge. In addition, the corruption in the health sector has not been improved despite the Government's dedicated programme.



¹²³ COM(2018) 414 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Lithuania and delivering a Council opinion on the 2018 Stability Programme of Lithuania, Brussels, 15.6.2018.

3.17.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in Lithuania since 2017. The information originates from the eGovernment Factsheet of Lithuania.¹²⁴

Legal Framework

In March 2017, the Lithuanian Government adopted a decree for the implementation plan of the government's programme (2016-2020). The plan included the creation of advanced eServices and the introduction of the eVoting system. Furthermore, to finalise the consolidation of the management of cybernetic and electronic security, the law on Cyber Security was amended in November 2017.

Organisational Change

The Ministry of Defence has taken over the overseeing and coordination of the cyber security strategy, which was previously under the mandate of the Ministry of Interior. The motivation for this change in responsible Ministry is that now there is a single window for relevant stakeholders when it comes to security, including cyber security. In addition, a unified National Cyber Security Centre is created and functions as the main computer emergency response team.

3.17.3 Country Specific Recommendations

The CSR for Lithuania¹²⁵ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹²⁶

Thematic Objective 2

Recommendations

The CSR for Lithuania makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for Lithuania makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

The CSR points out in the second recommendation and recitals 10 and 11 that the Lithuanian labour market is suffering skills shortages. Therefore, an education and training system needs to be put in place to provide citizens with the relevant skills. eSkills should therefore be included in these trainings and can help to meet the needs of the labour market. On top of that, the eSkills can serve as a tool to enhance the adult learning, which is currently underdeveloped.

¹²⁴ eGovernment factsheet of Lithuania 2017. Accessed 20 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Lithuania_2018_0.pdf.

¹²⁵ COM(2018) 414 final, Council Recommendation on the 2018 National Reform Programme of Lithuania and delivering a Council opinion on the 2018 Stability Programme of Lithuania, Brussels, 15.6.2018.

¹²⁶ Firstly, the recommendations are stemming from the European Commission, directly calling on Lithuania to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Lithuania. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

The second recommendation and recital 12 state the healthcare system faces challenges in Lithuania, being too hospital-centric and lacking effectiveness. Furthermore, the corruption in healthcare is not resolved despite the Clean Hands Programme of the Government. Primary care needs to be strengthened and disease prevention and health promotion policies need to be put in place. eHealth can serve as a tool to curb the current issues in the health sector.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Lithuania.

3.17.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Lithuania's NRP.¹²⁷

Thematic Objective 2

- **Enhancement of eSkills:** In the framework of the Action Plan for the Development of Lifelong Learning 2017-2020, an electronic centralised system for admission to vocational education and training has been developed. Particularly, to improve the digital skills of children, a pilot project on the development of informative skills in primary schools is being launched in ten schools in 2018.
- **Supporting digitalisation of industries:** In order to support the digitalisation work of industries, the Lithuanian Government supports two activities: firstly, the possibility to audit an industrial SME's potential for digitalisation of their work and secondly, the set-up of production process equipment of industrial SME's with integrated digitalisation technologies.

Thematic Objective 11

Lithuania's NRP makes no specific reference to measures related to TO11.

3.17.5 *Operational Programmes*

For the funding period 2014-2020, one OP of Lithuania is specifically dealing with themes related to TO2 and TO11. The OP 'Growth and Employment'¹²⁸ focusses on promoting the information society; ensure competitiveness and innovation of SMEs; promoting employment and work force mobility; investments in education; skills and lifelong learning; enhance social inclusion and fight against poverty and efficient administration of the EU funding.

Thematic Objective 2

¹²⁷ Lithuania National Reform Programme 2018. Accessed on 20 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-lithuania-en.pdf>.

¹²⁸ Lithuania Operational Programme for EU Structural Funds Investments for 2014-2020. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/lithuania/2014lt16maop001

- **Enhancement of broadband internet access:** to meet the objectives set out in the Digital Agenda, Lithuania will speed up the process of providing a minimum of 30Mbps internet access across all households. This will benefit not only households but also business enterprises and public sector institutions.
- **Fostering safer digital environment:** As the amount of security incidents monitored by the Lithuanian National Computer Emergency Response Team continues to grow, the Government set out the objective to put strengthen the protection of ICT infrastructure and resources. Furthermore, Lithuania aims to ensure that ICT infrastructure meets the highest safety requirements using the following strategy: identify objects of the information structure of particular importance, develop and implement methodology to monitor these objects, provide support for the protection of ICT infrastructure with the necessary technological tools.
- **Promote the reuse of public data:** Lithuania intends to encourage the reusing of public sector data as it believes this creates considerable opportunities for setting up new businesses and jobs. This objective is aimed at developing tools to ensure a transparent, efficient and convenient way to make public sector information available for reuse and encourage businesses and other stakeholders to actively use this information for the development and delivery of new digital services and products. In this way the objective will contribute to the development of new business opportunities, including electronic commerce.
- **Increase the use of internet:** Lithuania would like to increase the share of the population that uses internet and eServices. Therefore, it will provide free-of-charge public access to internet for individuals in public libraries to enhance digital competences. This way, citizens can discover the potential of internet without making the investment in putting in place infrastructure themselves first.
- **Ensure safe use of internet:** Lithuania intends to enhance cybersecurity by investing in technological solutions. These investments will be accompanied by an awareness campaign on safe and responsible conduct in the cyber space. In addition, Lithuania will encourage people to use internet more safely, effectively and responsibly by creating a self-help and cooperation-based network of communities and developing tools to promote the use of eCommerce and eServices.
- **Deliver eServices:** To ensure advanced eServices for individuals and businesses, Lithuania will deploy ICT solutions in administrative procedures and digitalise public administration. The aim is to develop customer-oriented administrative eServices. The investments will come from the Administrative Public eService Design, Typing and Evaluation Model and will include electronic public procurement; expansion of the electronic health system and electronic health services; dissemination of the Lithuanian cultural digital content; expansion of electronic democracy (development of measures for openness, transparency and involvement of citizens) and advanced ICT solutions for intelligent transport systems and universal post service.
- **Establish digital business environment:** The Government of Lithuania will support SME projects that focus on the implementation of eSolutions for businesses. These include efforts

that aim to optimise business processes such as customer service, logistics, eMarketing and resource management using information technologies.

Thematic Objective 11

- **Development of eProcurement system:** To improve the existing public procurement system, Lithuania provides funding to tackle the transparency and efficiency of public procurement. This implies setting out activities related to the development of electronic and centralised procurements.

3.18 Luxembourg

3.18.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Luxembourg's CSR of 2018.¹²⁹

Luxembourg is currently in the preventive arm of the Stability and Growth Pact. The Government foresees a decrease in the headline surplus from 1,5% GDP in 2017 to 1,1% of GDP in 2018. An almost steady increase is expected thereafter, reaching a surplus of 2,4% of GDP in 2022. The medium-term objective, a structural deficit of 0,5% of GDP, continues to be met with a margin throughout the programme period. The Commission 2018 spring forecast indicates the structural balance is forecast to register a surplus of 0,8% of GDP in 2018.



**Economic
Outlook**

The Luxembourg tax rules are used by companies that engage in aggressive tax planning. Furthermore, the majority of the foreign direct investment is held by special purpose entities. Luxembourg takes positive steps to tackle the taxpayers aggressive planning strategies, an essential measure to prevent distortions of competition between firms.



**Tax
System**

The Luxembourg Government continues its efforts to diversify the economy. The selected sectors that are being developed include information and communication technologies industry and the space sector. Due to the high labour costs, the diversification of the economy should focus on sectors that are less sensitive to labour costs. The long-term sustainability of public finances remains a concern due to the projected increase in ageing costs. As Luxembourg has a high projected increase in the proportion of old-age population, the operational balance of the pension system risks to run a deficit by 2023. In addition, the employment rate of older people remains low, requiring more measures to improve their employability and labour market opportunities.



**Labour
Market**

The Luxembourg real estate prices have continued to rise. These house price pressures emerge from a fundamental supply and demand mismatch. On the supply side, insufficient land availability and lack of incentives for private owners to sell land or buildings is the main bottleneck. On the demand side, high population and employment growth push the prices up. As a result, traffic congestion and pollution have exacerbated, and concerns rise about the sustainability of household debt.



**Housing
Market**

3.18.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in Luxembourg since 2017. The information originates from the eGovernment Factsheet of Luxembourg.¹³⁰

Strategy

As part of the *Einfach Lëtzebuerg* programme adopted in 2016, projects are still up and running to modernise the public administration. These projects focus on actively involving citizens in the

¹²⁹ COM(2018) 415 final, Council Recommendation on the 2018 National Reform Programme of Luxembourg and delivering a Council opinion on the 2018 Stability Programme of Luxembourg, Brussels, 15.6.2018.

¹³⁰ eGovernment Factsheet for Luxembourg. Accessed on 21 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Luxembourg_2018_0.pdf.

discussion process, reducing administrative and regulatory burdens and simplifying as well as improving the design and quality of legislation and legislative processes.

Legal Framework

A new act on eProcurement has been adopted in March 2018. It entails the four following objectives: enabling public markets to become an instrument of political strategy; introduction of measures of simplification; prevention of conflicts of interest, favouritism and corruption; and clarification of certain procurement rules. Furthermore, Luxembourg has transposed the GDPR into national law in May 2018.

Infrastructure

The My Guichet Portal continues to be revised and as a result, citizens can now follow the procedures of their health insurance online. On top of that, the website has been made available in English, in addition to the French and German. Furthermore, the government.lu portal has been updated and the new version was published in February 2018. The most significant innovation was making the portal available in English, German and Luxembourgish additionally to French.

Services

The Government is launching a new service that will be provided by the Administration of Land Register and Topography. Citizens will be enabled to consult online the property rights (parcels and private lots). The private data can be accessed via the My Guichet portal.

Other Highlights

Luxembourg has developed Infrachain, a non-profit organisation created by the emerging blockchain-related industry and with the support of the Luxembourg Government. Its missions are creating a compliant-ready community and permissioned node blockchain infrastructure, provide disintermediation services to all aspects of the economy and the creation of a vibrant European community for blockchain professionals. Additionally, Luxembourg hosts of the headquarter of the EuroHPC, the world's first data embassy and the digital pole of the European Commission.

*Other
Highlights*

3.18.3 Country Specific Recommendations

The CSR for Luxembourg¹³¹ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹³²

Thematic Objective 2

Recommendations

¹³¹ COM(2018) 415 final, Council Recommendation on the 2018 National Reform Programme of Luxembourg and delivering a Council opinion on the 2018 Stability Programme of Luxembourg, Brussels, 15.6.2018.

¹³² Firstly, the recommendations are stemming from the European Commission, directly calling on Luxembourg to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Luxembourg. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

The CSR for Luxembourg makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for Luxembourg makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

The first recommendation in the CSR for Luxembourg tackles the issue of the employment rate of older people. In order to keep them engaged in the labour market, recital 13 points out that measures need to be taken to improve their employability and labour market options. The training of older people aiming to develop eSkills could raise their labour market opportunities.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Luxembourg.

3.18.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Luxembourg's NRP.¹³³

Thematic Objective 2

- **Creation of the e-commerce platform LetzShop.lu:** The Government launched an e-commerce platform project within the framework of the Pact PRO Commerce, together with the Chamber of Commerce, the Luxembourg Confederation of Commerce and the larger municipalities. The aim of the platform is to function as a digital showcase for all businesses in Luxembourg and to enable traders to strengthen their visibility and/or enhance their image. Furthermore, the customer services are increased by offering a dynamic, fast and efficient online shopping experience for the customers.
- **Digitalising research projects on arts and humanities:** Luxembourg is a founding member of DARIAH, an infrastructure that supports digital research in the arts and humanities. Luxembourg participates in the European Research Area digital framework and in this regard, the Digital Lëtzebuerg Strategy aims to reinforce the position of the country with regards to research and ICT. Therefore, the Government made efforts to effectively manage the transition to Open Access in Luxembourg to carry out research projects in the field of digital humanities. These include the digital resources that enhance the range of electronic publications managed by the National Library of Luxembourg. There is also the tier of digital humanities, which is a cooperation between the National Library and the National archives together with the University of Luxembourg. Together they ensure the continuation of the digitalisation projects of the research projects in the field of digital humanities.

¹³³ Luxembourg National Reform Programme 2018. Accessed on 21 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-luxembourg-en.pdf>.

Thematic Objective 11

Luxembourg's NRP makes no reference to measures related to TO11.

3.18.5 *Operational Programmes*

A thorough evaluation of the Luxembourg's national OPs for the 2014-2020 financing period has revealed that there are no initiatives under TO2 and TO11 that would fall under the scope of this study.

3.19 Malta

3.19.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Malta's CSR of 2018.¹³⁴

Malta is currently in the preventive arm of the Stability and Growth Pact. The Government aims to maintain a surplus in headline terms for the period 2018-2021. Throughout this period, the medium-term budgetary objective continues to be met with a positive margin. The general government debt-to-GDP ratio is expected to remain below the 60%-of-GDP Treaty reference value. The Commission spring forecast states a structural balance is forecast to register a surplus of 0,6% of GDP in 2018. Nonetheless, the expenditure developments should be monitored carefully in the short and medium term, in particular in light of possible future risks of the robustness of revenues.

In light of the 2018 Euro Area Recommendation, the fight against aggressive tax planning strategies is essential to impede distortions of competition between firms, provide fair treatment of taxpayers and safeguard public finances. In Malta, the absence of withholding taxes on outbound dividends, interest and royalty payments made by Malta-based companies may lead to those payments avoiding tax all together. The new National Interest Deduction regime that aims to reduce the debt equity bias contains insufficient anti-abuse rules. Furthermore, the existence of some provisions in bilateral tax treaties between Malta and other Member states, coupled to the Maltese tax system, where a company that is resident but not domiciled in Malta is taxed on source and remittance basis, may be used by companies to engage in tax avoidance practices.

The budgetary impact of age-related costs, such as healthcare, long-term care and pensions form a challenge for the long-term sustainability of the public finances in Malta. The pension system in particular faces the dual challenge of achieving sustainability while ensuring adequate retirement incomes. The measurements introduced by the Government in the 2016 budget only resulted into a limited impact on the pension system's long-term sustainability. Furthermore, the gender coverage gap in pensions remains high. The existing pension system affects the health sector, where challenges already persist regarding the redistribution of resources and coordination between hospital to primary care.

The outcomes of the labour market have improved thanks to the strong economic growth and reforms by the Maltese Government supporting the female employment and up-skilling of the workforce. However, the gender employment gap remains high while the labour market participation of women above the age of thirty and people with disabilities remains low. To solve these challenges, reforms in the design of paternity leave and parental leave, which are currently weak, should be put in place. Furthermore, the labour shortages continue to grow which indicates the persistence of skills mismatches.

Progress has been made in the field of cross-border cooperation. Nonetheless, the Malta Financial Services Authority still appears understaffed. Furthermore, the services sector has significantly



**Economic
Outlook**



**Tax
System**



**Pension
System**



**Labour
Market**



**Justice
System**

¹³⁴ COM(2018) 417 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Malta and delivering a Council opinion on the 2018 Stability Programme of Malta, Brussels, 15.6.2018.

contributed to the economic growth, in particular the online gaming industry. However, this may create challenges to the financial system's integrity. A strong anti-money laundering framework is thus needed. The justice system also needs to continue combating corruption and improve its efficiency. Efforts to enhance the investigation and prosecution of corruption are needed.

3.19.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Malta since 2017. The information originates from the eGovernment Factsheet of Malta.¹³⁵

Strategy

Malta launched a Cyber Security Awareness Campaign in January 2017 which aimed to cover the online security interests of the Maltese public sector, the citizens and the private sector. In the frame of cyber security, Malta chairs, as president of the Council during the first half of 2017, the Council's Horizontal Working Party on Cyber Issues. Furthermore, a new Malta Information Technology Agency Strategy has been adopted for the period of 2018- 2020. The strategy sets out a vision to enable the Agency to be the digital driver for the transformation of Government and to help the public administration to transform through the digitalisation of public services. As part of the Mobile Government Strategy, a total of 20 different 'mServices' were launched in March 2017. These services focus on extending and complementing the existing communication channels in the exchange of information between Government and citizens. The services are all available to citizens via one single app, Maltapps.

Organisational Change

The Maltese Government considers the Local Government as the main vehicle to attainment and promote digital services at a local level. Therefore, it is the task of Local Governments to align their policies to the National Digital Strategy 2014-2020.

Infrastructure

In 2017 the final phase of the simplification of the eID authentication mechanism was completed. The purpose is to align the basic authentication level using the eID account combined with a password and the high authentication level using the ID Card login. The result will be a better choice of usability and security for users accessing digital public services. In 2018, the main focus is to address the technical gaps of the eID system with the GDPR (No 2016/679). Another change in the infrastructure can be found in the launch of the servizz.gov.mt website. The website offers different means to access the government services. Citizens can use either the five regional servizz.gov hubs or the apps available on Maltapps. Through the website, the citizens can report excessive bureaucracy, file a complaint, provide suggestions or request information.

¹³⁵ eGovernment Factsheet for Malta. Accessed on 24 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Malta_2018_0.pdf.

Services

Various Government services have introduced innovations to digitalise their functioning. The Mater Dei Hospital launched a service that reminds patients of scheduled hospital appointments at least 10 days in advance. The Social Security Department collaborated with the Malta Information Technology agency to create online services that citizens can access through the Social Security website. The services enable the calculation of Retirement Pension rates and Elderly contribution deductions. The Customs Department also collaborated with the Malta Information Technology Agency to launch the National Import and Export System. The aim of the project is to enable a system-to-system facility to exchange information with the trading community as well as providing a better user experience to economic operators and customs officers.

3.19.3 *Country Specific Recommendations*

The CSR for Malta¹³⁶ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹³⁷

Thematic Objective 2

Recommendations

The CSR for Malta makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for Malta makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

In both the second CSR recommendation and recital 7, it is pointed out the healthcare system needs to be made more sustainable. Therefore, the establishment of eHealth provisions could improve the current situation and curb the challenges at hand.

Recital 9 mentions that skills mismatches are persisting in the labour market while labour shortages grow. In order to tackle this threat for the employment, re-orientation and upskilling the workforce is needed. The focus on developing eSkills could provide a solution that enables more citizens to become active in the labour market and decrease the skills mismatches.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Malta.

¹³⁶ COM(2018) 417 final, Council Recommendation on the 2018 National Reform Programme of Malta and delivering a Council opinion on the 2018 Stability Programme of Malta, Brussels, 15.6.2018.

¹³⁷ Firstly, the recommendations are stemming from the European Commission, directly calling on Malta to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Malta. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

3.19.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Malta's NRP.¹³⁸

Thematic Objective 2

- **Tackle the digital skills mismatch:** In July 2017, the National Skills Council put in place a sub-committee to identify a workable approach to address identified digital skills mismatches. Their report needs to contain analysis of the situation as well as providing a set of recommendation to tackle the problem. Furthermore, the eSkills Malta Foundation, a multi-stakeholder initiative between Government, education and industry focussing on enhancing eSkills, continues to work on increasing the digital capacity and skills of Maltese ICT practitioners, labour force and citizens. The current focus of the Foundation is to support and complement initiatives regarding digital innovation and start-ups.
- **Enhancement of ICT start-ups:** The Malta Information Technology Innovation Hub was set up in 2014 to synergise efforts of various parties aimed towards ICT-themed research and technological development, idea-generation, incubation and open-innovation. Since 2016 the YouStartIT programme was launched, making it the first accelerator programme that aims to fund and support up to 45 start-ups during the period 2016-2020.
- **Modernisation of Public Administration:** The commitment to modernise public administration can be found in the progress eGovernment services in Malta make. One example is the use of ICT in the Achievement of Government's Simplification and Reduction of Bureaucracy Agenda aims to improve the accuracy and timelines of the data capture as well as reduce the physical visits by citizens to the Social Security Department. Another eGovernment service is the provision of the Courts to offer real time services to services as well as legal profession to increase the case clearance rate and decrease the disposition time.

Thematic Objective 11

- **Fostering a digitally-enabled nation:** The 2014-2020 Digital Malta Strategy is currently being implemented. The aim of the strategy is to increase competitiveness and boost the attractiveness of the local industry. The strategy outlines three main themes: digital citizens, digital government and digital businesses. The objective is to promote more start-ups, foreign investment, enable strategic alliances, find opportunities to expand into new or bigger markets.

¹³⁸ Malta National Reform Programme 2018. Accessed on 24 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-country-malta-en.pdf>.

3.19.5 Operational Programmes

For the funding period 2014-2020, two OPs of Malta are specifically dealing with themes related to TO2 and TO11. The OP 'Investing in human capital to create more opportunities and promote the wellbeing of society'¹³⁹ will focus on employment, social inclusion, strengthening education and training systems and improve administrative capacity and efficiency. The OP 'Fostering a competitive and sustainable economy to meet our challenges'¹⁴⁰ sets out the ambitions to strengthen competitiveness of SMEs; promote social inclusion and invest in education.

Thematic Objective 2

- **Empowerment of persons with special needs:** To ensure all citizens are empowered to seize opportunities that will improve their lives, the Maltese government aims in OP 'Investing in human capital' to eliminate all barriers to training, education and other support measures which socially excluded persons and vulnerable groups might face, including digital illiteracy. Efforts will be made to provide the most vulnerable citizens with basic ICT skills, which is key in today's society.
- **Investment in digital skills:** Malta aims to enhance the educational experience by involving the use of digital technologies and IT applications. To ensure a smooth implementation, according to OP 'Investing in human capital', complementary teacher trainings in ICT will be organised. Furthermore, support will go to the investments in digital literacy and eLearning to increase the computer skills and number ICT literate persons in Malta. One of the more specific target groups contains the farmers, that will be taught the relevant eSkills.
- **Enhance eServices:** As indicated in the Digital Malta Strategy, various entities providing services such as healthcare, welfare, justice, tourism, utilities and transport, amongst others, require specific ICT programmes which enable them to serve customers and cut across boundaries. In addition, through specific IT platforms and data sets, Government aims to improve service delivery and enable the shift towards new technologies. To this end, the Government states in OP 'Fostering a competitive and sustainable economy' it will aim to simplify digital public services, extend Government transparency, make government services accessible and increase citizens' engagement with government, amongst others, by further developing e-Government services.
- **Support interventions in eHealth:** To provide eHealth services, Malta will facilitate the accessibility of health and clinical data through electronic means to enable more efficiency, flexibility and transparency in the delivery of healthcare practises for citizens as pointed out in OP 'Fostering a competitive and sustainable economy'. Both the eHealth and m-services developed in the Digital Malta Strategy are planned to provide citizens secure and easy

¹³⁹ Malta Investing in Human Capital Operational Programme. Accessed on 28 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014MT05SFOP001&lan=en

¹⁴⁰ Malta Fostering a competitive and sustainable economy to meet our challenges Operational Programme. Accessed on 28 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/malta/2014mt16m1op001

access to their health records as well as equip health care providers with secure access to patients' records.

- **Development of public clouds:** To reduce the administrative burden and smoothen the interface between Government services and enterprises, Malta will support measures to develop innovative public clouds. This will happen, according to OP 'Fostering a competitive and sustainable economy', through the provision of online Government certified ICT services. Furthermore, as a measure for increasing competitiveness and innovation, Malta is considering opening the access to its base registers.
- **Modernisation of businesses:** The Government plans financial incentives in OP 'Fostering a competitive and sustainable economy' to support enterprises' transformation towards innovative and digital enterprises that allow users to transmit information electronically, embrace smart application of web technologies and ICT products. The support measures include infrastructural investments for cloud computing mechanisms, and efforts to raise productivity and efficiency through the use of ICT and e-based solutions. Furthermore, the provision of a 'single window' system will be created to simplify information flows between trade and Government in cross-border interventions. As particular sector Malta is investing in, is digitalising the tourism sector to interact electronically on B2B and B2C level. The government is thus fostering both eCommerce and eTourism services.
- **Enhancement of digital learning:** Malta acknowledges in OP 'Fostering a competitive and sustainable economy' more efforts are needed to encourage digital learning amongst citizens. As eSkills are necessary to ensure access to the benefits of ICT, such as better employment prospects and social inclusion, the government plans more investment in actions that develop ICT skills. Besides focussing on citizens only, the Digital Malta Strategy also targets to increase ICT entrepreneurial activities and support businesses in being more digitally literate and innovative
- **Stimulation of ICT in private sector:** As set out in OP 'Fostering a competitive and sustainable economy', Malta will allocate 8% of its European Regional Development Fund resources to stimulate investment in ICT and e-based solutions within the private sector. For the period of 2014-2020, the government will build on the existing framework to further increase the take up of eServices by enterprises. Actions will be installed to facilitate the exploitation of digital technologies to increase competitiveness.

Thematic Objective 11

- **Reform of justice system:** Based on OP 'Investing in human capital', the justice reform in Malta will include an upgrade of the existing infrastructure as well as investment in ICT technology. Furthermore, the capacity building and training of court personnel to support this digital reform will be put in place.
- **Implementation of eGovernment and Interoperability Framework:** Malta recognizes in OP 'Investing in human capital' ICT as a key contributor towards the reduction of administrative burden. Its application through eGovernment acts as an enabler, making ICT considered as an important tool that contributes towards the simplification of procedures as well as adopting

a more customer-oriented approach. In this regard, Government will ensure that ICT will continue to be leveraged through appropriate capacity building interventions to achieve simplification and reduction in administrative burden. Investment within this area will provide employees within the public administration with the necessary skills so as to reach the main aims of the National ICT Interoperability Framework (NIF).

- **Establishment of eProcurement:** As the investments made in ICT tools in the public procurement field increased efficiency, the Maltese government indicates in OP 'Investing in human capital' to continue investment in a transformation towards an eProcurement system. One ambition is to meet the provisions of the revised directives in terms of eProcurement, making sure all public tenders with an estimated value exceeding the EU thresholds are being published as electronic tenders.

3.20 Netherlands

3.20.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Netherlands' CSR of 2018.¹⁴¹

The Netherlands is currently in the preventative arm of the Stability and Growth Pact. The government plans a decrease in the general government surplus from 1.1% of GDP in 2017 to 0.3% of GDP in 2021. According to the Stability Programme, the government debt-to-GDP ratio is expected to fall to 44.0% of GDP in 2021. The Netherlands is forecast to comply with the Stability and Growth Pact both in 2018 and 2019.



**Economic
Outlook**

In the field of research, development and innovation, the Netherlands can count on an efficient research and development sector and high-performing education system with a sound scientific base able to bring and support innovation and growth. Despite that, in order to reach its Europe 2020 goals, the Netherlands need additional investments which could help stabilise public and private research and development intensity.



**Research
and
Innovation**

Vast levels of household indebtedness are one of the key challenges in the Netherlands, with rigidities and distortive incentives built up over decades. This, in turn, distorts housing finances and sectoral savings patterns. Since 2012, the government has implemented a series of measures, but they were not entirely in line with the necessary reforms. The development of a well-functioning private rental market is constrained by subsidies in the other housing subsectors. Despite the fact that the Netherlands has one of the largest social housing sectors in the EU, housing is not always allocated in an efficient manner and on a needs-based basis.



**Housing
Market**

Regarding taxation, the Netherlands needs to take action to fight against aggressive tax planning strategies. In fact, the country tax rules are often used by companies engaging in aggressive tax planning. This reflects into distorted competition among firms, a loss for the public finances and unequal treatment of the taxpayers. In order to address this issue, the Netherlands shall go on with the reform agenda on taxation, "including withholding taxes on royalty, interest and dividend payments in case of abuse or payments to low-tax jurisdictions".



**Tax
System**

Finally, despite a well-functioning labour market, some groups are still facing important challenges. This is true for women, who are often working on a part-time basis, and people with a migration background, whose employment rate for non-EU-born is 20.6 percentage point lower than for people born in the Netherlands.



**Labour
Market**

3.20.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in the Netherlands since 2017. The information originates from the eGovernment Factsheet of the Netherlands.¹⁴²

¹⁴¹ COM(2018) 418 final, Council Recommendation on the 2018 National Reform Programme of the Netherlands and delivering a Council opinion on the 2018 Stability Programme of France, Brussels, 23.5.2018.

¹⁴² eGovernment Factsheet of the Netherlands 2017. Accessed on 17 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Netherlands_2018_0.pdf.

Legal Framework

Legislation has been prepared to arrange secure digital access and the competence to appoint mandatory open standards (Digital Government Law), as well as to arrange the right to digital interaction with government (Revision of the Administrative Law).

Organisational Change

Responsibility for digital government services to companies has shifted from the Ministry of Economic Affairs and Climate Policy to the Ministry of the Interior and Kingdom Relations. This includes framework policies, as well as the development of digital government infrastructural services for companies. With the transfer of these responsibilities a step has been taken towards greater coherence in digital government infrastructure and services for both citizens and businesses.

Infrastructure

The DigiD app was released, which allows citizens to always have the possibility to access eServices related to government, healthcare and pension funds.

Services

The availability of digital services in the Netherlands has reached 90% in 2017. Four life events have been added to the digital services: turning 18 years old, getting a divorce, registering as unemployed and registering a deceased person. The life events comprise digital checklists, which help citizens, based on their personal characteristics, to get administrative procedures related to the life events executed more efficiently.

3.20.3 *Country Specific Recommendations*

There are no identified recommendations, recitals or opportunities in the CSR for the Netherlands in the field of digital government related to TO2 and TO11.¹⁴³

3.20.4 *National Reform Programme*

The Netherlands' NRP¹⁴⁴ makes no specific reference to specific measures related to digital government and, therefore, no links to the TO2 and TO11 were found.

3.20.5 *Operational Programmes*

A thorough evaluation of the Netherlands' national OPs for the 2014-2020 financing period has revealed that there are no initiatives under TO2 and TO11 that would fall under the scope of this study.

¹⁴³ Firstly, the recommendations are stemming from the European Commission, directly calling on the Netherlands to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit the Netherlands. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution

¹⁴⁴ National Reform Programme the Netherlands 2018. Accessed on 17 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-netherlands-en.pdf>

3.21 Poland

3.21.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Poland's CSR of 2018.¹⁴⁵

Poland is currently in the preventive arm of the Stability and Growth Pact. Despite Government plans to reduce its deficit to 1% of GDP in structural terms, which is the medium-term budgetary objective, this will not be achieved by 2021. Furthermore, the Commission 2018 Spring Forecast points out Poland faces a risk of significant deviation from the recommended adjustment in 2018. This thus implies that Poland risks non-compliance with the provisions of the Stability and Growth Pact.


**Economic
Outlook**

For the medium and long-term, expenditure pressures will arise for Poland, mainly due to population ageing. Furthermore, Poland is the only Member state lacking an independent fiscal council. There is also a need for better access to healthcare and an increase in its effectiveness as Poland's unmet needs for medical care rank amongst the highest in the Union.


**Public
Spending**

While the performance of the Polish labour market has been strong and employment rates increase, groups like women, low-skilled and older people remain poorly represented. This is caused by recent policy measures that decrease the incentive to work as well as insufficient incentives to take up work provided by the Polish social protection. Especially the high child benefit results in lower participation of parents, mostly women, in the labour market. Additionally, while measures were set out in an attempt to address the labour market segmentation, the Polish share of temporary contracts remains one of the highest in the Union.


**Labour
Market**

To boost labour participation and the innovative capacity of the economy, both pupils and adults need to be equipped with adequate skills and competences. The participation of Polish adults in education and training is amongst the lowest in the Union, leading to weakness in literacy, numerical and digital skills.


Education

As regulatory change keeps a fast pace in Poland, but the public and social consultations are limited, this weighs on the quality of the legislation. In this context, the safeguarding of the rule of law and independence of the judiciary are essential. Therefore, the Commission has presented to the Council in December 2017 a reasoned proposal that there is a risk of serious breach of the rule of law by Poland. As a solution, the Commission indicates that social and public consultations, which can be organised digitally, can enhance the quality of legislation.


**Justice
System**

3.21.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in Poland since 2017. The information originates from the eGovernment Factsheet of Poland.¹⁴⁶

¹⁴⁵ COM(2018) 420 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Poland and delivering a Council opinion on the 2018 Convergence Programme of Poland, Brussels, 23.5.2018.

¹⁴⁶ eGovernment Factsheet of Poland 2017. Accessed on 5 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Poland_2018.pdf.

Strategy

In May 2017, the Polish Government adopted The National Framework of Cybersecurity Policy of the Republic of Poland for 2017-2022, replacing the previous Policy of Protection of Cyberspace of Poland. The aim of the new Framework is to strengthen the level of security in cyberspace as well as identifying measures and mechanisms to enhance Poland's cybersecurity capabilities by 2022. Another element of strategic digitalisation is the National Integrated Informatisation Program 2020. The objective of the programme is to facilitate a digitalisation of the state in order to develop public services at national and local levels of the government that will be monitored and improved through both digital technologies and digital resources and knowledge.

Legal Framework

In the framework of the National Act on Trust Services and Electronic Identification, adopted in 2016, Poland is aligning its national legal system with the eIDAS Regulation. As part of this National Act, a National Electronic Identification Scheme is under preparation and has started implementing the eIDAS regulation from September 2018. These legal changes enable both Polish citizens and companies to identify themselves electronically when accessing and using eServices offered by the public administration. Additionally, the Ministry launched mDocuments, a pilot version of a service that gives citizens the option to confirm their identification via mobile services rather than paper documents.

Organisational Change

As a consequence of Poland's new Rules of Procedure, the Ministry of Digital Affairs has been reshaped. The Department of Systems Maintenance and Development was divided into two separate units, namely Department of Systems Maintenance and Department of Systems Development while the latter also absorbed the tasks of the Department of State Infrastructure, which has been disassembled.

Infrastructure

On top of internal adjustments, the Ministry of Digital Affairs also launched the RP Portal; a single website for all government institutions. The intent is to have a one-stop shop for citizens and business interacting with public administrations. between the citizens and companies on the one hand and the government on the other. While the RP Portal serves as a single point of contact with the government, Poland also set out the Electronic Platform of Public Administration Services. This system allows public institutions to provide administrative services to the public via electronic communications channels. The portal will enable citizens and enterprises to manage their administrative procedures and official matters over the internet without repeatedly having to fill out the same information. Moreover, the adoption of the Programme for Opening Public Data in September 2016, illustrates the efforts of the Polish Government to open public data as well as improve the quality and quantity of available data. In the field of education, Poland put in place digital improvements. In order to assure high-speed internet connections (at least 100 Mb/s) for all schools and the guaranteeing of a strengthened availability of e-sources for teachers, the Polish Government created the National Educational Network. Starting from 2018, the aim is to gradually connect all schools to the internet, granting all of

them a high-speed connection by 2020. Regarding efforts towards business, the Polish Government developed an *biznes.gov.pl*, a platform that offers eServices to entrepreneurs whose intention is to set up or conduct an economic activity. The main aim of the platform is to ease the process and simplify the bureaucratic burdens for the establishment and management of a company.

3.21.3 *Country Specific Recommendations*

The CSR for Poland¹⁴⁷ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁴⁸

Thematic Objective 2

Recommendations

The CSR for Poland makes no recommendation of the need to intervene in the field of TO2.

Recitals

In the context of eSkills, Recital 10 highlights the need to equip both pupils and adults with the necessary skills, including digital ones, that support employment in the rapidly changing labour market. The importance of enhanced accessibility, use and quality of ICT by citizens as set out in TO2, is thus stressed here.

Opportunities

Recital 13 points out the problematic effectiveness of and access to the Polish Health Services. Hospital beds need to be more geographically distributed and the outpatient and primary healthcare need to be further developed. By ensuring e-health applications, this issue brought up by the CSR can be addressed.

Recital 15 considers well designed and exercised social and public consultations a tool to improve quality of legislation, limit the needs for subsequent amendments and thus increase the predictability of the regulatory environment. In the context of the reasoned proposal of the Commission to the Council of December 2017, pointing out the risk of Poland breaching the rule of law, TO11 can offer solutions according to the CSR.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Poland.

¹⁴⁷COM(2018) 420 final, Council Recommendation on the 2018 National Reform Programme of Poland and delivering a Council opinion on the 2018 Stability Programme of Poland, Brussels, 23.5.2018. COM(2018) 420 final, Council Recommendation on the 2018 National Reform Programme of Poland and delivering a Council opinion on the 2018 Stability Programme of Poland, Brussels, 23.5.2018.

¹⁴⁸ Firstly, the recommendations are stemming from the European Commission, directly calling on Poland to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Poland. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

3.21.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Poland's NRP.¹⁴⁹

Thematic Objective 2

- **Enhancement of the capacity of public authorities delivering education:** The Ministry of Science and Higher Education plans to implement the Integrated University Programmes. The aim of the Programmes is to execute the systemic changes part of the higher education and science reform. Amongst these changes, the improvement of competences of persons participating in higher education is included. In practice, measures will be set out to improve the teaching competences of higher education staff in ICT skills as well as the provision of an ICT infrastructure for university management, the creation of open educational resources and information management.
- **Expansion of business portal:** In the framework of the existing portal biznes.gov.pl, the Information Point for Entrepreneurs will be developed. The goal of the Information Point is twofold: on the one hand, it will explain how to deal with official matters. On the other, it will allow e.g. payment of official fees or the obtaining of a clearance certificate. Via the Information Point, entrepreneurs will also be informed about official deadlines or major legal amendments.
- **Introduction of ICT applications in Primary Healthcare:** The Act on Primary Healthcare, adopted December 2017, aims to improve the efficiency of the entire medical system. More in detail, healthcare teams will be equipped with modern internal IT systems that will be synchronised with the national and regional IT systems. This will facilitate the information flow on patients in real time. Besides that, a Platform will be created that intends to collect data regarding the pilot implementation, exchanges knowledge on best practices and carries out educational activities. Furthermore, in the context of the social policy to include the elderly, Poland proposes to introduce the use of telemedicine.

Thematic Objective 11

Poland's NRP makes no specific reference to measures related to TO11.

3.21.5 *Operational Programmes*

For the funding period 2014-2020, two OPs of Poland are specifically dealing with themes related to TO2 and TO11. The OP 'Knowledge, Education and Development'¹⁵⁰ focusses on key challenges in the fields of employment, social inclusion, health, education and public administration. The OP 'Digital

¹⁴⁹ Poland National Reform Programme 2018. Accessed on 6 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-poland-en.pdf>.

¹⁵⁰ Poland Knowledge Education Growth Operational Programme. Accessed on 26 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014PL05M9OP001&lan=en

Poland¹⁵¹ sets out the deployment of fast broadband networks; the improvement of citizen's digital competences and the development of eServices as main objectives.

Thematic Objective 2

- **Enhancement of digital literacy in education:** To develop the key competences of students to enter the labour market, OP 'Knowledge Education Development' indicates attention dedicated to ICT skills. They will be strengthened by using e-books and developing e-learning materials that accompany the existing e-textbooks.
- **Creation of eServices:** The Polish government sets out its ambition in OP 'Digital Poland' to make electronic means available for public sector information and services. In this respect, new services will be made electronic and the functionality and e-maturity of existing services will be improved. This includes establishing the government Cloud services, common eService platforms and IT security policies. Furthermore, a common platform of public administration eServices will be set up as well as interoperable public registers.
- **Development of digital literacy for citizens:** To enable all citizens to benefit from the wider use of ICT in social and economic life, Poland plans in OP 'Digital Poland' to provide the citizens with tailored mechanisms to acquire and increase digital competences. This includes computer and internet skills but also ability to use the internet access and online services, public eServices in particular.
- **Promotion of using digital technologies:** Poland states in OP 'Digital Poland' that campaigns need to be installed that focus on raising public awareness stemming from using digital technologies, including public eServices. Therefore, both education and information campaigns will be set out that focus on user awareness, attractiveness of using digital technologies and safety.
- **Development of security standards:** OP 'Digital Poland' points out that, to prevent and counteract fraud and corruption in the area of ICT, the Polish government will use the experience from the 2007-2013 Remedial Action Plan and develop, based on this, standards to prevent fraud and corruption.
- **Implementing measures of eInclusion:** Poland indicated in OP 'Digital Poland' it will implement measures in the field of digital competences to ensure eInclusion will be provided at the national level. A forum will be set up for cooperation to programme and implement the measures and solutions as well as exchange knowledge and information on digital competences. Furthermore, guidelines, good practices and recommendations on development of digital competences will be drafted.

Thematic Objective 11

¹⁵¹ Operational Programme Digital Poland. Accessed on 25 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/poland/2014pl16fop002

- **Development of eProcurement:** According to OP 'Knowledge Education Development', Poland will conduct trainings and workshops for authorities that focus on the use of electronic tools for procurements. Furthermore, the website of the Public Procurement Office will be equipped with electronic tools.
- **Establishment of broadband networks:** Poland will support activities that enable the largest possible access to broadband networks of at least 30 Mbps bandwidth. Solutions that enable further improvement of bandwidth will be promoted as OP 'Digital Poland' set out.
- **Training of public administration staff:** Poland plans in OP 'Digital Poland' to train the workers that need to deliver specific public eServices and provide them the competences needed to ensure efficiency of the instruments put in place for the informatisation of government services.
- **Establishment of Open Data system:** To provide digital availability of the public sector information, Poland said in OP 'Digital Poland' it will improve the quality of data; make information available online with the use of professional teams, especially programming interfaces; ensure electronic online access to national registries; build infrastructure to store shared information and set up a security and standardisation system for the use of this data.

3.22 Portugal

3.22.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Portugal's CSR of 2018.¹⁵²

Portugal is currently in the preventive arm of the Stability and Growth Pact and subject to the transitional debt rule. The Government aims to attain a headline deficit of 0,7% GDP and 0,2% GDP in 2018 and 2019. A further improvement to a surplus of 1,4% of GDP is expected by 2021. However, the plans do not include the potential deficit-increasing impact of bank support measures from 2019 onwards. The medium-term budgetary objective, a structural surplus of 0,25%, is to be achieved by 2020. While the macroeconomic scenario for the budgetary projections is plausible for 2018 and favourable for the years thereafter, specific measures are needed to support the planned deficit targets from 2018 onwards. Given the significant budgetary impact of the large-scale wildfires that occurred in 2017, the specific treatment of wildfire prevention expenditure could be considered in application of the unusual event clause. According to articles 5(1) and 6530 of Regulation (EC) No. 1466/97, the eligible additional expenditure in 2018 amounts to 0,07% of GDP for preventive measures. Based on the Commission 2018 spring forecast, there is a risk of a significant deviation from the recommended adjustment both in 2017 and 2018 taken together as well as in 2018.

Sustainable fiscal consolidation via structural improvement in public finances needs to be achieved through stronger revenue collection and expenditure controls. To enhance the expenditure controls, efforts regarding effective enforcement of the commitment control law, strict and timely implementation of the budget framework law and continued spending review and rationalisation efforts in Portugal are key. Furthermore, the budgetary planning and implementation continue to be a considerable challenge, particularly in the Portuguese health sector. In addition, controlling expenditure, managing debt and improvement of the overall financial sustainability of state-owned enterprises could contribute to the improvement of public finances. Portugal has made efforts in this regard that lead to improvement, except in the health sector where results worsened.

The Portuguese labour market continues to recover with a considerable drop in unemployment, placing it below the euro area average. Furthermore, the Government engages itself to create one-stop shops for employment in 2018. However, temporary contracts remain the norm for unemployed people trying to find a job and the wage gap between temporary and permanent employees has grown during the crisis. In addition, the overall skills level of the adult population, including digital skills, are among the lowest in the Union.

The poverty and inequality indicators have improved, with a surge from the at-risk-of-poverty or social exclusion rate closer to the Union average. Nonetheless, the income inequality level remains high and social transfers are low.

In the daily lives of Portuguese citizens and business, the administrative barriers continue to hinder investment and efficient allocation of resources. A revamp of procedural workflows by shortening



**Economic
Outlook**



**Fiscal
Framework**



**Labour
Market**



**Social
Inclusion**



**Administrative
and
Regulatory
Barriers**

¹⁵² COM(2018), 421 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Portugal and delivering a Council opinion on the 2018 Stability Programme of Portugal, Brussels, 15.6.2018.

deadlines for decision-making and more transparency are needed. Especially in the administrative courts these are recurring challenges together with corruption issues.

3.22.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Portugal since 2017. The information originates from the eGovernment Factsheet of Portugal.¹⁵³

Strategy

The ICT2020 Strategy has been approved by the Portuguese Government in March 2017 and published in July of the same year. The Strategy entails three main pillars: promotion of integration and interoperability; innovation and competitiveness; and resource sharing and investment in digital competences. Furthermore, the Simplex+ Programme continues to put in place innovative services such as new customer services, an Oral Health eBulletin and a pension credit simulator. The aim of the Programme is to enhance co-creation of online public services with civil society to de-bureaucratise its relationship with public institutions. Besides that, the Portugal Participatory Budget has been created. This is the first participatory budget of the world done at a countrywide level. The aim is to underpin the participatory democracy with technology by using a dedicated web portal, an electronic voting system and dedicated pages on social media networks. Lastly, Portugal established the Experimentation Laboratory of the Public Administration which aims to design and test new services and administrative procedures to create a culture of experimentation to anticipate and generate innovation so public administration does more and better. An additional advantage is that the relationship of users with public services should be improved.

Legal Framework

Since October 2017 the eSignature law has been effective in Portugal. This law enables the integration of new electronic authentication features, such as Professional Attributes Certification System, which allows for authentication and signature of professional quality by using the national eID card.

Organisational Change

The Minister of Presidency and of Administrative Modernisation had cooperated with the Secretary of State Assistant and of Administrative Modernisation to create an ICT Council as well as Portugal INCoDe.2030. The latter was launched in April 2017 and functions as an inter-ministerial action that brings together the areas of Administrative Modernisation; Science Technology and Higher Education; Education; Labour; Planning and infrastructures; and Economy. The objective is to strengthen the basic skills of the Portuguese population in ICT and preparing them for emerging and digitally-based employment opportunities.

Infrastructure

¹⁵³ eGovernment Factsheet for Portugal. Accessed on 24 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Portugal_2018_0.pdf

The Government of Portugal developed a Digital Mobile Key dedicated app that intends to facilitate the use of eID in smartphones. Other mobile apps have been developed to enhance interaction between citizens and the Public Administration in the field of health (MyADSE) and Internal Affairs (MAI MOBILE). Furthermore, a portal has been integrated with a Citizen Agenda which allows the consultation in a single point of the main events of the relation between the citizen and public administration.

Services

Services have been put into place to allow digital exchange of administrative and clinical data between healthcare providers and citizens via the Newborn Baby- Family Doctor and Electronic Health Tracking project. Furthermore, automatic tax declarations provide citizens with an income declaration pre-filed by the Tax Authority based on data collected from both third parties and personal elements out of the previous declaration.

3.22.3 Country Specific Recommendations

The CSR issued for Portugal¹⁵⁴ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁵⁵

Thematic Objective 2

Recommendations

The second recommendation of the CSR for Portugal indicates the need to increase the skills level of the adult population. The CSR points out this should also include digital literacy by strengthening and broadening the coverage of the training component in adult qualification programmes. Recital 14 illustrates the overall skills, including the digital ones, are among the lowest in the Union, which impedes the countries innovation potential and competitiveness.

Recitals

The CSR for Portugal makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

In the CSR's first recommendation, the need to enhance expenditure control, cost effectiveness and adequate budgeting is stressed. This should be tackled in particular in the health sector, where a specific mentioning that requires a reduction of arrears in hospitals can be found. Furthermore, in recital 10 and 11 the health sector is indicated as an example of a sector where the operational results of state-owned enterprises have not improved, and budgetary planning remains a considerable challenge. The deployment of eHealth tools could improve the functioning of the hospitals with a potential positive effect on their cost effectiveness.

¹⁵⁴COM(2018), 421 final, Council Recommendation on the 2018 National Reform Programme of Portugal and delivering a Council opinion on the 2018 Stability Programme of Portugal, Brussels, 15.6.2018.

¹⁵⁵ Firstly, the recommendations are stemming from the European Commission, directly calling on Portugal to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Portugal. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Thematic Objective 11

Recommendations

The CSR for Portugal makes no recommendation of the need to intervene in the field of TO11.

Recitals

The CSR for Portugal makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

In recital 19, the administrative barriers are referred to as impeding elements for investment and efficient allocation of resources. In particular, the administrative courts are facing long proceedings, a lack of transparency and corruption. Digital public services delivery could improve the proceedings and open data increase the transparency. As a consequence, this could decrease the corruption currently associated with the administrative courts.

3.22.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Portugal's NRP.¹⁵⁶

Thematic Objective 2

- **Improvement of digital skills:** In Portugal, 45% of the population has little or no digital skills. To strengthen these skills of the population, the InCode2030 Programme had been put into place. The main objective of the Programme is to place Portugal in the group of most advanced European countries in terms of digital skills by 2030. In this regard, three major challenges need to be tackled: generalise digital literacy; encourage employability and training and professional expertise in digital technology; and increase participation in international networks of research and development and production of new knowledge in all areas associated with the digital transformation. The intent is to invest in enhancement of learning contexts and skill profiles, teaching resources associated with new technologies of information and communication that promote digital literacy will therefore be made available.
- **Investment in digital infrastructure:** An Action Plan for the Industry 4.0 will be developed based on the modern digital networks, so it can be appropriate for a strong dependence on the digital economy. In the context of establishing this digital infrastructure, the government will monitor the conditions for the development of a private investment program to extend the digital networks by 2020. This would include investment in the expansion of optic fibre networks.
- **Digitalisation of tourism and cultural sector:** A platform, meetingsinportugal.com, is created to provide an overview of spaces and infrastructure for conferences in Portugal. The

¹⁵⁶ Portugal National Reform Programme 2018. Accessed on 24 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-portugal-pt.pdf>

platform will also aid in the promotion of the Digital Tourism Academy for knowledge transfer for trainings on digital tools for tourism. Furthermore, the contents of libraries and other cultural institutions have been made available online through virtual spaces in order to foster social inclusion and strengthen literacies.

- **Development of eGovernment Portal:** To strengthen both the competitiveness of the economy as well as the bond of trust between citizens, businesses and the state, the Simplex + Programme has been created. It is a key element in the objective of the providing transversal communication between the different areas and levels of government. In 2018, the Programme was expanded with new modernisation measures for the simplification of interaction between citizens or business and the public administration. Another innovative feature is the publication of electronic health newsletters. In the field of real estate, a Public Property Portal will be set up to reduce the bureaucracy requests for the creation of public services or bodies and serve at the same time as a point of contact between the state and potential investors. The Simplex + Programme also includes the project One Stop Employment which aims to concentrate in a single portal all interactions of both unemployed citizens in their job search processes as well as employers hiring new workers.

Thematic Objective 11

Portugal's NRP makes no specific reference to measures related to TO11.

3.22.5 Operational Programmes

For the funding period 2014-2020, one OP of Portugal is specifically dealing with themes related to TO2 and TO11. The OP 'Competitiveness and Internationalisation'¹⁵⁷ focusses on a more competitive economy based on knowledge intensive activities; investment in tradable goods and services; strengthening the export orientation of Portuguese companies; improvement of transport and the increased efficiency of public services.

Thematic Objective 2

- **Facilitate public services online:** The use of ICT by citizens and businesses will be promoted by delivery of public services online. In particular, the implementation of information system for Portugal 2020 will be updated and improved to function as the promotor of simplification of regulation and easy access by using electronic forms.
- **Development of cybersecurity:** Portugal plans to adopt procedures and the security tools needed to ensure the effectiveness and efficiency of information systems. This aims to allow the establishment of access conditions to the insurance and differentiated information of user profiles.

¹⁵⁷ Portugal Competitiveness and Internationalisation Operational Programme. Accessed on 27 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/portugal/2014pt16m3op001

- **Establishment of eInclusion:** the Portuguese government considers equal opportunities, non-discrimination and accessibility as crucial elements in the Portugal in 2020 program. Therefore, it intends to minimize information and technical barriers by promoting digital literacy and, more particular, access to eGovernment to populations suffering from additional constraints.
- **Provision of access to data:** To support the scientific and technological research, Portugal will invest in infrastructures that include computer and programming systems as well as communication networks that promote digital open access to scientific resources, such as archives and scientific databases.
- **Creation of eGovernment portal for citizens:** To promote the intensive use of ICT and increase efficiency and transparency in the provision of public service, Portugal plans to continue its modernisation effort through establishing more digital services. In particular, there will be the Citizen's Spaces and Citizen's Stores, which are new, more decentralised formats. The Citizens Spaces provide various types of public services in a mediated way, including digital assistance.
- **Development of eHealth:** Portugal will enable the use of eHealth facilities by supporting the creation of electronic appointment projects. Furthermore, it will modernise the health infrastructure already in place and extend this with the creation and use of platforms to share information among health services as well as between health services and public administration.

Thematic Objective 11

- **Set-up of base register:** Portugal will create a base register for prosecutors. The system will enable them to store in a single base, all information available in the public administration of the beneficiary, significantly reducing the administrative burden on prosecutors, not holding specific visibility to users or own image.

3.23 Romania

3.23.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Romania's CSR of 2018.¹⁵⁸

Romania is currently in the preventive arm of the Stability and Growth Pact. The Government planned in its 2018 Convergence Programme a headline deficit of 2,95% of GDP with a gradual reduction thereafter to 1,45% of GDP. The medium-term budgetary objective, which is a structural deficit of 1% of GDP is not expected to be reached by 2021. The general government-debt-to-GDP ratio is expected to remain below 40% by 2021 but measures need to be specified and are required to support the planned deficit targets. While the Council requested efforts from Romania to ensure that the nominal growth rate of net primary government expenditure does not exceed 3,3% in 2018, the Council stated in June 2018 that Romania has not taken effective action. The Romanian budgetary planning is found to regularly ignore the prescriptions of its fiscal framework. The update of the fiscal strategy provided to the Parliament in 2017 was handed in long after the statutory deadline, thus failing to ensure a long-term perspective to budgetary planning.



**Economic
Outlook**

Tax compliance in Romania remains low, especially the value added tax. There is a significant divergence between the theoretically expected and actually collected revenues. The introduction of electronic cash registers connected to the tax administration's information technology system was put forward as a solution but is still pending implementation.



**Tax
System**

Two evolutions have taken place that affect the labour market: on the one hand there is employment growth, on the other there is a reduction of labour force due to demographic ageing and emigration. Romania has not succeeded in booking progress to address the country-specific recommendation to strengthen targeted activation policies and integrated public services. Therefore, participation in active labour market policies has remained very low and no case management for long-term unemployed and recipients of social assistance is planned. A skills mismatch can be detected as the supply of skills does not keep up with the needs of the economy. Both basic and digital skills remain low, as well as participation in adult learning.



**Labour
Market**

As income inequality persists, the risk of poverty or social exclusion is very high. The social benefits cannot be calculated as the social reference index has not been updated since 2008. Increased coverage and adequacy of social assistance would be tackled by the minimum inclusion planned to enter into force in 2018. However, the entry was postponed by more than a year. Furthermore, the involvement of social partners remains limited as their views are frequently not considered.



**Social
Inclusion**

Even though improvements were realised regarding the health status of the population, it remains below Union standards. In particular access to healthcare remains a challenge, together with low funding and the inefficient use of resources, which is detrimental to the effectiveness of the healthcare



Healthcare

¹⁵⁸ COM(2018), 422 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Romania and delivering a Council opinion on the 2018 Convergence Programme of Romania, Brussels, 15.6.2018.

system. In addition, there is a sizeable shortage of doctors and nurses and the outpatient care is limited.

3.23.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Romania since 2017. The information originates from the eGovernment Factsheet of Romania.¹⁵⁹

Legal Framework

The Romanian Government has launched the National Interoperability Framework to enforce and support the implementation of the National Strategy for Romania's Digital Agenda 2020. The preparation happened in accordance with the European Interoperability Framework. Furthermore, a legislative initiative to ensure a high level of security of IT systems and networks has been launched and applied as of May 2018. A draft law was also prepared to harmonise the Romanian national legislation with EU regulation to establish electronic signatures and documents in electronic forms.

Organisational Change

The Ministry of Communications and Information Society has created the Romanian National Computer Security Incident Response Team. This is a new public institution with a task to conduct research, development and expertise in the field of cyber security.

Other Highlights

To incentivise programmers to enhance their qualifications, the Government developed a salary tax deduction if the programmers take up on a secondary education as of February 2018.

3.23.3 *Country Specific Recommendations*

The CSR for Romania¹⁶⁰ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁶¹

Thematic Objective 2

Recommendations

The CSR for Romania makes no recommendation of the need to intervene in the field of TO2.

Recitals

¹⁵⁹ eGovernment Factsheet for Romania. Accessed on 25 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Romania_2018_0.pdf

¹⁶⁰ COM(2018), 422 final, Council Recommendation on the 2018 National Reform Programme of Romania and delivering a Council opinion on the 2018 Convergence Programme of Romania, Brussels, 15.6.2018.

¹⁶¹ Firstly, the recommendations are stemming from the European Commission, directly calling on Romania to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Romania. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

The CSR for Romania makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

Recital 15 refers to the supply of skills that cannot keep up with the needs of the economy. Both basic and digital skills are low, as well as the participation of adults in learning. To adverse the impact on competitiveness, employment and convergence, training in and the development of eSkills could curb the skills mismatch.

As pointed out by recital 17, the health status of the population remains below the Union standards due to problematic healthcare access, inefficient use of resources and a lack of doctors and nurses. To improve efficiency of the healthcare system, a tool could be to deploy eHealth to improve both management and communication across the hospitals. The barriers that hinder the access could also be lowered if patients could use digital tools for their healthcare.

The public consultation process in Romania is of weak design, as stated by recital 18. This contributes to the lower quality and predictability of regulation. As the involvement of stakeholders in design and implementation is weak and the genuine dialogue is rare, the use of electronic tools to ensure both participation and follow-up could be a solution. Therefore, eParticipation tools should be put in place.

Thematic Objective 11

Recommendations

The CSR for Romania makes no recommendation of the need to intervene in the field of TO11.

Recitals

The CSR for Romania makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

To ensure efficient public spending and sustainable growth as well as combatting corruption, recital 20 formulates the need of an efficient and transparent public procurement. Efforts have been made to increase the efficiency of the public procurement system, there is still room for improvement. To enhance both efficiency and transparency, the launch of an eProcurement system could be resourceful Romania.

3.23.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Romania's NRP.¹⁶²

Thematic Objective 2

¹⁶² Romania National Reform Programme 2018. Accessed 24 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-romania-en.pdf>

- **Improvement of cadastral data access:** The Integrated System of Cadastre and Land Book was put into place, a system that organises a systematic registration process of real estates. The aim is to update the methods of data collection, evaluation, analysis and reporting from the National Agricultural Register using information technology. Individuals and businesses can obtain a land book excerpt for information purpose through an online payment system.
- **Digitalisation of business environment:** The Romanian Government considers the importance of the digital environment for the good functioning of the economy. It will thus increase the level of eGovernance systems to offer support to business. The system Strengthening and Ensuring Interoperability of Electronic Systems Designed to eGovernment Services Type 2.0 was therefore put into place. It focusses on the life events of citizens and business, develops a governmental cloud and social media communication as well as an Open Data and Big Data provision. Furthermore, the Government also invests in the digitalisation of the consumers perspective. The project Improving the Required Rules, Procedures and Mechanisms for MCSI to further Develop the eCommerce Sector will be continued to be implemented.
- **Establishment of digital library:** The project eCulture: the Digital Library of Romania is currently under technical evaluation and pending approval of the Government. As a side-project, the eHeritage is planned to take place in December 2018 and aims to develop a comprehensive and updated database of all historical monuments across Romania. Therefore, modern ICT tools will be used as well as eGovernment procedures related to the interaction between the monuments owners and public institutions.
- **Creation of computer training centres:** The Romanian Government has engaged in a cooperation with the Government of Japan to increase the level of skills of students and teachers. The project Promoting and Supporting Excellence in Education through the Development of Competences in Information Technology is financed through a non-reimbursable grant of the Japanese Government. The project's objective is to ensure optimal conditions for training and development of top performers students from the 9th to the 13th grade in Match-IT section by endowing and operationalizing 60 computer training centres.
- **Digitalisation of the health system:** In the health sector, projects are put in place connected to the Electronic Health Record of some medical specialities as well as the extension of the electronic prescription for narcotic and psychotropic medicines. Moreover, 102 centres were equipped with telemedicine tools. In these centres, services for extending the system of classifying the patient in the diagnosis groups of the Open Source Healthcare Insurance Gateway for Electronic Exchange of Social Security Information project. This is an IT project that allows the exchange of information exclusively electronically with counterpart institutions from other Member States.
- **Enforcement of transparent procurements in healthcare:** The Government undertook steps to improve both quality and efficiency of public services in Romanian healthcare. In this regard, integrity and accountability within the management of resources is promoted. The specific objective Increasing of Integrity, Reducing Vulnerabilities and Risks of Corruption in the Public Health System is developed as part of the National Anticorruption Strategy 2016-

2020. In this framework, Romania invested on its IT infrastructure, including an IT platform for information transparency on public procurements and contracts involving the use of public funds in the health sector.

- **Simplification of administrative burden:** To facilitate the communication between public institutions and citizens and business as well as to decrease the administrative burden, electronic procedures are but in place. To organise this, the Government launched the project Zero Bureaucracy. The objective of the project is to provide operationalisation through a unique interface, digitalised public services and integrate these services with other similar services, e.g. government cloud.

Thematic Objective 11

- **Establishment of Framework for Development of eGovernment Tools:** The project Establishment of the Framework for the Development of eGovernment Tools is projected to finish in the second semester of 2020. The aims are to reduce the fragmentation and clustering of public electronic services and ensuring a legislative, institutional, procedural and operational framework for the use of eGovernment tools. In addition, the National Interoperability Framework was established to guarantee full interoperability between future public sector systems in line with the guidelines of the European Interoperability Framework and reduce the number of redundant data sources in public administration.

3.23.5 *Operational Programmes*

For the funding period 2014-2020, two OPs of Romania are specifically dealing with themes related to TO2 and TO11. The OP 'Administrative Capacity'¹⁶³ focusses on improving the efficiency, the transparency and the accessibility of Romania's public administration and judicial system. The OP 'Competitiveness'¹⁶⁴ will address the challenges that stem from the low support for research and development and the under-developed ICT services and infrastructure.

Thematic Objective 2

- **Promotion of eCommerce:** the Romanian Government will provide, as stated in OP 'Administrative Capacity', the necessary institutional and regulatory framework for eCommerce and cross-border supply. The actions will include efforts on raising awareness of online service operators and users of electronic commerce and promote its use in retail. In addition, to ensure that electronic commerce continues to be strengthened, the necessary administrative capacity to tackle eCommerce will be put in place.
- **Fostering Open Data practices:** The Romanian government described in OP 'Administrative Capacity' it will invest in fostering the use of open data. More concretely, this will happen by improving the legal framework on freedom of information, developing the relevant standards

¹⁶³ Romania Administrative Capacity Operational Programme. Accessed on 27 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014RO05SFOP001&lan=en

¹⁶⁴ Romania Competitiveness Operational Programme. Accessed on 27 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/romania/2014ro16fop001

for presentation data and increase the ability of civil society and businesses to use and integrate information generated by open data. Furthermore, OP 'Competitiveness' indicates that cloud interoperability and standardization of government databases will be set out to increase quality of public services. As part of Romania's commitment in the Open Data initiative, an open Data portal will be functional and accessible from the pan-European portal.

- **Introduction of Cybersecurity:** Romania acknowledges in OP 'Competitiveness' cybersecurity infrastructure for electronic data networks and electronic communication services is a priority. Therefore, interventions are set out to increase security in networks/ ICT applications in order prevent cyberattacks. These interventions will be carried out in compliance with EU Directive/40/2013 on attacks against information systems and cyber security strategy the EU 2013. In addition, action is planned to increase the trust of citizens / businesses in terms of security operations in cyberspace.
- **Establishment of broadband network:** To contribute to digitalisation of education, Romania sets out in OP 'Competitiveness' it will connect schools in rural and small urban areas to high speed internet. The project has been started in the previous programming period and new enters into the phase of delivery, installation, testing and acceptance of equipment. The Romanian Digital Agenda does not only provide broadband infrastructure for schools but aims to develop basic broadband infrastructure throughout the country.
- **Investment in eSkills:** The Romanian government plans in OP 'Competitiveness' to adopt teaching models for ICT with a particular focus on the need to develop skills. In this respect, networks and platforms will be set up to facilitate knowledge exchange, infrastructure will be put in place for the provision of infrastructure and equipment and a digital culture in teaching will be established.
- **Enforcement of eInclusion:** Romania described in OP 'Competitiveness' its intentions to enhance the development of ICT in disadvantaged communities. Therefore, the POCI programme plans to finance specific infrastructures such as computers, servers and internet access. The aim is to achieve digital literacy in vulnerable communities and, in this way, to combat exclusion.
- **Enhancement of eHealth:** As said in OP 'Competitiveness', the existing Romanian health information systems will be linked to an integrated eHealth system to increase the degree of interoperability. Furthermore, the healthcare system will be streamlined by accelerating the use of modern eHealth ICT tools.
- **Establishment of eCulture:** Romania will ensure online accessibility of cultural elements by creating conditions for digitalisation and preservation of content, according to OP 'Competitiveness'. In addition, investments in eCulture will be made to make culture accessible to the general public on the one hand and to promote tourism on the other.

Thematic Objective 11

- **Development of eJustice:** Romania indicated in OP 'Administrative Capacity' it will continue its efforts on the development of eJustice. To do so, reliable access and real-time citizen

information and documents recorded in registers will be provided. Furthermore, an upgrade of the IT systems support is planned, and IT solutions will be put in place for electronic filing of cases, e-files. These files will be granted improved access which will ensure a greater transparency of the judiciary.

- **Development of information society:** By creating an information society, Romania aims to increase the level of eGovernment services. This has been set out by OP 'Competitiveness'. The objective is to increase the efficiency of public administration by means of ICT as indicated in the Digital Agenda for Europe.
- **Establishment of eGovernment and Interoperability framework:** Romania will support interventions ensuring the institutional and administrative capacity of public institutions of ICT management will be strengthened, as stated in OP 'Administrative Capacity'. Furthermore, to support the development of eGovernment, the administrative capacity, legislative common standards and interoperability will be guaranteed.
- **Creation of eProcurement system:** To develop more transparency and accountability in the public procurement system, the use of electronic systems and support tools in Romania will be increased. This has been stated by the OP 'Administrative Capacity'.
- **Development of eGovernment and Interoperability:** To deal with the identified gaps of interoperability of electronic systems in public authorities, interventions will put in place to establish end-to-end interoperability as part of the Government Enterprise Architecture. This corresponds with OP 'Competitiveness'. The aim of the project is to define a uniform set of standards used for ICT initiatives. Furthermore, the principles of eGovernance will be aligned with Directive 2013/37/EU on the promotion of re-using public sector documents.

3.24 Slovakia

3.24.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Slovakia's CSR of 2018.¹⁶⁵

Slovakia is currently in the preventive arm of the Stability and Growth pact. The Government planned an improvement of the headline deficit to 0,8% of GDP for 2018 which would gradually decrease to 0,0% of GDP in 2021. It is expected Slovakia will reach the medium-term budgetary objective, a structural deficit of 0,5% of GDP in 2020. Furthermore, the general government debt-to-GDP ratio is expected to gradually decline from 49,3% in 2018 to 43,3% by 2021. While the macroeconomic scenario for the budgetary projections seems plausible, measures are required to support the planned deficit targets from 2019 onwards. Moreover, the budget includes a non-specified category of expenditure called budgetary reserves which represents a non-negligible share (0,7% of GDP), to be used for ad hoc operations. This thus reduces predictability in budget implementation. The Commission spring 2018 forecast indicates there is a risk of significant deviation from that recommendation in 2018.



**Economic
Outlook**

The public finances face risks in the long term, in particular due to healthcare expenditure. While measures have been taken to tackle the low cost effectiveness of the health sector in the form of the Value for Money spending review, few signs of progress can be detected. Therefore, the primary care sector should be strengthened, and the shortage of general practitioners needs to be resolved. Furthermore, the fiscal revenues are increasing thanks to the swift economic growth and the high value added tax gap is being closed. Nonetheless, property taxation remains a weak revenue source.



**Fiscal
Framework**

The Slovakian labour market has undergone positive developments due to increased employment, leading to historically low levels of unemployment. Nevertheless, the long-term unemployment continues to be one of the highest in the Union. Moreover, as the labour market conditions improve, skilled labour shortages are reported and regional disparities in the labour market are pronounced. The coordination between private partners and non-governmental organisations needs improvement and adult participation in learning remains very low. The gender employment gap and gender pay gap remain problematic as they are well above the Union average.



**Labour
Market**

Public administration in Slovakia are inefficient and bottlenecks persist due to poor inter-ministerial cooperation and weak political neutrality of the civil service. Regarding the management of Union funds, the administration capacity and efficiency remains limited. In addition, the system of public procurement is still in the process of being improved. So far, a satisfactory performance has not yet been achieved in the areas of internal controls, transparency, digitalisation, professionalisation, strategic and environmentally sustainable public procurement. Furthermore, corruption, complex administrative procedures and excessive and fast-changing business regulations heavily affect the quality of the business environment. Even though the fight against corruption was stepped up, it has



**Administrative
and
Regulatory
Barriers**

¹⁶⁵ COM(2018), 424 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Slovakia and delivering a Council opinion on the 2018 Stability Programme of Slovakia, Brussels, 15.6.2018.

not achieved any progress so far. Slovakia is also encouraged to strengthen the effectiveness of the justice system, with specific attention for the independence and the appointment processes.

3.24.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Slovakia since 2017. The information originates from the eGovernment Factsheet of Slovakia.¹⁶⁶

Strategy

The National eGovernment Strategy has been analysed in various documents. The findings of these analysis, have been elaborated, heard publicly and released in December 2017. Amongst these documents can be found a Strategic architecture of public administrations, a strategic priority on integration and orchestration, a strategic priority on Data Management and Big Data, the detailed EU eGovernment Action plan and updated project management methodology for the needs of eGovernment Projects.

Legal Framework

By amending the Act on eGovernment, the delivery of official documents, online payments for electronic services and simplified authorisation of electronic documents has been introduced. This implies that electronic submissions can be signed using an eID card without qualified electronic signature, the so-called one click signature.

Other Highlights

A project has been implemented to increase the broadband speed of the internet with 30mbits/s for all citizens. The idea behind this project was to allow new generation networks in high density areas.

3.24.3 *Country Specific Recommendations*

The CSR for Slovakia¹⁶⁷ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁶⁸

Thematic Objective 2

There are no recommendations, recitals or opportunities linked to TO2 in the CSR for Slovakia.

Thematic Objective 11

Recommendations

¹⁶⁶ eGovernment Factsheet for Slovakia. Accessed on 28 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Slovakia_2018_0.pdf

¹⁶⁷ COM(2018), 424 final, Council Recommendation on the 2018 National Reform Programme of Slovakia and delivering a Council opinion on the 2018 Stability Programme of Slovakia, Brussels, 15.6.2018.

¹⁶⁸ Firstly, the recommendations are stemming from the European Commission, directly calling on Slovakia to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Slovakia. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

The CSR for Slovakia makes no recommendation of the need to intervene in the field of TO11.

Recitals

The CSR for Slovakia makes no specific mention in the recitals of the need to intervene regarding TO11.

Opportunities

Slovakia's public administration shows inefficiency and bottlenecks due to poor inter-ministerial cooperation according to recital 15. A solution could be to put in place internal eGovernment portals that ensure coherent sharing of information amongst various public services. This would enhance both cooperation and communication. Furthermore, it could be a solution to tackle the high regulatory burdens as pointed out in recital 20.

As pointed out in recital 18, the current public procurement system faces issues regarding internal controls, transparency, digitalisation, professionalisation, strategic and environmentally sustainable public procurements. The establishment of an eProcurement system would enable more internal controls, introduce digitalisation and enhance the transparency of the procurement system. These efforts would also answer to the recommendations that can be found in the CSR.

3.24.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Slovakia's NRP.¹⁶⁹

Thematic Objective 2

- **Implementation of eHealth:** Slovakia organised a gradual connection of all doctors to the eHealth environment throughout 2017. Electronic health insurance cards that allow access to the system were distributed and legislation has passed to simplify the use of the Patient Summary, ensuring that all life-saving data required to provide high-quality healthcare can be found in the Summary. Another operational eHealth function is the use of electronic prescriptions.
- **Improvement of Business Register:** The Department of Justice will take specific measures to improve the business register to reduce the administrative burden. The implementation of electronic processes is set out to be completed by the end of 2018. The aim is to improve accuracy and reduce the error rate in the registered data. The collection of deeds should be made fully digital. Furthermore, the Financial Administration aspires to decrease the administrative burden for business by expanding the two-way electronic communication with business.

Thematic Objective 11

¹⁶⁹ Slovakia National Reform Programme 2018. Accessed on 27 September 2018. Available at: https://ec.europa.eu/info/sites/info/files/2018-european_-semester-national-reform-programme-slovakia-en.pdf

- **Organisation of eGovernment:** The Slovakian concept of eGovernment had defined 10 strategic priorities. All of them were processed and published until the end of 2017 except Cybernetic and Information Security, which is to be finished in 2018. The Action Plan for eGovernment 2017-2020 was approved in November 2017. The aim is to foster implementation of key eGovernment projects and the solution of 25 life situations. The services include online payments and the use of electronic signatures. Furthermore, an amendment to the act on eGovernment was passed in September 2017 regarding the unification of the used tools, simplification of the use of electronic services, and implementation of a mechanism of inspection of compliance with obligations.
- **Upgrade of eProcurement:** In order to improve the transparency and competitiveness of business environment, an upgrade for the Electronic Public Procurement System will be prepared. In this regard, a standard for electronic invoicing was established in 2017 within the public procurement area. The aim is to digitalise the entire procurement process and ensure electronic security.

3.24.5 *Operational Programmes*

For the funding period 2014-2020, two OPs of Slovakia are specifically dealing with themes related to TO2 and TO11. The OP 'Effective Public Administration'¹⁷⁰ focusses on reducing regulatory and administrative burdens as well as promoting high standards of transparency, integrity and accountability in the Slovak public administration. The OP 'Integrated Infrastructure'¹⁷¹ has as main objectives to establish sustainable mobility; foster economic growth; improve the business environment and develop an information society.

Thematic Objective 2

- **Strengthening of eParticipation:** To provide all citizens an equal chance to participate in public affairs, modern technologies will be used by Slovakia to establish eDemocracy means. This is established in OP 'Effective Public Administration'. The goal is to raise the number of respondents the traditional systems have and focus on civil and human rights.
- **Modernisation of judicial education system:** OP 'Effective Public Administration' set out that, to prepare the judges, prosecutors and other employees of the judicial system, trainings will be developed to enhance their digital skills. Slovakia will set in place these trainings, so these employees can efficiently use the new electronic court records.
- **Provision of inclusive digital education:** Slovakia aims in 'Integrated Infrastructure' to have its eServices used by all citizens. Therefore, additional efforts will be made to include the disadvantaged groups. To this end, assistance and infrastructure availability will be established in order to increase their benefits of participation in the digital market.

¹⁷⁰ Slovakia Effective Public Administration Operational Programme. Accessed on 29 November 2018. Available at: https://ec.europa.eu/regional_policy/opempl/detail.cfm?cci=2014SK05SFOP001&lan=en

¹⁷¹ Slovakia Integrated Infrastructure Operational Programme. Accessed on 29 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/slovakia/2014sk16m1op001

- **Establishment of eServices:** To provide digital services to its citizens, according to OP 'Integrated Infrastructure', Slovakia will put in place the actions needed to ensure eCommerce, eID, eCulture and eCustom services. The main goal is to stimulate citizens and businesses to use more digital tools.
- **Creation of broadband network:** Slovakia intends, based on OP 'Integrated Infrastructure', to build broadband infrastructure throughout the country, including rural areas. This is to support the digital single market and the Digital agenda for Europe, ensuring a 100% coverage of high-speed internet offer 30 Mbit/s.
- **Ensure cybersecurity for citizens:** As the digital activities of citizens increase, Slovakia sets out in OP 'Integrated Infrastructure' to proceed in the light of the measures contained in the EU Cyber Security Strategy presented in February 2013. In particular, risk management measures will be implemented. The goal is to improve confidence in digital space and increase awareness on cyberattacks.

Thematic Objective 11

- **Development of eJustice:** Slovakia supports in OP 'Effective Public Administration' the development of eJustice by introduction electronic court records and electronic exchange of information to provide more efficient administrations within the judicial system.
- **Establishment of an eGovernment and Interoperability framework:** Slovakia plans in OP 'Integrated Infrastructure' to link the use of eGovernment to the identified life events of citizens. These events can be delivered electronically by the citizens which will simplify and automate the process of serving citizens. The implemented life situations will be linked to eServices delivered by various government departments. The interoperability will be provided by establishing eGovernment Cloud services.
- **Ensure cybersecurity in public administration:** To provide secure data exchange within public administration, Slovakia set out in OP 'Integrated Infrastructure' to develop clear rules that establish a security system that meet the highest requirements.
- **Establishment of eInvoicing:** Slovakia set out in OP 'Effective Public Administration' that it will not only put in place the conditions for the introduction of measures on eInvoicing but also to transpose the related EU directives.

3.25 Slovenia

3.25.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Slovenia's CSR of 2018.¹⁷²

Slovenia is currently in the preventive arm of the Stability and Growth Pact and subject to the transitional debt rule. Based on the 2018 Stability Programme, the headline surplus is expected to improve to 0.4% of GDP in 2018 and then reach 0.9 % of GDP in 2021. Therefore, the medium-term budgetary objective, set at 0.25% of GDP, is not planned to be achieved. Also, according to the Programme, the government debt-to-GDP ratio is expected to fall to 69.3% of GDP in 2018 and continue to fall to 58.3% of GDP in 2021.



**Economic
Outlook**

Slovenia is urged to continue in its efforts to reform the healthcare system. In fact, the government's Healthcare and Health Insurance Act, central piece of the proposed reform, was not adopted before the elections, making the prospects for its adoption uncertain. Moreover, Slovenia would like to make long-term care a new pillar of its social security system, along with healthcare, social care, pension security. Concerns, however, remains with regard to how the country will increase cost-effectiveness, accessibility and quality of care in the future.



Healthcare

A concrete action plan to reform the pension system, although not yet in place, would be desirable. The main challenges that Slovenia needs to address in this field are: ensuring the long-term sustainability and adequacy of the pension system; boosting the coverage of the supplementary pension schemes; appropriately addressing changing career paths and reducing old-age poverty risks.



**Pension
System**

Levels of unemployment have been reducing in the last number of years, although long-term unemployment remains high. The rate of people at risk of poverty or social exclusion has decreased, with the one for the elderly being, however, still above the EU average. Despite these improvements, labour shortage issues affect different vocational occupations and the working-age population, and in turn, labour supply is shrinking due to rapid ageing of the Slovenian society. Moreover, there is the need to improve lifelong learning to increase the chances of employment. This is especially true for low-skilled and older workers.



**Labour
Market**

Slovenia's business environment remains hindered by a high level of administrative burden, for instance in the area of tax compliance, but also due to restrictive regulation on access to and exercise of regulated professions, which impedes the inflow of investment. Slovenia needs to further eliminate inefficiencies in public administration and red tape stemming from a high number of laws and by-laws. Finally, public procurement procedures need to be more efficient and transparent.



**Administrative
and
Regulatory
Barriers**

¹⁷² COM(2018) 423 final, Council Recommendation on the 2018 National Reform Programme of Slovenia and delivering a Council opinion on the 2018 Stability Programme of Slovenia, Brussels, 23.5.2018

3.25.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Slovenia since 2017. The information originates from the eGovernment Factsheet of Slovenia.¹⁷³

Legal Framework

Slovenia is progressing with the preparation of a new law in the area of electronic identification and trust services that would align the previous national legislation based on the e-Signature Directive with the eIDAS Regulation. The tentative date of adoption of the new law is currently envisioned at the beginning of 2019.

Infrastructure

In December 2017, the Agency of the Republic of Slovenia for Public Legal Records and Related Services (AJ PES) established the beneficial owners register in cooperation with the Office for Money Laundering Prevention of the Republic of Slovenia. The register was established based on the Law on the Prevention of Money Laundering and Terrorism Financing. Also in 2017, the Public Payments Administration introduced an additional e-payment service called Hal mBills, which enables the payment of eServices via the dedicated mobile application.

Services

Two main changes in the field of digital public service delivery for businesses and citizens occurred since March 2017. The Public Payments Administration, together with its partners, launched the ROSE (Readiness of Slovenian eInvoicing) Action in order to increase uptake and use of eInvoicing by the Slovenian contracting authorities and contracting entities, as well as ensure compliance with the European eInvoicing standard. Moreover, regarding the public service delivery for citizens, a subsidised transport ticket for students, in the form of a single electronic ticket, has been introduced in Slovenia.

3.25.3 *Country Specific Recommendations*

The CSR for Slovenia¹⁷⁴ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁷⁵

Thematic Objective 2

Recommendations

The CSR for Slovenia makes no recommendation of the need to intervene in the field of TO2.

¹⁷³ eGovernment factsheet of Slovenia 2017. Accessed on 27 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Slovenia_2018.pdf

¹⁷⁴ COM(2018) 423 final, Council Recommendation on the 2018 National Reform Programme of Slovenia and delivering a Council opinion on the 2018 Stability Programme of Slovenia, Brussels, 23.5.2018.

¹⁷⁵ Firstly, the recommendations are stemming from the European Commission, directly calling on Slovenia to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Slovenia. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Recitals

The CSR for Slovenia makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunities

In recommendation 1, Slovenia is called on to increase the employability of its low-skilled and older workers, especially through lifelong learning. A solution to labour shortages in certain fields might come from the spreading of digital skills, which can help workers meet the requirements of the labour market.

Thematic Objective 11

Recommendations

The CSR for Slovenia makes no recommendation of the need to intervene in the field of TO11.

Recitals

In recital 9, it is mentioned that 'a health technology assessment system is planned to be established by 2020 and eHealth solutions will improve monitoring nationwide.'

Opportunities

In recital 17, public procurement in Slovenia is defined as inefficient and non-transparent. To help overcome these issues, the introduction of eProcurement solutions may be beneficial.

3.25.4 National Reform Programme

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Slovenia's NRP.¹⁷⁶

Thematic Objective 2

- **Promotion of the use of ICT in higher education:** In an effort to further improve the higher education system of Slovenia, the use of ICT for didactical purposes will be promoted. This should enhance the transfer of skills and knowledge to students, while allowing more flexible forms of learning and teaching.

Thematic Objective 11

- **Technological renewal of public procurement information system:** The technological renewal of the information system for the implementation of electronic public procurement began in 2017. In the same year, 169 contracts in public procurement procedures were awarded through electronic auctions, with an estimated saving of about five million of euros.

¹⁷⁶ Slovenia National Reform Programme 2018. Accessed on 27 September 2018. Available at: https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-slovenia-en_0.pdf

3.25.5 Operational Programmes

For the funding period 2014-2020, one OP of Slovenia is specifically dealing with themes related to TO2 and TO11. The OP 'Implementation of the European Cohesion'¹⁷⁷ focusses on dealing with employment rates, people at risk of poverty of social inclusion, strengthening research and development efforts and more efficient use of energy sources.

Thematic Objective 2

- **Improve internet access:** To move towards a digital society, Slovenia plans to provide a powerful network infrastructure for electronic communications, which must ensure high-quality Internet access for all and high speeds for the use of demanding interactive multimedia e-services, over the top content, etc. Furthermore, the broadband infrastructure in rural areas will be set up to enable a more balanced regional development.
- **Scale up eServices for citizens:** Slovenia found its eServices for citizens are not at the same level of the other Member States. Therefore, it intends to establish actions that will facilitate the use of digital services provided by public administration to citizens. This will include efforts towards digitalisation of the entire process, the one-stop shop concept and a single editorial policy. Furthermore, the digital channels that offer public services to end-users will be made enabled for foreigners.
- **Enhance eLearning:** Slovenia intends to improve its efforts to strengthen the eSkills in education. As a first step, the ICT infrastructure in the education field will be enforced and updated. Afterwards, the focus can be oriented towards digital learning for both students and teachers.
- **Foster Open Data:** Slovenia finds that open data of the public sector can enhance innovation in society, therefore, it intends to open up the state-owned computing cloud and make certain data available for businesses and citizens, making it a good basis for the development of new services and products.

Thematic Objective 11

- **Development of eJustice:** To foster a more performant judiciary system, Slovenia will invest in digitalising its justice system. The actions will include identification of the missing information solutions in the judiciary will be carried out first, followed by providing additional e-services, creating a web portal and digitization of files.
- **Establish ICT infrastructure in public administration:** Slovenia will develop the technical and semantic interoperability as well as the building blocks, applications, data records and open data publishing systems to be compliant with the Data Reuse Directive. Furthermore, it will invest in the necessities to deliver eServices, single contact points, ePayments, eArchives

¹⁷⁷ Slovenia Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014-2020. Accessed on 27 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/slovenia/2014si16maop001

and eSignatures to move towards an eSociety. This will also include a Government cloud and a new single information and communication platform.

- **Upgrade eProcurement system:** Slovenia intends to upgrade the information system for eProcurement with additional modules for the publication of contracts and the transparency of the entire public procurement procedure and calls for tenders.

3.26 Spain

3.26.1 *Socio-economic outlook*

The following information originates from the socio-economic overview which introduces the recommendations set in Spain's CSR of 2018.¹⁷⁸

Spain is currently in the corrective arm of the Stability and Growth Pact. It plans to correct the excessive deficit by 2018 and the government balance is envisioned to continue improving, reaching a 0,1% of GDP surplus in 2021. The medium-term budgetary objective is not planned to be reached within the 2018 Stability Programme time horizon. The CSR points out risks to the achievement of the fiscal targets are related to both stronger revenue growth and more contained expenditure increase than projected in the Commission 2018 spring forecast, and to the possible materialisation of further contingent liabilities.



**Economic
Outlook**

To improve the fiscal framework, Spain was requested by the Council to take measures as the increasing automaticity of mechanisms to prevent and correct deviations from the fiscal targets. However, the CSR points out the 2018 Stability Programme does not report plans to reinforce the domestic spending rule. Furthermore, Spain is encouraged by the Council to improve its public procurement policy framework. New legislation in this regard has been adopted in November 2017 however, it needs to be complemented by the establishment of a new governance structure and control mechanisms. The CSR points out that the fight against corruption needs to continue in order to restore the faith in institutions across all levels of government.



**Fiscal
Framework**

Despite a robust growth of employment in Spain, the unemployment rate remains above the pre-crisis level and ranks amongst the highest in the Union. As a result, there can be found a considerable amount of untapped skills potential. Policy initiatives have been put in place, but the effectiveness of these measures depends on the capacity of regional public employment and social services to deliver personalised support, which is only improving slowly. The CSR stresses the need to ensure better profiling and matching of jobseekers with employers' needs. Another challenge that needs to be tackled is the proportion of employees on temporary contracts, which is among the highest in the Union and comprises especially young and low-skilled workers.



**Labour
Market**

While economic growth and job creation decrease the share of people at risk of poverty and social exclusion, these remain nonetheless above the Union average and so does the income inequality. In particular, the child poverty rate continues to be very high. This is due to a low impact of social transfers, low effectiveness of family benefits and fragmentation of national schemes that target different groups of jobseekers, managed by different administrations. As a result, the people in need do not receive support.



**Social
Inclusion**

Businesses environment needs to tackle two challenges. The first is the regulatory disparity in the business environment, which keeps the productivity growth restrained. The Law on Market Unity that was adopted to curb the disparities, has only been implemented partially. The Spanish Constitutional Court has found it to be a void principle in multiple judgements, leading the CSR to urge for the



**Business
Environment**

¹⁷⁸ COM(2018), 408 final, Recommendation for a Council Recommendation on the 2018 National Reform Programme of Spain and delivering a Council opinion on the 2018 Stability Programme of Spain, Brussels, 15.6.2018.

establishment of common standards. The second issue is the lack of innovation capacity of Spanish firms, hindering their possibility to improve their productivity.

3.26.2 *Country Digital Government Outlook*

The following are some of the digital government highlights having occurred in Spain since 2017. The information originates from the eGovernment Factsheet of Spain.¹⁷⁹

Strategy

The Spanish Government implemented two strategies related to digitalisation in 2017. The first one is the Third National Action Plan, a result of the participation of Spain in the Open Government Partnership. The aim of the Partnership is to make governments more transparent, accountable and improve the responsiveness to citizens. The Plan has three main objectives: promote mechanisms of participation and dialogue with citizens; ensure inter-administrative cooperation between different levels of the administration; lay out the foundations of Open Government to adopt measures beyond the Third Plan. The second relevant strategy is the National Security Strategy 2017, developed in accordance with the law on National Security. Within the strategy, the section on cybersecurity clarifies the aim to guarantee a secure use of networks, communications and information systems by strengthening the capacity of prevention, detection and response to cyber-attacks. Furthermore, specific measures will be boosted and adopted to contribute to the promotion of a secure and reliable cyberspace.

Organisational Change

Based on the adoption of a Royal Decree, the Ministry of Finance and Public Function has gained control over the Digital Administration; the coordination of process of rationalisation of ICT; and the promotion of eGovernment. Furthermore, the Directorate for Information Technologies and Communication has been transformed into the General Secretary for Digital Administration. Finally, in 2017 the FNMT-RCM (*Fábrica Nacional de Moneda y Timbre – Real Casa de la Moneda*) and the Ministry of Finance and Public Function formalised an agreement to provide trust services for the General State Administration in terms of issuing and managing electronic certificates as well as creating a qualified electronic time stamp.

Infrastructure

The Universal Card of Social Protection enables coordinated management of public aids provided at different levels of the administration. Regarding Primary Registries and Public Notaries, an integration between the Registry of Last Wills of Spain and the European Network of Will Registries has been developed. Furthermore, the use of electronic means for communication between profession groups with the Ministry of Justice has been strengthened.

¹⁷⁹ eGovernment Factsheet for Spain. Accessed on 27 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Spain_2018_0.pdf

Services

Spain has seen an increase in the use of electronic prescriptions, making the regions fully integrated within the nation-wide electronic system. The handling of the pensions is connected with the Data Intermediation Platform. This facilitates the use for citizens as the obligation to provide documents in the application of different procedures has been removed. Furthermore, the autonomous community of Aragon is developing a user-friendly official website through which it will grant access to the electronic services provided by the regional government.

3.26.3 Country Specific Recommendations

The CSR for Spain¹⁸⁰ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁸¹

Thematic Objective 2

Recommendations

The CSR for Spain makes no recommendation of the need to intervene in the field of TO2.

Recitals

Recital 14 indicates the skills mismatches that can be currently found in Spain do not only limit innovation capacity but also negatively affect the long-term potential for productivity growth. The CSR therefore refers to the potential of a proposal for a new national digital strategy, which acknowledges the need to improve digital skills. The challenges that are stressed are the low number of specialists in information and communication technologies as well as promoting the role of the education system in advancing digital skills. The CSR points out that training workers in digital skills would allow Spanish companies to remain competitive in an increasingly digitalised economy.

Opportunities

In the context of employment, recital 10 of the CSR points out the need to organise better profiling and matching of jobseekers with employers' needs. A solution could be to set up an eGovernment portal for businesses and citizens where the employers express their needs, and which can be used by jobseekers as a one-stop shop in their search for a new employment. This would also answer to the request in the second recommendation to offer effective support for jobseekers, including through better cooperation with employers.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Spain.

¹⁸⁰ COM(2018) 408 final, Council Recommendation on the 2018 National Reform Programme of Spain and delivering a Council opinion on the 2018 Stability Programme of Spain, Brussels, 15.6.2018.

¹⁸¹ Firstly, the recommendations are stemming from the European Commission, directly calling on Spain to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Spain. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

3.26.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Spain's NRP.¹⁸²

Thematic Objective 2

- **Implementation of Universal Social Card:** To improve the efficiency and effectiveness of the active employment policies, progress is being made in the implementation of the Universal Social Card. A database has been created as well as a computer application that supports the system.
- **Development of digital skills:** In line with the analysis of the Annual Growth Survey, a review is conducted with special attention to digital skills. The teachers will be trained, and the educational community will be digitalised. To do this, a Common Framework and Portfolio of Digital Teaching Competition will be set up to bridge the digital divide amongst schools, improve digital inclusion of students and improve the educational quality through training to make teachers more digitally competent. In addition, the scope of digital skills is also expanded to the digital capabilities of workers in the industry, which will be promoted through training programs. Furthermore, the Plan Digital Skills Training ensures state grants to improve digital and information technology and communication skills of workers, to attain a higher competitiveness.
- **Enhancement of ICT use in education:** In the education sector, the Connected Schools Programme is established to improve the conditions for connectivity and ensure the digital transformation of education centres. Furthermore, the Educational Digital Transformation Plan is organised to encourage the educational use of ICT.
- **Establishment of digital transformation in business:** For business, an Inter-Ministerial Working Group to Promote Digital Transformation of the Spanish Economy is put in place. The group will analyse, design and promote the digitalisation process. Afterwards, a Plan to Drive the Digital Transformation of the Spanish Economy will be developed.
- **Creation of ICT infrastructure:** To integrate all citizens into the digital era, the Spanish Government will invest in the creation of high capacity networks as well as develop data protection regulation and information processing. To connect the entire Spanish population to an internet access speed of at least 300Mb/s, a call for aid to promote the deployment of ultrafast broadband networks will be released under the 300x100 plan.

Thematic Objective 11

- **Digital transformation of administration:** A law on Common Administrative Procedure and one on Legal Regime of the Public Sector are to be developed in order to respect the use of electronic means in the normal functioning of the administration. In particular, the Justice

¹⁸² Spain National Reform Programme 2018. Accessed 27 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-spain-es.pdf>

Administration will establish a General Access Point on General Administration of Justice. Electronic access to all services of the Administration of Justice will be provided, together with a new electronic civil registry and an electronic working desk.

3.26.5 *Operational Programmes*

For the funding period 2014-2020, two OPs of Spain are specifically dealing with themes related to TO2 and TO11. The OP, 'Sustainable Growth'¹⁸³ focusses on anticipating and adapting to global changes in the fields of energy, urban development, water and transport. The OP 'Intelligent Growth'¹⁸⁴ sets out actions that aim to contribute to the improvement of the competitiveness of the Spanish economy to promote smart growth supported by ICT and to tackle the needs of SMEs.

Thematic Objective 2

- **Tackling the digital divide:** Spain sets out in OP 'Sustainable Growth' to complement promotion of ICT in urban development strategies with deploying technologies for bridging the digital divide. In particular, the issue of digital gender will be addressed through promoting access to public services to disadvantaged groups. Furthermore, Spain will improve digital literacy by ensuring ICT is made on an equal basis, taking into account the gender perspective in the use and content of ICT.
- **Fostering eMobility:** In Spain, the plans to develop urban mobility will be underpinned by the use of electric mobility. This is set out in the OP 'Sustainable Growth'. These intentions include the establishment of traffic management portals, real time information on traffic situations available via apps, intelligent parking systems and charging stations for electric vehicles.
- **Establish ultrafast internet:** Spain indicated in OP 'Intelligent Growth' to put in practice ultrafast internet connectivity for educational centres. This will help to create both an educational network on the one hand and modernize the teaching and learning processes on the other.
- **Enhance eCommerce:** In OP 'Intelligent Growth' Spain set out as one of the main programmed actions to ensure implementation of ICT by SMEs, so they can implement, develop and improve eCommerce.
- **Promote the digital economy:** Based on OP 'Intelligent Growth', Spain will invest in actions that improve competitiveness and serve as vehicle to promote ICT use and eCommerce. The marketing will include digital content, a tutorial portal for digital economy and meetings with relevant stakeholders.
- **Develop eHealth:** While Spain declares its eHealth system is very well evolved, nevertheless efforts for improvement will be made. In OP 'Intelligent Growth', it is said investments will be made to use ICT in the management of chronic pathologies as well as deploying telemedicine

¹⁸³ Spain Sustainable Growth Operational Programme. Accessed on 30 November 2018. Available at: https://ec.europa.eu/regional_policy/en/atlas/programmes/2014-2020/spain/2014es16fop002

¹⁸⁴ Spain Intelligent Growth Operational Programme. Accessed on 30 November 2018. Available at: [http://www.dgfc.sepg.hacienda.gob.es/sitios/dgfc/es-](http://www.dgfc.sepg.hacienda.gob.es/sitios/dgfc/es-ES/ipr/fcp1420/p/Prog_Op_Plurirregionales/Documents/PO_CrecimientoInteligente_FEDER_2014-2020.pdf)

[ES/ipr/fcp1420/p/Prog_Op_Plurirregionales/Documents/PO_CrecimientoInteligente_FEDER_2014-2020.pdf](http://www.dgfc.sepg.hacienda.gob.es/sitios/dgfc/es-ES/ipr/fcp1420/p/Prog_Op_Plurirregionales/Documents/PO_CrecimientoInteligente_FEDER_2014-2020.pdf)

and telecare projects. Furthermore, applications will be established to inform patients and foster their participation and collaboration in decision-making. Additionally, the integration of the information systems of the National Health System will be completed and the implementation of the Interoperable Electronic Recipe in the entire National Health System will be finalised.

- **Foster digital skills:** Spain plans actions to develop the digital skills in education in OP 'Intelligent Growth'. These efforts include the use of a common frame of reference of the digital teaching competence for the whole educational system; the generation of a common space of training resources; a shared model of accreditation of competencies; and the establishment of standards in the field of Educational ICTs.

Thematic Objective 11

- **Creation of eGovernment and Interoperability framework:** Spain declares in OP 'Sustainable Growth' it will promote ICT in urban development strategies through creation local eGovernment. Therefore, the public services in cities will be modernised and technological project to introduce ICT will be put in place. Part of this strategy includes the promotion of Open Government through publication of all data.

3.27 Sweden

3.27.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in Sweden's CSR of 2018.¹⁸⁵

Sweden is in the preventive arm of the Stability and Growth Pact. The Government plans to achieve a surplus of 1.0% of GDP in 2018 and continue to meet the medium-term budgetary objective of a structural deficit of 1% of GDP throughout the programme period. Additionally, the debt-to-GDP ratio is expected to fall to 37.3% in 2018 and to continue declining to 29.0% in 2021, according to the Convergence Programme. Overall, according to the Council, Sweden is expected to comply with the provisions of the Stability and Growth Pact in 2018 and 2019.



**Economic
Outlook**

Household debt levels in Sweden are continuously rising. To relieve this, Sweden should adjust fiscal incentives through gradual limitation of the tax deductibility of mortgage interest payments and increases in recurrent property taxes, but despite reform attempts, little progress has been registered.



**Housing
Market**

Sweden can count on an advanced economy. However, the country is experiencing labour shortages of highly skilled workers, especially in fields like education, health, engineering and information and communication technologies. Given that, it appears even more crucial to successfully integrate into the labour market people with a migrant background. The rate of unemployment of non-EU born people is in fact considerably lower than the one for the overall population.



**Labour
Market**

3.27.2 Country Digital Government outlook

The following are some of the digital government highlights having occurred in Sweden since 2017. The information originates from the eGovernment Factsheet of the Sweden.¹⁸⁶

Strategy

In August 2017 the Swedish government decided to give the Social Security Agency (*Försäkringskassan*) the task of offering and supporting secure and coordinated IT operations within government administration. The mission aims at long-term raising IT security in Swedish authorities and will run until 2020, when the effort is to be evaluated and permanent forms determined.

Legal Framework

In December 2016 the Swedish government decided to give a special commissioner the task to investigate and analyse to what extent there is legislation that unnecessarily aggravates digital development and cooperation in the public sector. The results from the commission will be reported in 2018.

¹⁸⁵ COM(2018) 426 final, Council Recommendation on the 2018 National Reform Programme of Sweden and delivering a Council opinion on the 2018 Stability Programme of Sweden, Brussels, 23.5.2018.

¹⁸⁶ eGovernment factsheet of Sweden 2017. Accessed on 19 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_Sweden_2018_0.pdf

Infrastructure

In March 2017, the technical framework of the Swedish eidentification 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 eidentification Board.

Services

The Swedish Association of Local Authorities and Regions (SKL), together with municipalities, the Swedish Agency for Economic and Regional Growth and the Swedish Companies Registration Office launched the programme *Serverat*. The purpose of *Serverat* is to facilitate the life of entrepreneurs willing to open and run a business, while streamlining the work of the municipality. The programme was launched, first for the restaurant sector, and then extended to the tourism industry. In December 2017, after a six-month pilot phase, *Serverat* has been launched in full mode in six municipalities. During the year 2018 it is expected to be launched in approximately 20 municipalities.

Other Highlights

From autumn 2018 the use of the computer or other digital tools will be compulsory when students take tests in English, Swedish and Swedish as a second language in grade 9, upper secondary school and municipal adult education at upper secondary level.

3.27.3 Country Specific Recommendations

The CSR for Sweden¹⁸⁷ is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁸⁸

Thematic Objective 2

Recommendations

The CSR for Sweden makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for Sweden makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunity

In recital 9, the need for Sweden to have highly skilled workers that can keep up with the pace of the country's advance economy is highlighted. Given that one of the sectors for which there is a labour shortage is the one of information and communication technologies, this can be recognised as an opportunity for Sweden to further spread eSkills.

¹⁸⁷ COM(2018) 426 final, Council Recommendation on the 2018 National Reform Programme of Sweden and delivering a Council opinion on the 2018 Stability Programme of Sweden, Brussels, 23.5.2018.

¹⁸⁸ Firstly, the recommendations are stemming from the European Commission, directly calling on Sweden to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit Sweden. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

Thematic Objective 11

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for Sweden.

3.27.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in Sweden's NRP.¹⁸⁹

Thematic Objective 2

- **Digitalisation of SMEs in the Västra Götaland Region:** As part of the Digital SME project, several small and medium-size enterprises in the region will be assisted in their digitalisation efforts. This entails focusing on employees' need for digital skills thanks to the provision of trainings, but also enhancing the companies' knowledge about the opportunities brought about by digitalisation and developing a strategic plan for the digitalisation of their operations. The aim is to offer these firms the tools to remain competitive in an increasingly stronger global competition.
- **Preservation of the cultural heritage through digital means:** The Swedish National Heritage Board, together with Region Gotland, Uppsala University and Science Park Gotland, has launched a project for the creation of an incubator for the preservation and fruition of cultural heritage thanks to digital means. The incubator aims to stimulate innovation and entrepreneurship which will in turn enable the preservation of archives, libraries and museums through the creation of new digital services.

Thematic Objective 11

- **Digitalisation in the field of (public) housing:** The government has proposed amendments to the Planning and Building Act to promote the use of ICT tools in this field by issuing uniform standard, as well as assign special tasks to the National Board of Building, Planning and Housing and the Swedish Mapping, Cadastral and Land Registration Authority. The aim is to increasingly create digitally-assisted base maps, detailed development plans and plan provisions, which can be easily exchanged between different agencies.

3.27.5 *Operational Programmes*

A thorough evaluation of Sweden's national OPs for the 2014-2020 financing period has revealed that there are no initiatives planned under TO2 and TO11 that would fall under the scope of this study.

¹⁸⁹ Sweden National Reform Programme 2018. Accessed on 21 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-sweden-en.pdf>

3.28 United Kingdom

3.28.1 Socio-economic Outlook

The following information originates from the socio-economic overview which introduces the recommendations set in UK's CSR of 2018.¹⁹⁰

The United Kingdom is currently in the corrective arm of the Stability and Growth Pact and subject to the transitional debt rule. The government expects the headline deficit to fall from 2.2% of GDP in 2017-2018 to 1.8% of GDP in 2018-2019. According to the Convergence Programme, the government debt-to-GDP ratio is expected to stabilise around 85.5% from 2017-2018 to 2018-2019, before falling to 84.8% of GDP in 2021-2022. Given the fact that the measures to support the planned deficit targets in 2016-2017 are sufficiently specified, the macroeconomic scenario underpinning this objective is plausible.

The UK continues to suffer from insufficient supply of housing, especially in geographical areas of high economic growth. Despite the government's various initiatives, and an annual net increase in housing supply, housing demand continues to outstrip supply, and this is reflected also in a fall of home ownership for young people, contributing to intergenerational inequality.

Since the economic crisis, productivity has stagnated in the UK due to low capital investment, skills shortages, skills mismatches and a shift in the composition of the economy towards business sectors with lower productivity.



**Economic
Outlook**



**Housing
Market**



**Labour
Market**

3.28.2 Country Digital Government Outlook

The following are some of the digital government highlights having occurred in the UK since 2017. The information originates from the eGovernment Factsheet of the UK.¹⁹¹

Strategy

In February 2017, the UK government launched a new Government Transformation Strategy 2017 to 2020. The government strategy aims to strengthen the UK's digital capabilities and to transform the relationship between citizens and the state by putting more power in the hands of citizens and being more responsive to their needs. This new stage in the UK's government digital strategy rests on three main components: Transforming whole Citizen-Facing Services; Full Department Transformation; Internal Government Transformation.

Infrastructure

¹⁹⁰ COM(2018) 427 final, Council Recommendation on the 2018 National Reform Programme of the United Kingdom and delivering a Council opinion on the 2018 Stability Programme of the United Kingdom, Brussels, 23.5.2018.

¹⁹¹ eGovernment factsheet of the UK 2017. Accessed on 24 September 2018. Available at: https://joinup.ec.europa.eu/sites/default/files/inline-files/eGovernment_in_United_Kingdom_2018_0.pdf

Services on the Government Gateway, the website used to register for online government services, both at the national and local level, are gradually being moved to replacement systems. All services will have moved by March 2019.

Services

There are various new eGovernment Services available for citizens through the GOV.UK Verify Portal. Currently, over 2 million people have created a Verify account to perform over 6 million secure transactions with government.

Other Highlights

The Government's Digital Charter has been published on 25 January 2018. It sets the direction for the UK to become the best place to start and grow a digital business and the safest place in the world to be online. The Charter brings together a broad, ongoing programme, which will evolve as technology changes. Current priorities include online harms, liability, data and artificial intelligence ethics and innovation, disinformation and cybersecurity.

3.28.3 *Country Specific Recommendations*

The CSR for the UK¹⁹² is analysed according to TO2 and TO11. Furthermore, for each TO there is a subdivision into recommendations, recitals and opportunities.¹⁹³

Thematic Objective 2

Recommendations

The CSR for the UK makes no recommendation of the need to intervene in the field of TO2.

Recitals

The CSR for the UK makes no specific mention in the recitals of the need to intervene regarding TO2.

Opportunity

In recommendation 3, the UK is called on to “address skills and progression needs by setting outcome targets for the quality and the effectiveness of apprenticeships and by investing more in upskilling those already in the labour force”. In this regard, the use of digital tools for training may be beneficial in addressing this problem.

Thematic Objective 11

¹⁹² COM(2018) 427 final, Council Recommendation on the 2018 National Reform Programme of the United Kingdom and delivering a Council opinion on the 2018 Stability Programme of the United Kingdom, Brussels, 23.5.2018.

¹⁹³ Firstly, the recommendations are stemming from the European Commission, directly calling on the United Kingdom to take action in domains related to digital. Secondly, the recitals are suggestions relating to digital solutions that can benefit the United Kingdom. Thirdly, opportunities are issues brought up by the Commission that imply a possible digital solution.

There are no recommendations, recitals or opportunities linked to TO11 in the CSR for the UK.

3.28.4 *National Reform Programme*

The following links to TO2 and TO11 highlight the main priorities and planned measures in the digital government domain identified in the UK's NRP.¹⁹⁴

Thematic Objective 2

- **Increased public spending in transport infrastructure:** The government of the UK is planning to increase its spending in infrastructure. This includes the financing, through the National Productivity Investment Fund, of next-generation digital infrastructure and intra-city transport. For instance, £740 million will be devoted to the setup of digital infrastructure and the mobilisation of the market to develop full-fibre broadband networks and 5G capacity.
- **Improvement of post-16 technical education:** The Post 16 Skills Plan aims to address the problem of excessive choice of qualification for young people, while at the same time ensuring that there is a clear link between the qualification and the intended job. Particular focus is given to gaining the technical knowledge and skills required to enter skilled employment or higher-level technical study, with subjects covering also the digital field.

Thematic Objective 11

- **Creation of a digital spatial catalogue of public sector land assets:** The Northern Ireland Administration is working on a Public Land for Housing project which aims to create a digital spatial catalogue of public sector land assets, which in turn shall address the land availability issue, by making the re-use for housing easier.
- **Introduction of a new GovTech Fund:** The government will introduce a new GovTech Fund (up to £20 million), as well as a GovTech Catalyst, which are meant to ease the provision of new products from firms using the latest emerging technologies to the government. The final aim is to give the government cutting edge solutions to deliver more efficient public services.

3.28.5 *Operational Programmes*

A thorough evaluation of the UK's national OPs for the 2014-2020 financing period has revealed that there are no initiatives planned under TO2 and TO11 that would fall under the scope of this study.

¹⁹⁴ United Kingdom National Reform Programme 2018. Accessed on 24 September 2018. Available at: <https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-uk-en.pdf>

4. Findings synthesis and analysis

This chapter describes the main challenges (RQ3) still faced by the EU Member States in the context of TO2 and TO11, as well as the main elements common (RQ2) across the EU, based on the CSRs, NRPs and OPs analysed. It provides an analysis of the key findings per Member State that were previously presented in chapter 3. The remaining of this chapter is organised as follows:

- **Section 4.1 Socio-economic Outlook**, outlining the main socio-economic recurring challenges that were identified in the European countries;
- **Section 4.2 Digital Government Outlook**, summarising the main accomplishments related to the digitalisation of public administrations and provision of digital public services;
- **Section 4.3 Country Specific Recommendations – Key findings**, mapping the different recommendations according to TO2 and TO11;
- **Section 4.4 National Reform Programmes – Key findings**, providing an overview of Member States' digital government reform priorities, also mapped according to TO2 and TO11;
- **Section 4.5 Operational Programmes – Key findings**, giving an overview of the Member States' funding priorities related to the digital government field in relation with TO2 and TO11.

4.1 Socio-economic Outlook

A detailed analysis carried out of the 2018 Country Specific Recommendations of the 27 Member States¹⁹⁵ resulted in the identification of 13 recurrent themes of socio-economic challenges. These range from issues in the private sector such as businesses and public cooperation, through the legislative and justice systems in Member States, to other public matters such as education and healthcare provision. Table 1 below provides an overview of the main socio-economic challenges pointed out in the CSRs per Member State, along with the frequency of occurrence of the challenges.

Table 1. Socio-economic challenges of EU Member States according to the CSRs

Challenges	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK	Tot.
Labour Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	28
Public Spending	✓	✓				✓			✓	✓	✓			✓	✓		✓				✓								10
Tax System		✓			✓					✓	✓		✓				✓	✓	✓	✓			✓						10
Fiscal Framework	✓	✓		✓								✓	✓		✓	✓						✓		✓		✓			10
Healthcare	✓		✓		✓							✓	✓	✓		✓							✓		✓				9
Administrative and Regulatory Barriers			✓	✓	✓										✓	✓					✓		✓	✓	✓				8
Social Inclusion			✓					✓					✓			✓	✓					✓	✓			✓			8
Education		✓	✓	✓	✓	✓					✓											✓							7
Research and Innovation			✓	✓		✓		✓		✓					✓							✓							7
Housing Market							✓											✓			✓						✓	✓	5
Justice System					✓								✓			✓			✓		✓								5
Pension System						✓											✓		✓							✓			4
Business Environment	✓	✓					✓																				✓		4
Tot.	5	6	6	5	6	5	3	3	2	4	4	3	6	3	5	6	5	3	4	4	4	4	4	3	4	4	2	2	

Source: Analysis performed by Wavestone, Dec 2018.

Note: The Commission did not issue a CSR to Greece this year, therefore, the information stems from the Compliance Report on the ESM Stability Support Programme for Greece.

The remaining section consists of a short explanation of the identified socio-economic challenges in different thematic areas. These explanations are based on a general overview of the socio-economic situation in all EU Member States, as well as a country example that best reflects the challenge.

- Administrative and Regulatory Barriers:** The performance of public administrations is a concern throughout the European Union. Challenges include, for example, transparency and corruption in the public sector system; weak regulatory quality and low efficiency of public administrations and administrative and regulatory barriers that impede the establishment of new businesses. In Croatia, public service provision is inefficient because of the wide distribution of competences across different levels of government. Administrative barriers to citizens and businesses can be observed because of the fragmentation of the different levels of administrations wherein local and the central administrations do not cooperate.
- Business Environment:** The growth of a country in terms of productivity is important for its economic performance. There are several factors that are significant to consider and to

¹⁹⁵ Note: The European Commission did not issue a CSR to Greece this year, the information for this section was taken from the Compliance Report on the ESM Stability Support Programme for Greece. Accessed on 1 October 2018. Available at: http://www.consiliium.europa.eu/media/36299/compliance_report_4r_2018-06-20-docx.pdf

overcome, especially the lack of competition amongst firms in various sectors leading to high prices. In Austria, for instance, there is not enough competition in the service sector. The economy is reliant on SMEs which are aiming to digitalise and expand. Austria's objective is to scale up innovative companies.

- **Education:** Since education serves as the foundation for the future labour market, the issues that various European countries face given skills shortages and skills mismatches need to be tackled. Furthermore, the lack of opportunities at an early age also affect higher education graduates and later the ineffectiveness of the labour market. This is, for example, a problem in Bulgaria where inequalities appear from an early age as ethnically-mixed kindergarten are unusual. At a later stage in education, the country sees a shortage of skills that are necessary for its growth. Adults do not participate in continuous learning either and is something to be addressed.
- **Fiscal Framework:** Defined as comprising all arrangements that underlie the conduct of budgetary policies of general government,¹⁹⁶ the fiscal frameworks of Member States can be described as complex and needing several improvements. Spain, for example, was called upon by the Commission to establish a new governance structure, fight corruption, take measures to prevent deviations from the fiscal targets and restore faith in institutions across the government.
- **Healthcare:** The provision of healthcare services is an issue in several countries, especially amongst those who joined the European Union after 2004. There are issues such as challenging access to service provision, lack of efficiency, shortages, corruption and long-term problems that all European countries may have to face because of the ageing population. Ireland's healthcare system is costly and is facing challenges and high expenditure related to the cost of ageing. Taking care of more and more people are putting pressure on establishing primary care as a gatekeeper role to alleviate the burden on the hospitals.
- **Housing Market:** Challenges concerning the housing market vary from matters such as high prices to high household debt accumulation by owners. This socio-economic problem is the most recurrent in Northern Member States in general, such as Luxembourg. The latter sees a bottleneck because of lack of incentives for private owners to sell land meeting fast employment and population growth. There is a significant mismatch between supply and demand in the Luxembourgish housing market.
- **Justice System:** The judiciary is often affected in a negative way throughout Europe due to limited transparency, low quality of legislation and corruption in the system due to negative external influence. An example of this is the proposal of Commission to Poland to open social and public consultations to enhance the quality of legislation.
- **Labour Market:** All 28 EU Member States face challenges in the labour market. The recurrent problems are the following: gender pay gap; high unemployment rate; lack of integration in the workforce; labour and skills shortages; long-term unemployment; not enough diverse

¹⁹⁶ European Commission (2012). *Fiscal frameworks across Member States* in European Economy Occasional Papers 91. Accessed on 24 October 2018. Available at: http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp91_en.pdf

economy; lack of participation in the labour force and in some countries even reduction of the labour force.

- **Pension System:** Four countries face challenges in their pension system provision. These challenges are mostly related to the long-term problems that will appear, for example the rising pension expenditure due to the ageing population across Europe; boosting the coverage of the supplementary pension schemes where national pension plans are limited; and facing the risks of old-age poverty. Malta for example, is one of these countries, where there is a two-fold challenge, firstly in terms of long-term sustainability of public finances and secondly regarding adequate retirement income, which should be ensured. Additionally, the gender coverage gap of pensions is also high.
- **Public Spending:** Countries' public expenditure is oriented towards goods and services. Any increase in public spending is expected to benefit citizens and businesses who will receive better provisions. The trends of government spending that were analysed in 2018 are increase in costs of pensions, health and long-term care, i.e. old-age related expenditures, as well as strengthening the corruption prevention framework in various countries. In the example of the Czech Republic, there are concerns from public and businesses on the ongoing corruption and bribery. The government is investing in new public procurement frameworks such as digitalisation on all levels of government.
- **Research and Innovation:** European countries are constantly evolving and in order to be models of best practice, governments must invest in research & development and innovation. This could be efficiently done through cooperation between the private sector, public sector and academia. France for instance has a low innovation performance compared to the EU average. Public support schemes are not efficient. Furthermore, the most important shortcoming is the lack of research partnerships between academia and the industry.
- **Social Inclusion:** Individuals and groups, especially the vulnerable ones, should be included in all aspects of society. In Eastern and Southern Europe, a sensitive topic is the high risk of poverty and income inequalities. For example, the share of Hungarian people at risk of poverty and social exclusion is above the EU average. In addition, the minimum income benefit is below 50% of the poverty threshold – the lowest in the European Union. Social dialogue processes are underdeveloped and there is not enough citizen involvement in policy design and implementation.
- **Tax System:** The most common macroeconomic trend associated to tax in the analysis of the 2018 CSRs is aggressive tax planning. This is the case in the Netherlands for example. Companies often engage in aggressive tax planning leading to distorted competition. In addition, a loss of public finances can also be observed along with the unequal treatment of taxpayers. The government has put forward a reform agenda on taxation.

The identified themes of challenges range between the private and public sectors. The most recurrent challenge that Member States face pertains to the labour market field, while public spending, tax system and fiscal framework emerge as common challenges as well.

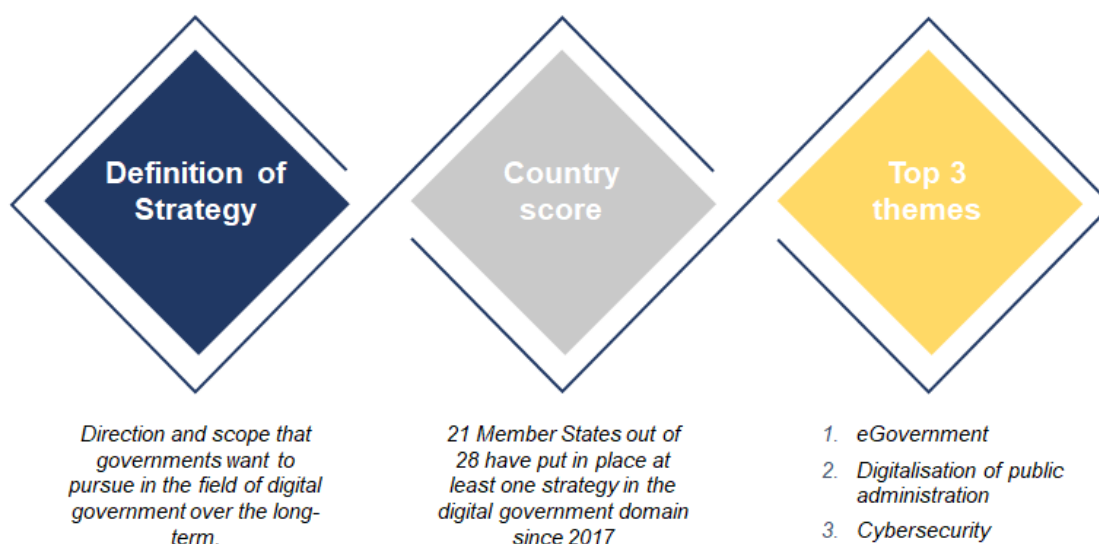
4.2 Digital Government Outlook

The following section provides a factual summary of the most recent developments regarding digital government of the 28 Member States covered by the scope in the study. The information collected is based on the 2018 eGovernment Factsheets.¹⁹⁷ The logic of thematic division thus follows the logic of the factsheets (i.e. strategy, organisational change, legal framework, infrastructure and services). The most recurring themes are explained and highlighted, accompanied by various country examples.

4.2.1 Strategy

Strategy, in the context of this study, is defined as the long-term direction and scope that governments want to pursue in the field of digital government. In general, the main aims of the digital strategies put forward by the different governments are to harness the potential of ICT technologies in different sectors, foster the digital transformation of the public administration and provide high-quality digital public services to its citizens.

Figure 6. Digital government outlook: Strategy



Source: Analysis performed by Wavestone, Dec 2018.

Based on the main digital government highlights collected through the eGovernment Factsheets 2018, 21 Member States out of 28 have put in place at least one strategy in the digital government domain since 2017. As shown in Figure 6, the three most recurring themes when it comes to recently implemented strategies in the digital government domain are:

- **eGovernment:** Many countries have launched what they generally call ‘eGovernment strategies’. In recent years, however, there has been a shift from the concept of eGovernment, which focuses in particular on the simple digitalisation of services, to the broader one of digital government, which explores how governments can best use information and communication technologies to embrace good government principles and achieve policy goals¹⁹⁸. One

¹⁹⁷ Joinup (2018). *eGovernment Factsheets and Infographics*. Available at: <https://joinup.ec.europa.eu/collection/national-interoperability-framework-observatory-nifo/egovernment-factsheets-and-infographics>

¹⁹⁸ OECD (2018). *Digital Government*. Accessed on 7 December 2018. Available at: <http://www.oecd.org/gov/digital-government/>

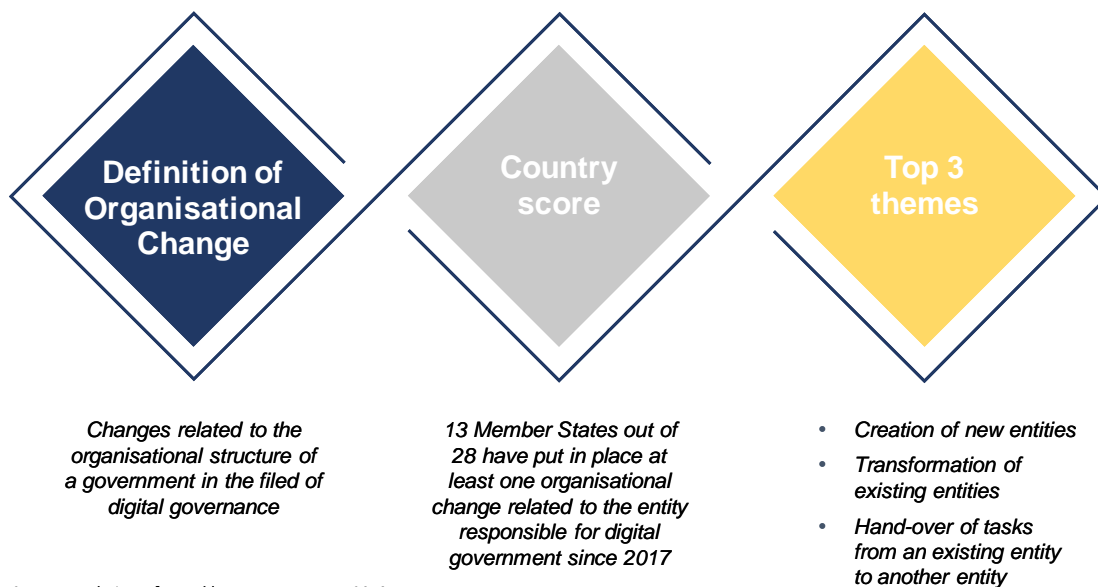
example comes from the German National eGovernment Strategy whose main pillars are: Orientation on usefulness for citizens, businesses and public administration; Cost-effectiveness and efficiency; Data protection, cyber security and transparency; Social participation; Transparency, Innovation and sustainability.

- **Digitalisation of the Public Administration:** Some countries are explicitly focusing their efforts on modernising and digitalising their public sector. This is for instance the case of Italy and its Three-Year Plan for IT in Public Administration. 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.
- **Cybersecurity:** Concerns about the protection of user data and cyber-attacks to governmental portals have greatly increased in recent years. This is leading countries to adopt strategies specifically tackling this issue. For instance, Poland adopted its National Framework of Cybersecurity Policy for 2017-2022 in May 2017.

4.2.2 Organisational Change

Organisational change includes, in the scope of this study, the creation of new entities, the transformation of existing entities and the hand-over of tasks from an existing entity to another entity related to digital governance. Only changes related to the organisational structure of a government were taken into account. This implies that changes in government positions were not considered.

Figure 7. Digital government outlook: Organisational Change



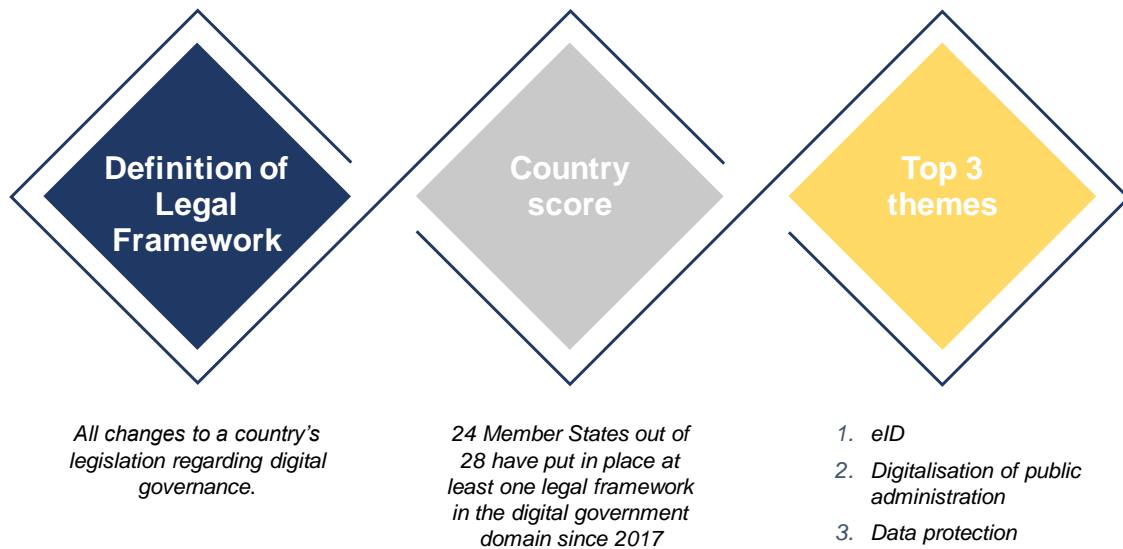
Based on the main digital government highlights collected through the eGovernment Factsheets 2018 and as shown in Figure 7, 13 Member States out of 28 have put in place at least one organisational change related to the entity responsible for digital government. The following examples illustrate the three different types of organisational change that occurred in the Member States. In Lithuania, the Ministry of Defence has taken over the coordination of the Cyber Security Strategy, which implies the hand-over of tasks to an existing entity. An example of a new entity that was created is the ICT Council

in Portugal. The third type of organisational change is the transformation of an existing entity, of which an example occurred in Spain. There, the Directorate for ICT was transformed into the General Secretary for Digital Administration.

4.2.3 Legal Framework

In this study, legal frameworks can be defined as all changes to a country's legislation related to digital government. This includes the adoption of amendments, decrees, acts, law or equivalent. It also relates to the creation of legal frameworks and the transposition of EU regulations into national law.

Figure 8. Digital government outlook: Legal Framework



Source: Analysis performed by Wavestone, Dec 2018.

Based on the main digital government highlights collected through the eGovernment Factsheets 2018 and as shown in Figure 8, 24 Member States out of 28 have put in place at least one legislative reform. Three of the most recurring changes to legislation took place in the following domains:

- **eID:** The legislative changes related to eID can be seen in the context of the eIDAS regulation. The Electronic Identification and Trust Services (eIDAS) Regulation creates a new system for secure electronic interactions across the EU between businesses, citizens and public authorities. It aims to improve trust in EU-wide electronic transactions and to increase the effectiveness of public and private online services and e-commerce. It applies to: electronic identification schemes notified to the European Commission by Member States; trust service providers based in the EU; and it removes existing barriers to the use of eID in the EU. The Czech Republic is one of the countries that introduced a legal change related to eID. It adopted the Act on Electronic Identification. This Act codifies rules for the use of national ID cards with a chip.
- **Digitalisation of public administration:** Digitalisation of public administration entails the legal reforms that adapt the existing administration to the needed standards in order to execute the digital government ambitions. In practice, this can refer to, amongst others, reducing the administrative barriers and cutting red tape or introducing digitalisation-proof

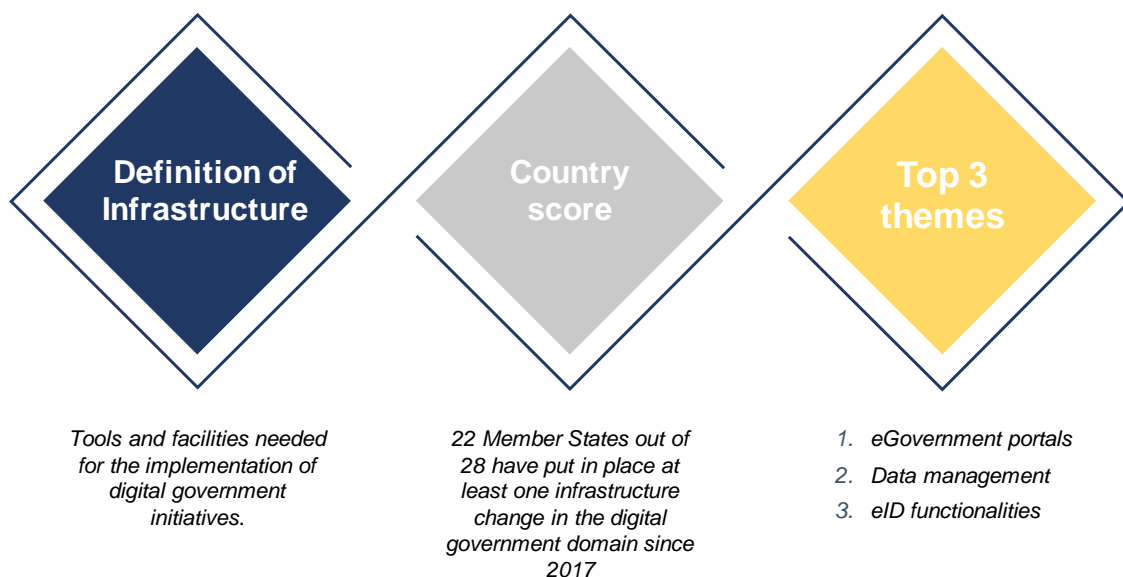
judiciary. An example can be found in the entering into force of the eAdministration Act in Hungary. The Act obliges almost all public administration bodies, as well as other institutions like courts and public prosecutor offices to provide electronic channels and services in compliance with the legal requirements set in the Act's implementing decree.

- **Data protection:** The legislative adaptations to data-related domains can be placed in the context of the general data protection regulation (GDPR). It allows EU citizens to better control their personal data. It also modernises and unifies rules allowing businesses to reduce red tape and to benefit from greater consumer trust. The GDPR is part of the EU data protection reform package, along with the data protection directive for police and criminal justice authorities. In Latvia, A new Personal Data Processing Law entered into force from May 2018, which transposes the GDPR Regulation into national law.

4.2.4 Infrastructure

For this study, infrastructure can be understood as the provision of tools and facilities by the government which are needed for (the execution of elements related to) the implementation of digital government initiatives.

Figure 9. Digital government outlook: Infrastructure



Source: Analysis performed by Wavestone, Dec 2018.

Based on the main digital government highlights collected through the eGovernment Factsheets 2018 as shown in Figure 9, 22 Member States out of 28 have put in place at least one infrastructure change supporting the delivery of public services. Three of the most recurring tools to establish an infrastructure corresponding to digital governance are:

- **eGovernment portals:** Various Member States established portals to ensure their constituents can consult eGovernment services. These portals enable the provision of specific government services once citizens and businesses access the dedicated website. In Ireland, the Office of the Government Chief Information Officer is working on a new Digital Portal to make it easier for citizens to find government services online, supporting better use of data

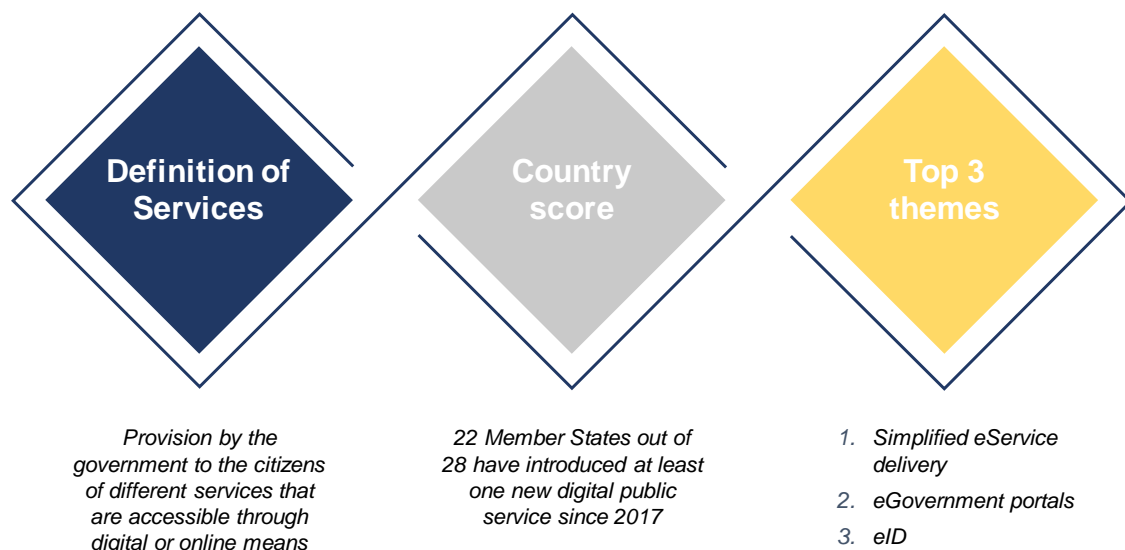
across government in line with best practice in data protection and sharing, and developing a sustainable resourcing model for ICT across the Public Service.

- **Data management:** In the scope of this study, infrastructure tools related to data-management cover actions that include creating open-data systems, setting up base registers, or putting databases into place. In 2017, thanks to the eGovernment Roadmap, Bulgaria initiated various ICT infrastructure projects. Among others, it started building a database of ICT infrastructure and resources, a remote electronic voting system, two key data registers, namely the Citizen Registration and Address Register.
- **eID functionalities:** eID functionalities refers to measures related to the introduction of new forms of authentication, the introduction of a new security framework or the update to an existing one. The Member States put in practice these infrastructures to be compliant with the eIDAS regulation. As an example, in Croatia the infrastructure to accommodate the use of the eID is being prepared, and the HR.eIDAS node has already been implemented to be part of the eCitizens platform.

4.2.5 Services

Digital services refer to the application of business and technical expertise to enable organisations in the creation, management and optimisation of or access to information and business processes¹⁹⁹. In the case of digital public services, the government is usually providing its citizens with different services that are accessible through digital or online means. From the citizens' perspective, therefore, this type of service is delivered through online channels.

Figure 10. Digital government outlook: Services



Source: Analysis performed by Wavestone, Dec 2018.

¹⁹⁹ Definition adapted from: Gartner IT Glossary (2018). *IT Services*. Accessed on 17 December 2018. Available at: <https://www.gartner.com/it-glossary/it-services/>

Based on the main digital government highlights collected through the eGovernment Factsheets 2018 and as shown in Figure 10, 22 Member States out of 28 have introduced at least one new digital public service since 2017. We have recognised three main themes when it comes to the provision of digital public services:

- **Simplified eServices delivery:** The simplification and improvement of eService delivery for both businesses and citizens emerges as one of the main concerns for most of the countries. Within the context of Single Sign-On (SSO), citizens of Cyprus will gain access and interact digitally with the Government through Ariadne by using only one single ID and password. Moreover, in 2017 fifteen additional eServices were added to the Ariadne portal.
- **eGovernment Portals:** In line with the introduction of eGovernment portals for citizens, more and more countries are creating eGovernment portals dedicated to businesses, in an effort to improve the digital interaction between the public administration and the private sector. This is the case of Czech Republic, which created the Czech business web portal. The portal provides businesses with all relevant information, contacts and support, acting as a Single Point of Contact.
- **eID:** Electronic identification is introduced to enable citizens and businesses to make full use of digital public services available to trusted government websites. In this regard, since 2017 Italian citizens have the possibility to use the credentials of their Public System of Digital Identity (*Sistema Pubblico di Identità Digitale, SPID*) to consult registers, check the pension situation and request services of the INPS (National Institute of Social Security) through their own computer without having to physically go to public office

4.3 Country Specific Recommendations - Key findings

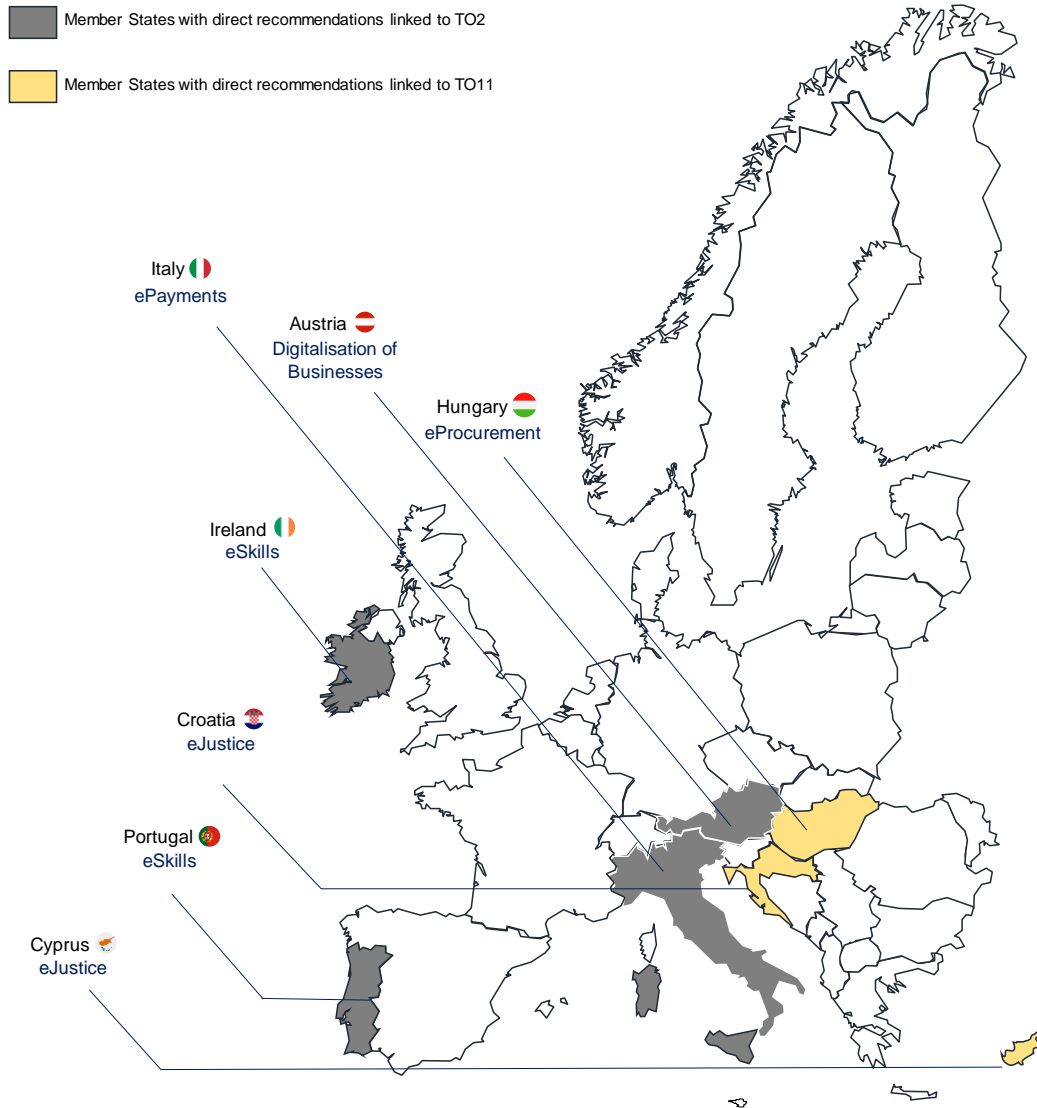
Every year, the European Semester exercise is carried out. It is an annual monitoring process with the goal to ensure economic convergence and stability throughout the European Union. After assessing all EU governments' plans²⁰⁰, the Commission presents each country with CSRs where guidance is provided towards boosting jobs and growth as well as maintaining stable public finances.

This study analyses the CSRs for each country in light of TO2 and TO11. TO2, on the one hand, targets enhancing access to, and use and quality of Information and Communication Technologies (ICT). TO11, on the other hand, aspires to enhance institutional capacity of public authorities and stakeholders and efficient public administration. In chapter 3, the TOs identified in the CSRs are divided into three categories: recommendations, recitals and opportunities: (I) the **recommendations** stem from the European Commission, directly calling on the country at hand to take action in domains related to digital; (II) the **recitals** are suggestions relating to digital solutions that can address a current challenge faced by the country; (III) **opportunities** are issues brought up by the Commission that can be possibly solved or alleviated thanks to a digital solution, identified by the authors of this study.

Figure 11 shows the seven countries that received direct recommendations in the digital government domain from the European Commission in 2018, as well as the themes they are associated to.

²⁰⁰ With the exception of Greece as it is subject to enhanced policy surveillance under an economic adjustment programme.

Figure 11. Member States receiving a country-specific recommendation



Source: In-depth analysis of 2018 CSR documents, performed by Wavestone, Dec 2018.

Notes: Data prepared after carefully surveying the CSRs for countries in the study and identifying key links to TO2 and TO11. No CSR was issued for Greece in 2018.

As can be seen from the figure above, Member States received a quite balanced number of recommendations related to TO2 and TO11. As for TO2, four recommendations dealing with ePayments (Italy), Digitalisation of Businesses (Austria) and eSkills (Portugal and Ireland) were found in the 2018 CSRs. On the other hand, three recommendations dealt with themes under TO11, namely, eProcurement (Hungary) and eJustice (Croatia and Cyprus).

Our analysis depicts all the themes that have been identified in the 2018 CSRs for the 27 Member States. While analysing the CSRs, relevant themes other than *recommendations* were identified in the document's recitals section (classified as *recitals*) since they represent actual challenges present in the Member State that are likely to be solved with the help of ICT tools. More general possibilities for the application of ICT tools identified throughout the whole document were also included as *opportunities* in the digital government domain. The identified themes are further clustered as falling under TO2, TO11 or, given the high interdependency of the two TO, potentially falling under both, based on the specific case. Table 2 below provides an initial overview of all countries and themes identified, followed by explanations and examples, as well as overview of the main thematic trends

related to TO2 and TO11 is presented. When considering TO2 and TO11 together, the top three topics addressed in the 2018 CSRs appear to be eSkills (19 instances), eHealth (14 instances) and eProcurement (6 instances).

Table 2. 2018 CSRs thematic overview

Themes	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	HU	IE	IT	LV	LT	LU	MT	PL	PT	RO	SK	SI	ES	SE	UK	Tot.
eSkills																											19
eHealth																											14
eProcurement																											6
Digital Public Services Delivery																											3
eJustice																											5
Capacity Building																											1
eGov. and Interoperability Framework																											3
eParticipation																											3
eTax																											3
ICT Infrastructure																											3
Digitalisation of Businesses																											2
eGov. Portal for Businesses																											1
eGov. Portal for Citizens																											1
eGov. Portal for Citizens & Businesses																											1
eInclusion																											1
eInvoicing																											1
eMobility																											1
ePayments																											1
Tot.	2	4	4	4	3	3	1	1	2	4	4	3	3	5	2	2	1	2	3	3	4	2	3	2	1	1	1

Legend: Recommendation Recommendation Recital Opportunity TO11 TO2

Source: Analysis performed by Wavestone, Dec 2018.
 Note: The Commission did not issue a CSR to Greece this year.

Thematic Objective 2

- **Digitalisation of businesses:** The private sector's digitalisation enhances the country's economic performance, companies' growth and visibility of SMEs, while ensuring competition. Cooperation between the private and public sector towards digitalisation is also an important aspect in the economy towards supporting innovation and the use of new technologies.²⁰¹ This year, Austria was the only country that received a recommendation from the Commission to spread the use of digital technologies in the business sector. This will benefit the growth of companies, especially SMEs which are very important to Austria's economy.
- **eGovernment portal for businesses:** An eGovernment portal is created to facilitate the use of government services through electronic means in an effort to improve digital interaction between the government and the business. The use of eGovernment portals would eliminate the need of physical presence to government premises and paperwork would be reduced, public administration would be able to render services in a faster and more efficient way.²⁰² Further use of eGovernment portals for businesses is an opportunity identified for Belgium given the high administrative burdens on entrepreneurs, who are often required to be physically present at various agencies. A single portal with all steps and information depicted would lessen the burden and ease businesses' set-up.
- **eGovernment portal for citizens:** eGovernment portals for citizens are a web tool through which public administrations reach out to citizens, providing data, information and services. They sometimes allow citizens to supply their own data. Member States sometimes use one single portal as a one-stop shop for all administrative processes and in other cases Ministries have their own online eServices.²⁰³ Further use of eGovernment portals for citizens has been identified as an opportunity for Cyprus, where a portal would be useful for people to look for jobs, a scheme already in place in various other European countries. This new service would lead to various benefits for the citizens including the ease of searching and reducing unemployment.
- **eGovernment portal for citizens and businesses:** It is a way for the government to enhance communication in a three-way approach, i.e. between the public administration, the private sector and citizens. Online portals are therefore addressed for both citizens and businesses at the same time. In Spain, an opportunity was identified towards the creation of this double-oriented portals. In the Spanish case, citizens would benefit from having a one-stop shop of available jobs, that were uploaded by various employers who need new labour force. This portal would represent a cooperation tool for both jobseekers and employers to express and meet their needs.

²⁰¹ European Commission (n.d.). *Digitising European Industry*. Accessed on 13 September 2018. Available at:

<https://ec.europa.eu/digital-single-market/en/policies/digitising-european-industry>

²⁰² Research Gate (2014). *E-Government Portals Best Practices: A Comprehensive Survey*. Accessed on 13 September 2018. Available at: https://www.researchgate.net/publication/263809178_E-Government_Portals_Best_Practices_A_Comprehensive_Survey

²⁰³ Definition adapted from: E-Estonia (n.d.). *State e-services portal*. Accessed on 13 September 2018. Available at: <https://e-estonia.com/solutions/e-governance/state-e-services-portal/>

- **eMobility:** The digitalisation of public transport can be seen in various forms. These range from automated driving and electric vehicles to ICT infrastructure within the car and smart solutions on the road. Public services also use intelligent traffic management to enhance the quality of the transport sector.²⁰⁴ Brussels being one of the main working hubs of the European Union and of Belgium itself, it suffers from various problems related to traffic congestion. In this regard, the increased use of ICT tools was identified as an opportunity to alleviate the situation by creating platforms of ride-sharing for example.
- **eParticipation:** eParticipation is the term used to describe all forms of political participation involving digital media, stemming both from the governmental level and the citizens themselves. There are three levels: eInformation where information is made available online; eConsultation for government to take into consideration citizens' views; and eDecision-making, directly involving citizens.²⁰⁵ In Romania, public consultation in the design and implementation of policies is rare, therefore impeding the quality of legislation. Electronic tools could incentivise the citizens to participate more in taking part in the policy making processes.
- **ePayments:** ePayment is the possibility to make payments for goods and services online. It is available on all types of devices, i.e. computers, smartphones and tablets. It is a widely-used means in the private sector by banks and is currently being developed in the public sector as well.²⁰⁶ The use of ePayment was recommended to Italy by the Commission in order to tackle the shadow economy. In the case of Italy, the mandatory use of ePayments should be complemented by lower legal thresholds for cash payments.

Thematic Objective 11

- **Capacity Building through ICT:** Capacity building through ICT is the long-term process of facilitating knowledge acquisition and deliver appropriate tools to individuals about a particular sector. The aim is for civil servants to acquire appropriate skills to successfully perform their required functions.²⁰⁷ In France for example, an opportunity was identified to enhance the efficiency of the public sector by collaborating with stakeholders from the private sector and academia. Innovation can be better reached through transfer of knowledge and skills.
- **eGovernment and Interoperability Framework:** An eGovernment and Interoperability Framework refers to commonly agreed approaches with a two-fold goal: to establish the use of ICT tools in public administration on the one hand and provide the delivery of public services in an interoperable manner on the other. This should ensure interaction between citizens and businesses and public administrations or between public administrations internally, taking place through effective digital services.²⁰⁸ There is a lack of centralised competency in the

²⁰⁴ Definition adapted from: Gartner IT Glossary (2018). *Electro Mobility (E-Mobility)*. Accessed on 12 September 2018. Available at: <https://www.gartner.com/it-glossary/electro-mobility-e-mobility>

²⁰⁵ UN E-Government Knowledgebase (2018). *E-Participation Index*. Accessed on 13 September 2018. Available at: <https://publicadministration.un.org/egovkb/en-us/about/overview/e-participation>

²⁰⁶ Definition adapted from: Collins Dictionary (n.d.). *e-Payments Definition*. Accessed on 13 September 2018. Available at: <https://www.collinsdictionary.com/dictionary/english/e-payment>

²⁰⁷ International Telecommunication Union (ITU) (2003). *Presentation World Summit on the Information Society PrepCom II – Geneva Roundtable 5 – Feb 19, 2003*. Accessed on 13 September 2018. Available at: <http://www.itu.int/net/wsis/docs/pc2/roundtables/rt5/zeitoun.pdf>

²⁰⁸ COM(2017) 134 final, Annex to the Communication from the Commission of the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the European Interoperability Framework – Implementation Strategy, Brussels, 23.3.2017.

Croatian public administration for instance. The distribution of responsibilities hinders service provision, burdening not only the citizens but also the administrations themselves. Putting an eGovernment and interoperability framework in place is identified as an opportunity to better delivery of interoperable public services.

- **eInvoicing:** Electronic invoicing is the exchange of an electronic invoice document between a supplier and a buyer. An electronic invoice is an invoice that has been issued, transmitted and received in a structured data format which allows for its automatic and electronic processing.²⁰⁹ In the Italian private sector, eInvoicing has been made mandatory for all transactions, starting from 2019. The use of eInvoicing is mentioned in the CSR's recital 12 as a way to increase the overall level of tax compliance.
- **eJustice:** The eJustice approach uses ICT to improve citizens' access to justice and to make legal action more effective. It also contributes to making the judicial system more accessible and transparent.²¹⁰ As a direct recommendation from the Commission, the Croatian court system should resort to electronic communication. Thanks to that, not only would the efficiency of the court system be enhanced but the duration of court proceedings would also be reduced.
- **eTax:** Taxation becomes easier, faster and more efficient through digitalisation. eTax measures enhance the quality of public administration services, making the tax collection process more uniform.²¹¹ In Bulgaria for example, there is an opportunity to improve tax efficiency. Through digitalisation, tax compliance, innovation, as well as the economy will improve altogether.
- **eProcurement:** eProcurement entails more than merely the use of electronic tools. It rethinks the pre-award and post-award phases to simplify participation and improve the management for the public sector. The integration of data-based approaches is facilitated at various stages of the procurement process. The aim is to address the lack of transparent public procurement processes and improve the competitiveness and transparency of many Member States.²¹² The state owns an eProcurement system in the Czech Republic. There is nevertheless, more need to cooperate to set up joint procurement measures. Therefore, the opportunity identified is the upgrade of the eProcurement system.

Thematic Objectives 2 and 11

- **Digital Public Services Delivery:** Public services are becoming more digital. Citizens and businesses can take care of not only purely administrative processes online, but also services in the health and education sectors for example. Digitalisation, automation and simplification

²⁰⁹ European Commission (n.d.). *What is eInvoicing*. Accessed on 12 September 2018. Available at: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/What+is+eInvoicing>

²¹⁰ COM(2008)329 final, Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee on Towards a European e-Justice Strategy, Brussels, 30.5.2008.

²¹¹ Definition adapted from: Collins Dictionary (n.d.). *Definition e-Taxes*. Accessed on 12 September 2018. Available at: <https://www.collinsdictionary.com/submission/15504/E-Taxes>

²¹² European Commission (n.d.). *E-procurement*. Accessed on 13 September 2018. Available at: <http://ec.europa.eu/growth/single-market/public-procurement/e-procurement/>

are important end-goals for governments.²¹³ The Italian local public services are aiming to increase their efficiency. ICT tools are thus identified as an opportunity towards achieving the goal. Furthermore, one-stop shops and various other services on one website will also increase their efficiency.

- **eHealth:** eHealth refers to tools and services that use ICTs to improve all aspects of health and lifestyle such as diagnosis, treatment and monitoring. eHealth solutions also contribute to access to healthcare from distant regions, enhance the cooperation among the health sector, and improve the quality of healthcare services.²¹⁴ A reform of the healthcare system is currently undergoing in Finland. In addition to using digital and electronic services to increase productivity, objectives also include cooperation in the private and public spheres, provision of equal access to healthcare and increasing competition.
- **eSkills:** eSkills relate to the knowledge of applying and developing ICT and infrastructure. Users, i.e. citizens, need to possess the capabilities to use various technologies. For this reason, digital education starts from an early age in several countries. Practitioners, in both the front and back offices of public administrations also need to have profound digital literacy. Quality and new technologies will only enhance if people constantly learn and evolve.²¹⁵ Portugal's population is not digitally literate, a problem that the Commission recommends resolving. Adults should receive training and take part in qualification programmes in order to further allow the country to grow.
- **ICT Infrastructure:** ICT infrastructure embodies the system of hardware, software, facilities and service components that support the delivery of business systems and IT-enabled processes. The appropriate ICT infrastructure is a necessity to support the introduction or expansion of eGovernment and interoperability services.²¹⁶ The most recurrent infrastructure that is needed in countries is broadband and fibre connectivity. In Germany for example, there is a high divergence of Internet speed in urban and rural areas. The CSR's recital 9 determined that in order to tackle this, cables should be replaced from copper to fibre-based.

Overall, references to themes under TO2 emerged as more frequent (50 instances) than those related to TO11 (20 instances). As shown in Figure 12 below, the top three themes identified under TO2 are eSkills (19 instances), eHealth (13 instances) and ICT infrastructure, eParticipation and Digital public service delivery (3 instances), whereas the top three themes under TO11 are eProcurement (6 instances), eJustice (5 instances) and eTax and eGovernment and Interoperability Framework (3 instances).

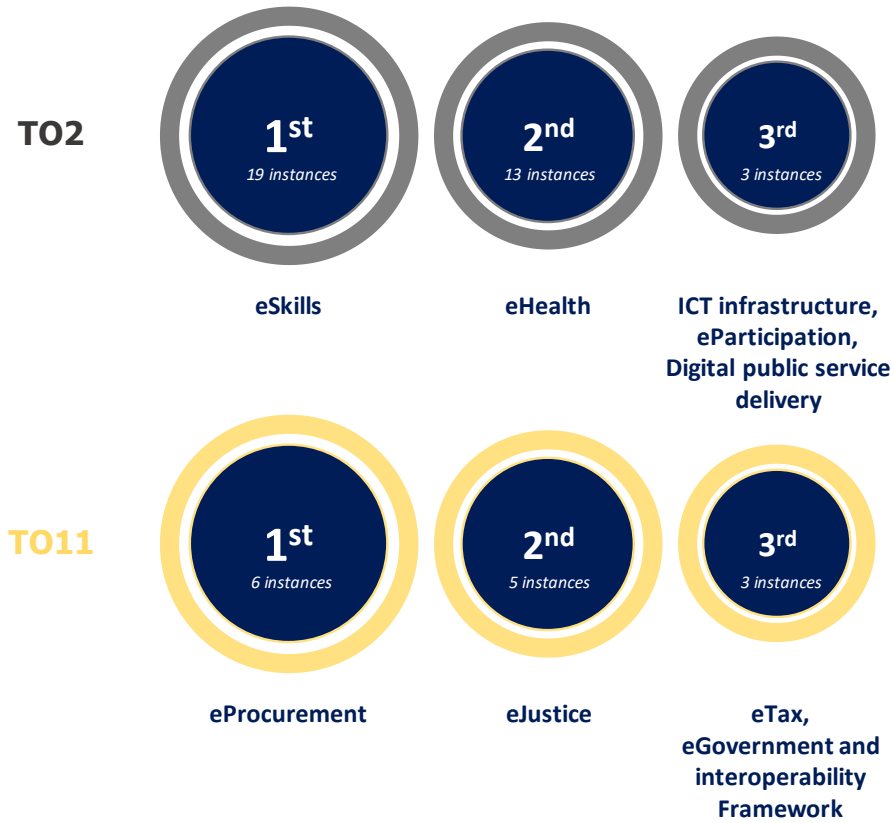
²¹³ Definition adapted from: European Commission (2017). *eGovernment Benchmark 2017*. Accessed on 13 September 2018. Available at: <https://www.capgemini.com/consulting/wp-content/uploads/sites/30/2017/11/2017-egovernment-benchmark-insight1.pdf>

²¹⁴ European Commission (n.d.). *eHealth: Digital health and care*. Accessed on 13 September 2018. Available at: https://ec.europa.eu/health/ehealth/overview_en

²¹⁵ Eurostat (2016). *Glossary: E-skills*. Accessed on 13 September 2018. Available at: <https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:E-skills>

²¹⁶ Gartner IT Glossary (2018). *IT infrastructure*. Accessed on 12 September 2018. Available at: <https://www.gartner.com/it-glossary/it-infrastructure/>

Figure 12. Top three themes identified in the CSRs under TO2 and TO11



Source: Analysis performed by Wavestone, Dec 2018.

From a country perspective, we identified an average of 2.5 references per country to issues falling under TO2 and TO11 in the 2018 CSRs, with one country scoring five references (Italy), six countries scoring four references (Belgium, Bulgaria, Croatia, France, Germany and Romania) and eight countries scoring three references (Cyprus, Czech Republic, Hungary, Ireland, Poland, Portugal, Slovakia and Slovenia). It also worth to note that the Netherlands did not receive any recommendation from the European Commission, and no reference to opportunities related to the digital government domain has been found in its CSR document. Finally, no CSR document was issued for Greece in 2018.

4.4 National Reform Programmes – Key findings

NRPs are documents presented by all Member States' governments to the European Commission on a yearly basis. These documents contain existing and future policies that will be put in place in a wide range of socio-economic areas to boost jobs and growth and prevent or correct imbalances. In light of the European Semester process, they constitute concrete plans to comply with the EU's country-specific recommendations and general fiscal rules.

The content analysis of the NRPs of the Member States helped to establish how different reforms, carried out in the countries, tackle issues related to the use of ICT within the public administration to enhance digital government.

Our analysis depicts all the themes that have been identified in the 2018 National Reform Programmes for the 28 Member States. The identified themes are clustered as falling under TO2, TO11 or, given the high interdependency of the two TO, potentially falling under both, based on the specific case. Table 3 below presents an overview of the identified themes, linked to TO2 and TO11 in the different Member States' NRPs. When considering TO2 and TO11 together, the top three topics addressed in the 2018 NRPs appear to be ICT infrastructure (21 instances), eSkills (19 instances) and Digitalisation of businesses (16 instances).

Table 3. 2018 NRPs thematic overview

Themes	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	HU	IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK	Tot
ICT Infrastructure	✓ ⁴	✓		✓	✓	✓		✓	✓	✓	✓ ²			✓ ²	✓						✓	✓	✓	✓	✓ ²	✓	✓	21
eSkills	✓	✓		✓	✓	✓		✓	✓	✓	✓ ²		✓	✓ ²	✓	✓					✓	✓	✓	✓	✓	✓	✓	19
Digitalisation of Businesses	✓	✓	✓	✓	✓	✓		✓	✓	✓ ²	✓		✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	16
Digital Public Services Delivery		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	15
eHealth			✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	12
New Technologies		✓ ²	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓												9
eProcurement			✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓							✓	✓	✓	✓	✓	8
eGov. and interoperability Framework			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	7
Base Register				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	7
eGov. Portal for Businesses	✓			✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	7
eCulture				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	6
eGov. Portal for Citizens	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	4
eMobility					✓	✓		✓	✓	✓	✓		✓	✓	✓	✓											✓	4
eTax			✓		✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												3
Open Data		✓		✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												3
eJustice				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												2
eGov. Portal for Citizens and Businesses				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	2
eID				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												2
Raising awareness				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												2
Cybersecurity		✓		✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												2
Capacity Building through ICT				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												1
eInvoicing				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												1
eParticipation				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓												1
Tot.	3	13	6	12	9	10	1	7	8	6	11	3	2	14	7	2	2	4	/	3	4	8	4	2	6	3	4	1

TO11 TO2

Source: Analysis performed by Wavestone, Dec.2018.
 Note: The number present in the table's cells represents the number of appearances of themes under TO2 when on the left and under TO11 when on the right. For 2018, Greece did not submit a NRP.

Thematic Objective 2

- **Digitalisation of Businesses:** The private sector's digitalisation enhances the country's economic performance, companies' growth and visibility of SMEs, while ensuring competition. Cooperation between the private and public sector towards digitalisation is also an important aspect in the economy towards supporting innovation and the use of new technologies.²¹⁷ An example of digitalisation can be found in Luxemburg where the government launched an e-commerce platform that aims to function as a digital showcase for all businesses and to enable traders to strengthen their visibility and/or enhance their image.
- **eCulture:** New technology-based access to culture is expected to change both its production and dissemination. Culture is preserved and promoted through digital means, by increasing people's access to culture, offering them new ways to participate in cultural experiences and learn.²¹⁸ For instance, the Swedish National Heritage Board has launched a project for the creation of an incubator for the preservation of cultural heritage that aims to stimulate the preservation of archives, libraries and museums through the creation of new digital services.
- **eGovernment Portal for Businesses:** An eGovernment portal is created to facilitate the use of government services through electronic means in an effort to improve digital interaction between the government and the business. The use of eGovernment portals would eliminate the need of physical presence to government premises and paperwork will be reduced, public administration would be able to render services in a faster and more efficient way.²¹⁹ As an example, to attract more investment in the country, Estonia aims to make more services available in English online, using the eesti.ee portal as a single contact point where all information is available in one place.
- **eGovernment Portal for Citizens:** eGovernment portals for citizens are a web tool through which public administrations reach out to citizens, providing data, information and services. They sometimes allow citizens to supply their own data. Member States sometimes use one single portal as a one-stop shop for all administrative processes and in other cases Ministries have their own online eServices.²²⁰ For example, in the Czech Republic a new Citizen's Portal will be created. The Portal will enable citizens to complete electronic submissions, provide output from public administration information systems and give information on the status of individual actions made by citizens.
- **eGovernment Portal for Citizens and Businesses:** More and more countries are now setting up eGovernment portals for both citizens and businesses. Portugal is one of the Member States that created an eGovernment Portal for both citizens and business. The

²¹⁷ European Commission (n.d.). *Digitising European Industry*. Accessed on 13 September 2018. Available at: <https://ec.europa.eu/digital-single-market/en/policies/digitising-european-industry>

²¹⁸ Definition adapted from: Dictionnaire Sens Agent le Parisien (n.d.). *eCulture*. Accessed on 13 September 2018. Available at: <http://dictionnaire.sensagent.leparisien.fr/Eculture/fr-fr/>

²¹⁹ Research Gate (2014). *E-Government Portals Best Practices: A Comprehensive Survey*. Accessed on 13 September 2018. Available at: https://www.researchgate.net/publication/263809178_E-Government_Portals_Best_Practices_A_Comprehensive_Survey

²²⁰ Definition adapted from: E-Estonia (n.d.). *State e-services portal*. Accessed on 13 September 2018. Available at: <https://e-estonia.com/solutions/e-governance/state-e-services-portal/>

Simplex+ Programme has been created with new modernisation measures for the simplification of interaction between citizens or business and the public administration.

- **eID:** In the EU, eID services help both public and private service providers to extend the use of their online services to the citizens from other European countries.²²¹ This ensures citizens to use their national eID to access, in a secure way, the services of other Member States.²²² In the Czech Republic, the information system of the National Point for Identification has been created. This is a test environment for the Electronic Identification Act and will also be used for the electronic prescription project. Furthermore, new electronic identity cards will be created that will be fitted with an electronic contact chip.
- **eMobility:** The digitalisation of public transport can be seen in various forms. These range from automated driving and electric vehicles to ICT infrastructure within the car and smart solutions on the road. Public services also use intelligent traffic management to enhance the quality of the transport sector.²²³ As an example, in the UK the government is planning to increase its spending in transport infrastructure. This includes the financing, through the National Productivity Investment Fund, of next-generation digital infrastructure and intra-city transport.
- **eParticipation:** eParticipation is the term used to describe all forms of political participation involving digital media, stemming both from the governmental level and the citizens themselves. There are three levels: eInformation where information is made available online; eConsultation for government to take into consideration citizens' views; and Decision-making, directly involving citizens.²²⁴ An example can be found in Hungary. In order to ensure public consultations on EU projects and tenders, the managing authority makes the call for proposals for public consultation available online. Besides calls for proposals, there is also the possibility to execute public consultations regarding legislation

Thematic Objective 11

- **Capacity building through ICT:** Capacity building through ICT is the long-term process of facilitating knowledge acquisition and deliver appropriate tools to individuals about a particular sector. The aim is for civil servants to acquire appropriate skills to successfully perform their required functions.²²⁵ An example can be found in Finland. There, Ministry of Economic Affairs and Employment, will launch a development programme between 2017 and 2021, in order to carry out data management, computing and competence development.

²²¹ European Commission (n.d.). *CEF Digital Home*. Accessed on 18 December 2018. Available at <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eID>

²²² European Commission (n.d.). *What is eID?* Accessed on 12 September 2018. Available at: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/What+is+eID>

²²³ Definition adapted from: Gartner IT Glossary (2018). *Electro Mobility (E-Mobility)*. Accessed on 12 September 2018. Available at: <https://www.gartner.com/it-glossary/electro-mobility-e-mobility>

²²⁴ UN E-Government Knowledgebase (2018). *E-Participation Index*. Accessed on 13 September 2018. Available at: <https://publicadministration.un.org/egovkb/en-us/about/overview/e-participation>

²²⁵ International Telecommunication Union (ITU) (2003). *Presentation World Summit on the Information Society PrepCom II – Geneva Roundtable 5 – Feb 19, 2003*. Accessed on 13 September 2018. Available at: <http://www.itu.int/net/wsis/docs/pc2/roundtables/rt5/zeitoun.pdf>

- **eInvoicing:** Electronic invoicing is the exchange of an electronic invoice document between a supplier and a buyer. An electronic invoice is an invoice that has been issued, transmitted and received in a structured data format which allows for its automatic and electronic processing.²²⁶ An example of efforts regarding eInvoicing can be found in Italy. To fight tax evasion and consequently avoid losing any revenue that shall go to the state, the use of eInvoicing measures will be extended. As of the first of January 2019, it will become mandatory also for both business to business and business to customer transactions.
- **eGovernment and Interoperability Framework:** An eGovernment and Interoperability Framework refers to commonly agreed approaches with a two-fold goal: to establish the use of ICT tools in public administration on the one hand and provide the delivery of public services in an interoperable manner on the other. This should ensure interaction between citizens and businesses and public administrations or between public administrations internally, taking place through effective digital services.²²⁷ Romania for instance established the National Interoperability Framework to guarantee full interoperability between future public sector systems in line with the guidelines of the European Interoperability Framework and reduce the number of redundant data sources in public administration.
- **eJustice:** The eJustice approach uses ICT to improve citizens' access to justice and to make legal action more effective. It also contributes to making the judicial system more accessible and transparent.²²⁸ For example, in Cyprus, the low level of ICT use in courts hinders the efficiency of the justice system. With the intention to digitalise the courts, a tender process has been started to purchase an electronic Court administration system to digitalise operations of the Courts.
- **eProcurement:** eProcurement entails more than merely the use of electronic tools. It rethinks the pre-award and post-award phases to simplify participation and improve the management for the public sector. The integration of data-based approaches is facilitated at various stages of the procurement process. The aim is to address the lack of transparent public procurement processes and improve the competitiveness and transparency of many Member States.²²⁹ For instance, in Slovenia the technological renewal of the information system for the implementation of electronic public procurement began in 2017.

Thematic Objective 2 and 11

- **Base registries:** a base register ensures the interoperability of public and municipal administrations' systems. It provides public servants with protected information on citizens,

²²⁶ European Commission (n.d.). *What is eInvoicing*. Accessed on 12 September 2018. Available at: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/What+is+eInvoicing>

²²⁷ COM(2017) 134 final, Annex to the Communication from the Commission of the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the European Interoperability Framework – Implementation Strategy, Brussels, 23.3.2017.

²²⁸ COM(2008)329 final, Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee on Towards a European e-Justice Strategy, Brussels, 30.5.2008.

²²⁹ European Commission (n.d.). *E-procurement*. Accessed on 13 September 2018. Available at: <http://ec.europa.eu/growth/single-market/public-procurement/e-procurement/>

whose data is stored on the register. Access to the register is secured and only administrations with allowed access can control and upload information onto this cloud-like infrastructure.²³⁰ In Croatia, to ensure high-quality and transparent decision-making, base and public registries will be connected electronically, with an online access to the platform.

- **Cybersecurity:** As the risks on cyber-attacks have grown in recent years, concerns about the protection of user data have risen. This has led countries to enhance their cybersecurity systems. Cybersecurity entails all the measures that are taken to protect electronic data and counter the threat of criminal attacks and unauthorised use of data.²³¹ For instance, the Belgian government will enhance its cybersecurity policy to establish coordination across the regions. The aim is to offer Belgian people the necessary level of security online now new applications gain popularity.
- **Digital Public Services Delivery:** Public services are becoming more digital. Citizens and businesses can take care of not only purely administrative processes online, but also services in the health and education sectors for example. Digitalisation, automation and simplification are important end-goals for governments.²³² As an example, there are the efforts made by Finland. Finland's employment services are currently undergoing reform. The administration introduced updated electronic services in 2017, where job-seekers can start a request, their needs are assessed online, as well as the preparation of their employment plan.
- **eHealth:** eHealth refers to tools and services that use ICTs to improve all aspects of health and lifestyle such as diagnosis, treatment and monitoring. eHealth solutions also contribute to access healthcare from distant regions, enhance the cooperation within the health sector, and improve the quality of healthcare services.²³³ For example, Bulgaria aims to improve the quality of healthcare services through the National Health Information System. This will provide patients with information about their own health.
- **eSkills:** eSkills relate to the knowledge of applying and developing ICT and infrastructure. Users, i.e. citizens, need to possess the capabilities to use various technologies. For this reason, digital education starts from an early age in several countries. Practitioners, in both the front and back offices of public administrations also need to have profound digital literacy. Quality and new technologies will only enhance if people constantly learn and evolve.²³⁴ As an example, Austria has launched the School 4.0 — Let's get digital education strategy. It aims to convey digital skills to students during the entire duration of the school career.
- **eTax:** Taxation becomes easier, faster and more efficient through digitalisation. eTax measures enhance the quality of public administration services, making the tax collection

²³⁰ Joinup (2014). *Base Registries, Universal Database of Information*. Accessed on 13 September 2018. Available at: <https://joinup.ec.europa.eu/document/base-registries-universal-database-information>

²³¹ Oxford Dictionaries. (2018). *Cybersecurity*. Accessed on 12 September 2018. Available at: <https://en.oxforddictionaries.com/definition/cybersecurity>

²³² Definition adapted from: European Commission (2017). *eGovernment Benchmark 2017*. Accessed on 13 September 2018. Available at: <https://www.capgemini.com/consulting/wp-content/uploads/sites/30/2017/11/2017-egovernment-benchmark-insight1.pdf>

²³³ European Commission (n.d.). *eHealth: Digital health and care*. Accessed on 13 September 2018. Available at: https://ec.europa.eu/health/ehealth/overview_en

²³⁴ Eurostat (2016). *Glossary: E-skills*. Accessed on 13 September 2018. Available at: <https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:E-skills>

process more uniform.²³⁵ For example, in Germany the administrative burden on the taxation procedure will become smoother if the government implements digital processes. ICTs are an opportunity towards efficiency as well as uniformity in the system.

- **ICT infrastructure:** ICT infrastructure embodies the system of hardware, software, facilities and service components that support the delivery of business systems and IT-enabled processes. The appropriate ICT infrastructure is a necessity to support the introduction or expansion of eGovernment and interoperability services.²³⁶ France is one of the Member States that has set out efforts to enhance the ICT infrastructure. France has been working towards achieving its goal of very high-speed Internet by 2022.
- **New technologies:** New technologies cover the emerging technologies that influence public administration. They fall under the broad heading of IT (Information Technology). The term IT includes any technology, software, or hardware, used to transmit, store, and manipulate information in the form of data. Having a more efficient IT infrastructure equipped with new technologies allows public administration systems to get more work done faster and more securely, even when employees are on the go.²³⁷ In Denmark for example, new technologies such as eCommerce and the platform economy aim to support higher productivity, better service and more selection of goods at lower prices for the citizens.
- **Open Data:** Open data is data that anyone can access, use and share. Governments, businesses and individuals can use open data to bring about social, economic and environmental benefits. As Open Data embodies one of the dimensions of the DESI index, Member States are enhancing their efforts on Open Data activities.²³⁸ For instance, the Croatian government intends to release open data through an action plan that is still to be defined. There will be several bodies responsible for coordination.
- **Raising awareness:** Awareness-raising campaigns are used by Member States to enhance the digital knowledge of their citizens and to promote social inclusion through digital means. These campaigns can take the form of creating new participatory frameworks for citizens or launching new websites.²³⁹ In Italy, dedicated web pages are used to make planned and implemented simplification initiatives known. In this regard, a knowledge-sharing platform aimed to reach public servants, business associations, as well as citizens and professionals was launched.

From the analysis of the countries' NRPs it emerged that references to themes under TO2 are significantly more frequent (114 instances) than those related to TO11 (41 instances). As shown in Figure 13, the top three themes identified under TO2 are eSkills (19 instances), ICT infrastructure (18 instances) and Digitalisation of businesses (16 instances), whereas the top three themes under TO11

²³⁵ Definition adapted from: Collins Dictionary (n.d.). *e-Taxes*. Accessed on 13 September 2018. Available at: <https://www.collinsdictionary.com/submission/15504/E-Taxes>

²³⁶ Gartner IT Glossary (2018). *IT infrastructure*. Accessed on 12 September 2018. Available at: <https://www.gartner.com/it-glossary/it-infrastructure/>

²³⁷ University of San Francisco (n.d.). *The Impact of Emerging Technology on Management and Public Administration*. Accessed on 12 September 2018. Available at: <https://onlinempadegree.usfca.edu/news-resources/news/the-impact-of-emerging-technology-on-management-and-public-administration/>

²³⁸ European Data Portal (n.d.). *What is open data?* Accessed on 13 September 2018. Available at: <https://www.europeandataportal.eu/elearning/en/module1/#/id/co-01>

²³⁹ Definition adapted from: Richard Heeks (2001). *Building e-Governance for Development: A Framework for National and Donor Action*. Accessed on 14 September 2018. Available at: <http://unpan1.un.org/intradoc/groups/public/documents/NISPAcee/UNPAN015485.pdf>

are eProcurement (8 instances), eGovernment and Interoperability framework (7 instances) and Base registries (5 instances).

Figure 13. Top three themes identified in the NRPs under TO2 and TO11



Source: Analysis performed by Wavestone, Dec 2018.

From a country perspective, we identified an average of 5.7 references per country to issues falling under TO2 and TO11 in the 2018 NRPs, with one country scoring 14 references (Italy), one country scoring 13 references (Belgium) and one country scoring 12 instances (Croatia). It also worth to note that the no reference to reforms related to the digital government domain has been found in the NRP of the Netherlands. Finally, no NRP was submitted by Greece in 2018

4.5 Operational Programmes – Key findings

The OPs are detailed plans in which the Member States set out how money from the ESIF will be spent during the programming period 2014-2020. While many OPs are implemented on a regional level, the scope of this study focuses on the national OPs addressing themes related to TO2 and TO11. The overview of the OPs is organised in the same way as the NRPs, thus looking at funding priorities in the scope of TO2 and TO11.

The main purpose of the content analysis of the OPs is to offer an overview of the Member States' funding priorities in the field of digital government falling under ESIF TO2 and TO11.

Our analysis depicts all the themes that have been identified in the selected 2014-2020 Operational Programmes for the 28 Member States. The identified themes are clustered as falling under TO2, TO11 or, given the high interdependency of the two TOs, potentially falling under both, based on the specific case. Table 4 below provides an overview of all countries and themes identified, followed by explanations and examples, as well as an overview of the main thematic trends related to TO2 and TO11 is presented. When considering TO2 and TO11 together, the top three topics addressed in the 2014-2020 OPs analysed appear to be ICT infrastructure (26 instances), eSkills (21 instances) and Digital public services delivery (20 instances).

Table 4. 2018 OPs thematic overview

Themes	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	GR	HU	IE	IT	LV	LT	LU	MT	NL	PL	PT	RO	SK	SI	ES	SE	UK	Tot.
ICT Infrastructure	✓		✓	✓	✓	2		✓				✓			2	2	✓		2		2	✓	✓	✓	✓	✓			26
eSkills			✓	✓	✓	✓			✓			✓			✓	✓	✓		2		3		✓	✓	✓	✓			21
Digital Public Services delivery			✓	2	2	2		✓	✓			✓			2	2	✓		2			✓	✓	✓	✓	✓			20
Digitalisation of Businesses			✓	✓	✓	✓		✓				✓				✓			2			✓	✓	✓	✓	✓			10
e-Health			✓	✓	✓	✓						✓				✓			✓			✓	✓	✓	✓	✓			9
eJustice			✓	✓	✓	✓									✓	✓			✓				✓	✓	✓	✓			9
eGov. and Interoperability Framework			✓	✓	✓	✓			✓						✓	✓			✓			2	✓	✓	✓	✓			8
eProcurement			✓										✓			✓			✓			✓	✓	✓	✓	✓			8
Open Data				✓		✓								✓		✓							✓	✓	✓	✓			7
Cybersecurity														✓		✓						✓	✓	✓	✓	✓			7
eInclusion																✓						✓	✓	✓	✓	✓			7
Capacity Building through ICT			✓										✓			✓						✓	✓	✓	✓	✓			5
eCulture				✓												✓							✓	✓	✓	✓			3
Raising Awareness																✓							✓	✓	✓	✓			3
New Technologies																									✓	✓			2
eParticipation								✓				✓												✓	✓	✓			2
eInvoicing																✓							✓	✓	✓	✓			2
eMobility																✓									✓	✓			1
eTax																										✓	✓		1
Base Register																						✓					✓		1
eGov. Portal for Citizens																						✓					✓		1
eGov.Portal for Citizens and Businesses	4	/	9	14	5	10	/	3	3	/	/	7	4	/	8	13	8	/	12	/	10	7	10	7	8	/	/	1	

TO11 TO2

Source: Analysis performed by Wavestone, Dec 2018.
 Note: The number present in the table's cells represents the number of appearances of themes under TO2 when on the left and under TO11 when on the right. Only countries with OPs relating to TO2 and TO11 fall in the scope of the analysis

Thematic Objective 2

- **Digitalisation of businesses:** The private sector's digitalisation enhances the country's economic performance, companies' growth, the visibility of SMEs and ensures competition. Cooperation between the private and public sector towards digitalisation are also an important aspect in the economy towards supporting innovation and the use of new technologies.²⁴⁰ As example there are the Bulgarian micro enterprises, start-ups and SMEs which receive financing towards developing new and innovative ideas related to ICT, eCommerce and eServices.
- **eCulture:** New technology-based access to culture is expected to change both its production and dissemination. Culture is preserved and promoted through digital means and also increases people's access to culture, offering them new ways to participate in cultural experiences and learn.²⁴¹ Croatia, for example, will use ICT opportunities to promote cultural presence online such as the digitalisation of cultural resources and publication of digital collections.
- **eGovernment portal for citizens:** eGovernment portals for citizens are a web tool through which public administrations reach out to citizens, providing data, information and services. They sometimes allow citizens to supply their own data. Member States sometimes use one single portal as a one-stop shop for all administrative processes and in other cases Ministries have their own online eServices.²⁴² An example is the Portuguese government which is installing Citizen's Spaces where various public services as well as digital assistance are available.
- **eGovernment portal for citizens and businesses:** Online portals can be addressed for both citizens and businesses at the same time. It is a way for the government to enhance communication in a three-way approach, i.e. the public administration, private sector and citizens. Croatia, for instance, is establishing an eCitizen platform, an eBusiness platform as well as a one-stop shop to enhance communication with different stakeholders.
- **eInclusion:** eInclusion policies aim at reducing gaps in ICT usage. Governments can organise teaching sessions for example, to promote the use of ICT and allow all citizens to participate in the many aspects of information society. This will also benefit people's employment opportunities, cohesion, quality of life and the country's digital economy performance.²⁴³ The Maltese government, for example, aims to eliminate all barriers to training and education, as well as provide further support measures to vulnerable groups and socially excluded persons.

²⁴⁰ European Commission (n.d.). *Digitising European Industry*. Accessed on 13 September 2018. Available at: <https://ec.europa.eu/digital-single-market/en/policies/digitising-european-industry>

²⁴¹ Definition adapted from: Dictionnaire Sens Agent Le Parisien (n.d.). *eCulture*. Accessed on 13 September 2018. Available at: <http://dictionnaire.sensagent.leparisien.fr/Eculture/fr-fr/>

²⁴² Definition adapted from: E-Estonia (n.d.). *State e-services portal*. Accessed on 13 September 2018. Available at: <https://e-estonia.com/solutions/e-governance/state-e-services-portal/>

²⁴³ European Commission (2006). *Riga Ministerial Declaration on ICT for an Inclusive Society*. Accessed on 13 September 2018. Available at : http://ec.europa.eu/information_society/activities/ict_psp/documents/declaration_riga.pdf

- **eMobility:** The digitalisation of public transport can be seen in various forms. These range from automated driving and electric vehicles to ICT infrastructure within the car and smart solutions on the road. Public services also use intelligent traffic management to enhance the quality of the transport sector.²⁴⁴ For instance, there are various actions in Spain that will enhance eMobility such as real-time traffic information via mobile apps and intelligent parking systems.
- **eParticipation:** eParticipation is the term used to describe all forms of political participation involving digital media, stemming both from the governmental level and the citizens themselves. There are three levels: eInformation where information is made available online; eConsultation for government to take into consideration citizens' views; and Decision-making, directly involving citizens.²⁴⁵ In Slovakia, for example, modern technologies are put in place to establish an eDemocracy and give citizens an equal chance to participate in public affairs.

Thematic Objective 11

- **Capacity Building through ICT:** Capacity building through ICT is the long-term process of facilitating knowledge acquisition and deliver appropriate tools to individuals about a particular sector. The aim is for civil servants to acquire appropriate skills to successfully perform their required functions.²⁴⁶ Bulgaria for instance is making investments needed to increase the efficiency of public administration and public services at various levels. This includes transnational cooperation for the exchange of best practices and experience to enhance the skills, competences and knowledge of public administration employees in Bulgaria.
- **eGovernment and Interoperability Framework:** An eGovernment and Interoperability Framework refers to commonly agreed approaches with a two-fold goal: to establish the use of ICT tools in public administration on the one hand and provide the delivery of public services in an interoperable manner on the other. This should ensure interaction between citizens and businesses and public administrations or between public administrations internally, taking place through effective digital services.²⁴⁷ An example of a Member State supporting institutional and administrative capacity through an eGovernment and Interoperability Framework is Romania. The country is establishing common legislative standards throughout its public sector as well as end-to-end interoperability interventions that help defining a uniform set of standards for ICT initiatives.
- **eInvoicing:** Electronic invoicing is the exchange of an electronic invoice document between a supplier and a buyer. An electronic invoice is an invoice that has been issued, transmitted

²⁴⁴ Definition adapted from: Gartner IT Glossary (2018). *Electro Mobility (E-Mobility)*. Accessed on 12 September 2018. Available at: <https://www.gartner.com/it-glossary/electro-mobility-e-mobility>

²⁴⁵ UN E-Government Knowledgebase (2018). *E-Participation Index*. Accessed on 13 September 2018. Available at: <https://publicadministration.un.org/egovkb/en-us/about/overview/e-participation>

²⁴⁶ International Telecommunication Union (ITU) (2003). *Presentation World Summit on the Information Society PrepCom II – Geneva Roundtable 5 – Feb 19, 2003*. Accessed on 13 September 2018. Available at :

<http://www.itu.int/net/wsis/docs/pc2/roundtables/rt5/zeitoun.pdf>

²⁴⁷ COM(2017) 134 final, Annex to the Communication from the Commission of the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the European Interoperability Framework – Implementation Strategy, Brussels, 23.3.2017.

and received in a structured data format which allows for its automatic and electronic processing.²⁴⁸ An example on eInvoicing implementation is presented in the OP of Latvia, which is developing information and data services such as eInvoicing and eCommerce.

- **eJustice:** The eJustice approach uses ICT to improve citizens' access to justice and to make legal action more effective. It also contributes to making the judicial system more accessible and transparent.²⁴⁹ The Italian government, for instance, is improving the efficiency and performance of judicial offices through computerisation and digitalisation of the offices to make proceedings and processes more efficient.
- **eProcurement:** eProcurement entails more than merely the use of electronic tools. It rethinks the pre-award and post-award phases to simplify participation and improve the management for the public sector. The integration of data-based approaches is facilitated at various stages of the procurement process. The aim is to address the lack of transparent public procurement processes and improve the competitiveness and transparency of many Member States.²⁵⁰ For example, the use of eProcurement solutions in Hungary is still in development. An electronically-structured system will increase transparency, uniform applications and lessen costs.
- **eTax:** Taxation becomes easier, faster and more efficient through digitalisation. eTax measures enhance the quality of public administration services, making the tax collection process more uniform.²⁵¹ This is the case in Croatia, where the tax administration's institutional framework aims to better engage with citizens.

Thematic Objectives 2 and 11

- **Base Registries:** A base register ensures the interoperability of public and municipal administrations' systems. It provides public servants with protected information on citizens, whose data is stored on the register. Access to the register is secured and only administrations with allowed access can control and upload information onto this cloud-like infrastructure.²⁵² An example of such an initiative is Portugal's base register for prosecutors that will reduce administrative burden on them by storing all information in one system.
- **Cybersecurity:** As the risks on cyber-attacks have grown in recent years, concerns about the protection of user data have risen. This has lead countries to enhance their cybersecurity systems. Cybersecurity entails all the measures that are taken to protect electronic data and counter the threat of criminal attacks and unauthorized use of data.²⁵³ The Czech Republic is

²⁴⁸ European Commission (n.d.). *What is eInvoicing*. Accessed on 13 September 2018. Available at:

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/What+is+eInvoicing>

²⁴⁹ COM(2008)329 final, Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee on Towards a European e-Justice Strategy, Brussels, 30.5.2008.

²⁵⁰ European Commission (n.d.). *E-procurement*. Accessed on 13 September 2018. Available at: <http://ec.europa.eu/growth/single-market/public-procurement/e-procurement/>

²⁵¹ Definition adapted from: Collins Dictionary (n.d.). *e-Taxes*. Accessed on 13 September 2018. Available at:

<https://www.collinsdictionary.com/submission/15504/E-Taxes>

²⁵² Joinup (2014). *Base Registries, Universal Database of Information*. Accessed on 13 September 2018. Available at:

<https://joinup.ec.europa.eu/document/base-registries-universal-database-information>

²⁵³ Oxford Dictionaries (2018). *Cybersecurity*. Accessed on 13 September 2018. Available at:

<https://en.oxforddictionaries.com/definition/cybersecurity>

tackling its cybersecurity by adopting a new cybersecurity law. The law entails legislative clauses on implementing various security measures throughout the country such as electronic identification, authentication and authorisation processes.

- **Digital public services delivery:** Public services are becoming more digital. Citizens and businesses can take care of not only purely administrative processes online, but also services in the health and education sectors for example. Digitalisation, automation and simplification are important end-goals for governments.²⁵⁴ The Finnish government, for example, aims to enhance electronic communication between the government and the citizens. For that reason, unnecessary or duplicate data requests will be removed and various processes will become fully automated.
- **eHealth:** eHealth refers to tools and services that use ICTs to improve all aspects of health and lifestyle such as diagnosis, treatment and monitoring. eHealth solutions also contribute to access to healthcare from distant regions, enhance the cooperation among the health sector, and improve the quality of healthcare services.²⁵⁵ Cyprus, for example, is investing in the development of ICT in the health sector. Public hospitals and health centres will be connected through one data centre system where all patients' files will be digitalised.
- **eSkills:** eSkills relate to the knowledge of applying and developing ICT and infrastructure. Users, i.e. citizens, need to possess the capabilities to use various technologies. For this reason, digital education starts from an early age in several countries. Practitioners, in both the front and back offices of public administrations also need to have profound digital literacy. Quality and new technologies will only enhance if people constantly learn and evolve.²⁵⁶ In Poland, for example, eSkills or digital literacy are both a priority for citizens and civil servants. Children and teenagers will have access to eLearning materials at school. Adults will be provided with tailored mechanisms to increase their digital competences. Workers, in turn, will receive training in how to deliver specific public eServices.
- **ICT Infrastructure:** ICT infrastructure embodies the system of hardware, software, facilities and service components that support the delivery of business systems and IT-enabled processes. The appropriate ICT infrastructure is a necessity to support the introduction or expansion of eGovernment and interoperability services.²⁵⁷ An example is the Estonian government that intends on covering the whole territory of the country with high-speed broadband infrastructure. This will benefit the development of eServices, productivity of citizens who will have the teleworking opportunity, healthcare facilities, as well as schools.
- **New Technologies:** New technologies cover the emerging technologies that influence public administration. They fall under the broad heading of IT (Information Technology). The term IT

²⁵⁴ Definition adapted from: European Commission (2017). eGovernment Benchmark 2017. Accessed on 13 September 2018. Available at: <https://www.capgemini.com/consulting/wp-content/uploads/sites/30/2017/11/2017-egovernment-benchmark-insight1.pdf>

²⁵⁵ European Commission (n.d.). *eHealth: Digital health and care*. Accessed on 13 September 2018. Available at: https://ec.europa.eu/health/ehealth/overview_en

²⁵⁶ Eurostat (2016). *Glossary: E-skills*. Accessed on 13 September 2018. Available at: <https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:E-skills>

²⁵⁷ Gartner IT Glossary (2018). *IT infrastructure*. Accessed on 12 September 2018. Available at: <https://www.gartner.com/it-glossary/it-infrastructure/>

includes any technology, software, or hardware, used to transmit, store, and manipulate information in the form of data. Having a more efficient IT infrastructure equipped with new technologies allows public administration systems to get more work done faster and more securely, even when employees are on the go.²⁵⁸ An example is the Greek government that aims to enhance technologies such as cloud computing, machine to machine transactions and contactless systems. The first important, however, is the adoption of relevant legislation.

- **Open Data:** Open data is data that anyone can access, use and share. Governments, businesses and individuals can use open data to bring about social, economic and environmental benefits. As Open Data embodies one of the dimensions of the DESI index, Member States are enhancing their efforts on Open Data activities.²⁵⁹ Slovenia is one of these countries, where the state is opening up the state-owned public cloud to make certain data available for businesses and citizens.
- **Raising Awareness:** Awareness-raising campaigns are used by Member States to enhance the digital knowledge of their citizens and to promote social inclusion through digital means. These campaigns can take the form of creating new participatory frameworks for citizens or launching new websites.²⁶⁰ Lithuania, for example, launched an awareness campaign on safe and responsible conduct in the cyber space. The government aims to ensure that people use the internet more safely.

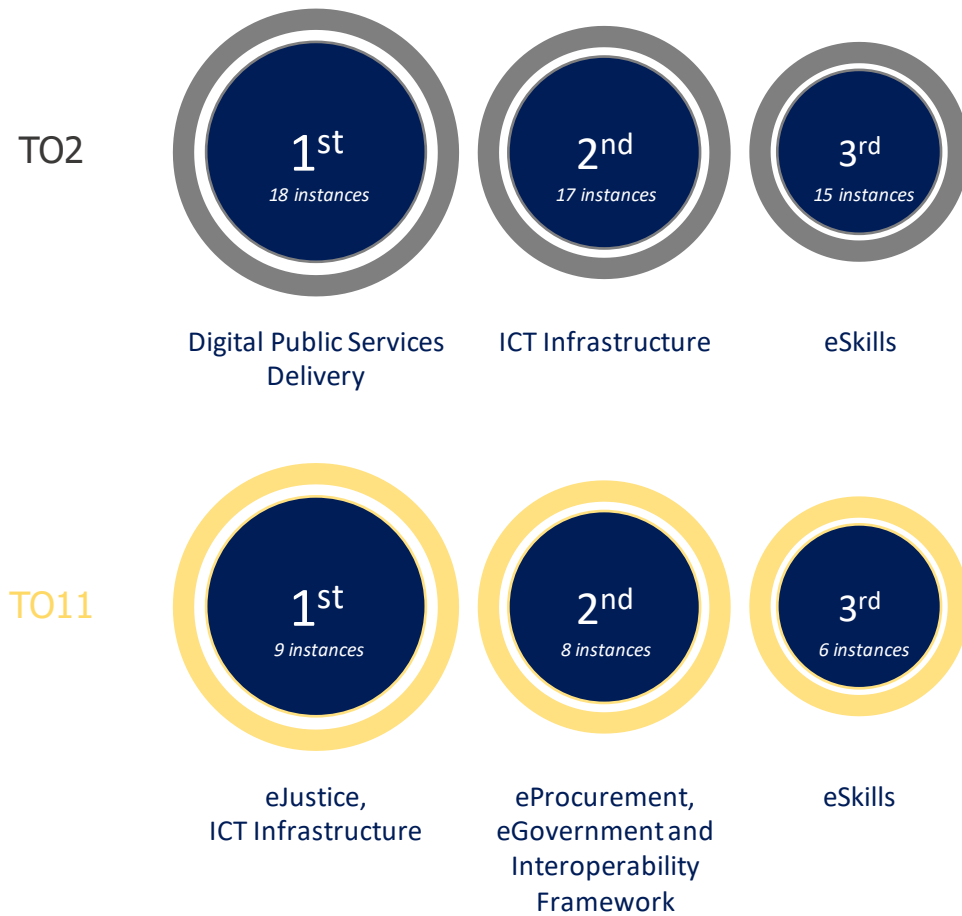
From the analysis of the countries' OPs it emerged that references to themes under TO2 are significantly more frequent (101 instances) than those related to TO11 (53 instances). As shown in Figure 14 the top three themes identified under TO2 are Digital Public Services Delivery (18 instances), ICT Infrastructure (17 instances) and eSkills (15 instances), whereas the top three themes under TO11 are eJustice and ICT Infrastructure (9 instances), eProcurement and eGovernment and Interoperability framework (8 instances) and eSkills (6 instances).

²⁵⁸ University of San Francisco (n.d.). *The Impact of Emerging Technology on Management and Public Administration*. Accessed on 12 September 2018. Available at: <https://onlinempadegree.usfca.edu/news-resources/news/the-impact-of-emerging-technology-on-management-and-public-administration/>

²⁵⁹ European Data Portal. (n.d.). *What is open data?* Accessed on 13 September 2018. Available at: <https://www.europeandataportal.eu/elearning/en/module1/#/id/co-01>

²⁶⁰ Definition adapted from: Richard Heeks (2001). *Building e-Governance for Development: A Framework for National and Donor Action*. Accessed on 14 September 2018. Available at: <http://unpan1.un.org/intradoc/groups/public/documents/NISPAcee/UNPAN015485.pdf>

Figure 14. Top three themes identified in the OPs under TO2 and TO11



Source: Analysis performed by Wavestone, Dec 2018.

From a country perspective, we identified an average of 8.2 references per country to issues falling under TO2 and TO11 in the 2014-2020 OPs, with one country scoring 14 references (Croatia), two countries scoring 13 references (Latvia and Romania) and one country scoring 11 references (Malta). It is worth further stressing that, out of the 28 EU Member States, the national Operational Programmes of 19 countries were considered for the analysis since they fall under the scope of ESIF TO2 or TO11. For nine countries (Belgium, Denmark, France, Germany, Ireland, Luxembourg, the Netherlands, Sweden and the United Kingdom) no national Operational Programmes fall under TO2 or TO11, therefore they are not mentioned in the scope of this analysis.

5. Conclusions and Recommendations

This chapter aims to answer RQ4 (Based on the finding of our analysis, how can the Commission better support Member States in their public administration digitalisation efforts, also in term of synergies with other Commission initiatives?). It first presents a set of conclusions on how the European Semester documents address the topic of digital government, followed by the recommendations addressed to the ISA² programme and other Commission initiatives operating in the domain of digital government.

For the purpose of the study, an analysis of the European Semester documents, namely the 2018 CSRs, the 2018 NRPs, as well as the 2014 – 2020 OPs financed through ESIF, covering all 28 EU Member States, was performed. Based on the results of the content analysis, the study identifies relevant themes to the existing actions from the ISA² Programme²⁶¹ and current challenges faced by the Member States, as well as propose new actions to better support them in their digitalisation efforts.

The analysis reveals that seven countries, namely Italy, Austria, Ireland, Croatia, Portugal and Cyprus have at least one recommendation linked to TO2 or TO11 in their CSRs, while the Netherlands does not contain any direct or indirect mentions of the issues falling under either TO2 or TO11. **eSkills** appears as a key reoccurring theme throughout all sets of documents, with Ireland and Portugal receiving a specific recommendation from the European Commission in their CSRs. When analysing the measures relating to TO2 and TO11 in Member States' NRPs and OPs, some analogies have been found. In both documents, priorities related to TO2 are largely mentioned, while priorities addressing TO11 are less present. Moreover, the most recurring theme identified in both NRPs and OPs is ICT infrastructure, along with eSkills and Digital public service delivery.

Conclusion N°1 – Several Member States are putting in place **strategies, action plans and frameworks** to enhance digital government and the efficiency of their public administrations. These measures lay down the guiding principle of important building blocks of digital government such as infrastructures, web portals and common standards.

Recommendation N°1 - In line with the recommendations provided by the EIF and the principles outlined in the eGovernment Action Plan 2016-2020, the Interoperability Unit could provide trainings, expert advice and strategic information to support policy makers working on the development and/or implementation of strategies, action plans or frameworks to enhance digital government within their country.

Possible business opportunities:

- Serve as an **advisory hub**, also complementing and building on the experience gained through the Structural Reform Support Programme (SRSP), which provides tailor-made support to all Member States for their institutional, administrative and growth-enhancing reforms. Moreover, the advisory hub could make available a database of internal experts

²⁶¹ European Commission (2018). *About ISA²*. Accessed on 10 December 2018. Available at: https://ec.europa.eu/isa2/isa2_en

from the European Commission in different policy fields to be consulted by the Member States that might require external expertise in specific policy areas.

- Deliver **on-site trainings** to the Member States based on the model used for the EIF trainings.
- Further inform Member States on **the ISA² portfolio of reusable solutions and services relating to the priorities identified within the European Semester process**. The catalogue of ISA² Solutions could categorise its solutions and services according to the themes identified as main priorities to Member States regarding digital government. Such classification could enrich the existing ISA² catalogue of solutions²⁶² and further foster the re-use of existing solutions, such as EIRA & CarTool, Core Vocabularies, Re3gistry, TESTA and CAMMS. The catalogue could be updated on a yearly basis according to the findings of country intelligence work performed under NIFO, including, for example, the European Semester report, eGovernment factsheets and monitoring of the EIF implementation.
- Further inform Member States on **funding opportunities to support digital government initiatives**. This could be done by providing a **comprehensive list of EU-sponsored funding programmes** that cover the digital government domain since no one-stop shop consolidating all the relevant information on the topic is currently available at EU level.

Conclusion N°2– The enhancement of **eSkills** appears as a key priority across Europe. This refers mainly to three stakeholder groups: students, adults seeking a job and civil servants.

Recommendation N°2: Digital skills are of increasing importance both in the public administration and in the labour market. As also stressed in the EIF²⁶³ (recommendation 20), a lack of in-house skills represents a barrier to an efficient implementation of digital government. In this regard, the Interoperability Unit could support Member States to enhance the digital skills of the civil servants for a better use of technology (e.g. IT tools, platforms, etc.) to achieve better public service delivery. Moreover, further support could be given to national and subnational public administrations to advance actions aimed to increase digital skills of students and adults. This can, in turn, enhance the attractiveness of jobseekers of different age in the labour market.

Possible business opportunities:

- Provide **on-site trainings** to increase the skills of public servants on the use of technology (e.g. IT tools, platforms, etc.) and digital government-related topics.
- Develop an online training material that can be used by civil servants.

²⁶² Further information available at: https://ec.europa.eu/isa2/solutions_en

²⁶³ European Commission (2017). *New European Interoperability Framework*. Accessed on 18 December 2018. Available at: https://ec.europa.eu/isa2/sites/isa/files/eif_brochure_final.pdf

Conclusion N°3 – The modernisation and the digitalisation of specific sectors like health, tax, mobility, culture and justice, are one of the main priorities of several Member States.

Recommendation N°3 - The Interoperability Unit could engage more closely with policy DGs and their Agencies, supporting them in all aspects related to digital government. Further attention should be given to the sectors identified as priorities to Member States regarding digital government, such as health, tax, mobility, culture and justice.

Possible business opportunities:

- **Provide strategic advice to policy DGs dealing with sector-specific digital government issues in all stages of the EU policy cycle.** The Interoperability Unit should work in close collaboration with policy DGs to ensure that sectorial initiatives are aligned with the EIF principles and leverage reusable ISA² solutions. The Unit could, for example, provide strategic advice and promote methods and services. Among these, the ICT Impact Assessment guidelines²⁶⁴ and supporting services in the ex-ante phase of the EU policy cycle, CAMSS²⁶⁵ in the implementing action phase and NIFO²⁶⁶ country (policy) intelligence and performance indicators in the ICT/digital government domain in the monitoring and evaluation phase.
- **Develop and promote cross-sector building blocks** that will enhance the efficiency and interoperability of sector-specific solutions. Existing solutions in this regard are TESTA,²⁶⁷ a data communication network service, and Open TrustEx,²⁶⁸ a secure file exchange platform.
- **Promote the use of the ISA² programme funding mechanism** to policy DGs that will impact the modernisation and digitalisation of public services within specific sectors. This could be done for example by raising awareness of policy DGs on the ISA² call for proposals. An example of sector specific collaboration comes from action 2016.15 FISMA: Financial Data Standardisation.²⁶⁹

Conclusion N°4 – Enhancing the delivery of public services to citizens and businesses is still seen as a priority in several Member States. In order to tackle this issue, Member States shall not only put in place the appropriate IT infrastructure, but also work on their **organisational capabilities**.

Recommendation N°4 - Although offering reusable digital solutions to Member States is an essential element for supporting them in their digital government reforms, the Commission could place more emphasis on integrating public service governance, as also stressed in the EIF.²⁷⁰

Possible business opportunities:

²⁶⁴ Further information available at: https://ec.europa.eu/isa2/actions/ict-implications_en

²⁶⁵ Further information available at: https://ec.europa.eu/isa2/solutions/camss_en

²⁶⁶ Further information available at: https://ec.europa.eu/isa2/solutions/nifo_en

²⁶⁷ Further information available at: https://ec.europa.eu/isa2/solutions/testa_en

²⁶⁸ Further information available at: https://ec.europa.eu/isa2/solutions/open-e-trustex_en

²⁶⁹ Further information available at: https://ec.europa.eu/isa2/actions/towards-better-financial-data-reporting_en

²⁷⁰ European Commission (2017). *New European Interoperability Framework*. Accessed on 18 December 2018. Available at: https://ec.europa.eu/isa2/sites/isa/files/eif_brochure_final.pdf

- **Share good practices, success cases and lesson learnt** among Member States' public administrations toward the provision of integrated public services. The Interoperability Unit could serve as a facilitator. This could be facilitated by actions like NIFO, Sharing and Reuse and EIF implementation and governance models. This is closely aligned with recommendation 25 of the EIF.
- **Support public administrations by providing examples** (aligned with EIF recommendations 26, 28 and 29) on how to formalise organisational relationships, for instance by means of business process documentation (as in the case of TAXUD BPM²⁷¹) and interoperability agreements. It translates into giving concrete examples to and educate Member States about the implementation of organisational interoperability.

Conclusion N°5 – Despite legislative efforts both at European and national level, and increasingly high compliance rates, **eProcurement** still figures among the key reform priorities of different Member States, especially with regard to transparency and corruption issues.

Recommendation N°5 - Bearing in mind one of the objectives of the eGovernment Action Plan - according to which companies anywhere in the EU will be able to bid for public procurement contracts electronically by 2018 - and in light of the fact that some countries are still lagging behind in the efficient implementation of eProcurement, the Interoperability Unit could collaborate with DG GROW in their efforts to support Member States which want to make a more efficient and effective use of eProcurement tools for both the public administration and businesses.

Possible business opportunities:

- Support DG GROW in investigating the **possible use of new technologies and tools** (e.g. Artificial Intelligence and blockchain) in public procurement processes.

²⁷¹ Further information available at: https://ec.europa.eu/taxation_customs/business/union-customs-code/ucc-bpm_en

Annex 1. Definitions

The definitions provided below are used for the CSRs, NRPs and OPs.

- **Base registries:** a base register ensures the interoperability of public and municipal administrations' systems. It provides public servants with protected information on citizens, whose data is stored on the register. Access to the register is secured and only administrations with allowed access can control and upload information onto this cloud-like infrastructure.²⁷²
- **Capacity Building through ICT:** Capacity building through ICT is the long-term process of facilitating knowledge acquisition and deliver appropriate tools to individuals about a particular sector. The aim is for civil servants to acquire appropriate skills to successfully perform their required functions.²⁷³
- **Cybersecurity:** As the risks on cyber-attacks have grown in recent years, concerns about the protection of user data have risen. This has led countries to enhance their cybersecurity systems. Cybersecurity entails all the measures that are taken to protect electronic data and counter the threat of criminal attacks and unauthorised use of data.²⁷⁴
- **Digital Public Services Delivery:** Public services are becoming more digital. Citizens and businesses can take care of not only purely administrative processes online, but also services in the health and education sectors for example. Digitalisation, automation and simplification are important end-goals for governments.²⁷⁵
- **Digitalisation of Businesses:** The private sector's digitalisation enhances the country's economic performance, companies' growth and visibility of SMEs, while ensuring competition. Cooperation between the private and public sector towards digitalisation is also an important aspect in the economy towards supporting innovation and the use of new technologies.²⁷⁶
- **eCulture:** New technology-based access to culture is expected to change both its production and dissemination. Culture is preserved and promoted through digital means, by increasing people's access to culture, offering them new ways to participate in cultural experiences and learn.²⁷⁷
- **eGovernment and Interoperability Framework:** An eGovernment and Interoperability Framework refers to commonly agreed approaches with a two-fold goal: to establish the use of ICT tools in public administration on the one hand and provide the delivery of public services

²⁷² Joinup (2014). *Base Registries, Universal Database of Information*. Accessed on 13 September 2018. Available at: <https://joinup.ec.europa.eu/document/base-registries-universal-database-information>

²⁷³ International Telecommunication Union (ITU) (2003). *Presentation World Summit on the Information Society PrepCom II – Geneva Roundtable 5 – Feb 19, 2003*. Accessed on 13 September 2018. Available at : <http://www.itu.int/net/wsis/docs/pc2/roundtables/rt5/zeitoun.pdf>

²⁷⁴ Oxford Dictionaries. (2018). *Cybersecurity*. Accessed on 12 September 2018. Available at: <https://en.oxforddictionaries.com/definition/cybersecurity>

²⁷⁵ Definition adapted from: European Commission (2017). *eGovernment Benchmark 2017*. Accessed on 13 September 2018. Available at: <https://www.capgemini.com/consulting/wp-content/uploads/sites/30/2017/11/2017-egovernment-benchmark-insight1.pdf>

²⁷⁶ European Commission (n.d.). *Digitising European Industry*. Accessed on 13 September 2018. Available at: <https://ec.europa.eu/digital-single-market/en/policies/digitising-european-industry>

²⁷⁷ Definition adapted from: Dictionnaire Sens Agent le Parisien (n.d.). *eCulture*. Accessed on 13 September 2018. Available at: <http://dictionnaire.sensagent.leparisien.fr/Eculture/fr-fr/>

in an interoperable manner on the other. This should ensure interaction between citizens and businesses and public administrations or between public administrations internally, taking place through effective digital services.²⁷⁸

- **eGovernment Portal for Businesses:** An eGovernment portal is created to facilitate the use of government services through electronic means in an effort to improve digital interaction between the government and the business. The use of eGovernment portals would eliminate the need of physical presence to government premises and paperwork will be reduced, public administration would be able to render services in a faster and more efficient way.²⁷⁹
- **eGovernment portal for citizens:** eGovernment portals for citizens are a web tool through which public administrations reach out to citizens, providing data, information and services. They sometimes allow citizens to supply their own data. Member States sometimes use one single portal as a one-stop shop for all administrative processes and in other cases Ministries have their own online eServices.²⁸⁰
- **eGovernment portal for citizens and businesses:** Online portals can be addressed for both citizens and businesses at the same time. It is a way for the government to enhance communication in a three-way approach, i.e. the public administration, private sector and citizens. It is a way for the government to enhance communication in a three-way approach, i.e. between the public administration, the private sector and citizens.
- **eHealth:** eHealth refers to tools and services that use ICTs to improve all aspects of health and lifestyle such as diagnosis, treatment and monitoring. eHealth solutions also contribute to access to healthcare from distant regions, enhance the cooperation among the health sector, and improve the quality of healthcare services.²⁸¹
- **eID:** In the EU, eID services help both public and private service providers to extend the use of their online services to the citizens from other European countries.²⁸² This ensures citizens to use their national eID to access, in a secure way, the services of other Member States.²⁸³
- **eInclusion:** eInclusion policies aim at reducing gaps in ICT usage. Governments can organise teaching sessions for example, to promote the use of ICT and allow all citizens to participate in the many aspects of information society. This will also benefit people's employment opportunities, cohesion, quality of life and the country's digital economy performance.²⁸⁴ The

²⁷⁸ COM(2017) 134 final, Annex to the Communication from the Commission of the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the European Interoperability Framework – Implementation Strategy, Brussels, 23.3.2017.

²⁷⁹ Research Gate (2014). *E-Government Portals Best Practices: A Comprehensive Survey*. Accessed on 13 September 2018. Available at: https://www.researchgate.net/publication/263809178_E-Government_Portals_Best_Practices_A_Comprehensive_Survey

²⁸⁰ Definition adapted from: E-Estonia (n.d.). *State e-services portal*. Accessed on 13 September 2018. Available at: <https://e-estonia.com/solutions/e-governance/state-e-services-portal/>

²⁸¹ European Commission (n.d.). *eHealth: Digital health and care*. Accessed on 13 September 2018. Available at: https://ec.europa.eu/health/ehealth/overview_en

²⁸² European Commission (n.d.). *CEF Digital Home*. Accessed on 18 December 2018. Available at <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eID>

²⁸³ European Commission (n.d.). *What is eID?* Accessed on 12 September 2018. Available at: <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/What+is+eID>

²⁸⁴ European Commission (2006). *Riga Ministerial Declaration on ICT for an Inclusive Society*. Accessed on 13 September 2018. Available at : http://ec.europa.eu/information_society/activities/ict_psp/documents/declaration_riga.pdf

- **eInvoicing:** Electronic invoicing is the exchange of an electronic invoice document between a supplier and a buyer. An electronic invoice is an invoice that has been issued, transmitted and received in a structured data format which allows for its automatic and electronic processing.²⁸⁵
- **eJustice:** The eJustice approach uses ICT to improve citizens' access to justice and to make legal action more effective. It also contributes to making the judicial system more accessible and transparent.²⁸⁶
- **eMobility:** The digitalisation of public transport can be seen in various forms. These range from automated driving and electric vehicles to ICT infrastructure within the car and smart solutions on the road. Public services also use intelligent traffic management to enhance the quality of the transport sector.²⁸⁷
- **eParticipation:** eParticipation is the term used to describe all forms of political participation involving digital media, stemming both from the governmental level and the citizens themselves. There are three levels: eInformation where information is made available online; eConsultation for government to take into consideration citizens' views; and eDecision-making, directly involving citizens.²⁸⁸
- **ePayments:** ePayment is the possibility to make payments for goods and services online. It is available on all types of devices, i.e. computers, smartphones and tablets. It is a widely-used means in the private sector by banks and is currently being developed in the public sector as well.²⁸⁹
- **eProcurement:** eProcurement entails more than merely the use of electronic tools. It rethinks the pre-award and post-award phases to simplify participation and improve the management for the public sector. The integration of data-based approaches is facilitated at various stages of the procurement process. The aim is to address the lack of transparent public procurement processes and improve the competitiveness and transparency of many Member States.²⁹⁰
- **eSkills:** eSkills relate to the knowledge of applying and developing ICT and infrastructure. Users, i.e. citizens, need to possess the capabilities to use various technologies. For this reason, digital education starts from an early age in several countries. Practitioners, in both the front and back offices of public administrations also need to have profound digital literacy. Quality and new technologies will only enhance if people constantly learn and evolve.²⁹¹

²⁸⁵ European Commission (n.d.). *What is eInvoicing*. Accessed on 12 September 2018. Available at:

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/What+is+eInvoicing>

²⁸⁶ COM(2008)329 final, Communication from the Commission to the Council, the European Parliament and the European Economic and Social Committee on Towards a European e-Justice Strategy, Brussels, 30.5.2008.

²⁸⁷ Definition adapted from: Gartner IT Glossary (2018). *Electro Mobility (E-Mobility)*. Accessed on 12 September 2018. Available at:

<https://www.gartner.com/it-glossary/electro-mobility-e-mobility>

²⁸⁸ UN E-Government Knowledgebase (2018). *E-Participation Index*. Accessed on 13 September 2018. Available at:

<https://publicadministration.un.org/egovkb/en-us/about/overview/e-participation>

²⁸⁹ Definition adapted from: Collins Dictionary (n.d.). *e-Payments Definition*. Accessed on 13 September 2018. Available at:

<https://www.collinsdictionary.com/dictionary/english/e-payment>

²⁹⁰ European Commission (n.d.). *E-procurement*. Accessed on 13 September 2018. Available at: <http://ec.europa.eu/growth/single-market/public-procurement/e-procurement/>

²⁹¹ Eurostat (2016). *Glossary: E-skills*. Accessed on 13 September 2018. Available at: <https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:E-skills>

- **eTax:** Taxation becomes easier, faster and more efficient through digitalisation. eTax measures enhance the quality of public administration services, making the tax collection process more uniform.²⁹²
- **ICT Infrastructure:** ICT infrastructure embodies the system of hardware, software, facilities and service components that support the delivery of business systems and IT-enabled processes. The appropriate ICT infrastructure is a necessity to support the introduction or expansion of eGovernment and interoperability services.²⁹³
- **New technologies:** New technologies cover the emerging technologies that influence public administration. They fall under the broad heading of IT (Information Technology). The term IT includes any technology, software, or hardware, used to transmit, store, and manipulate information in the form of data. Having a more efficient IT infrastructure equipped with new technologies allows public administration systems to get more work done faster and more securely, even when employees are on the go.²⁹⁴
- **Open Data:** Open data is data that anyone can access, use and share. Governments, businesses and individuals can use open data to bring about social, economic and environmental benefits. As Open Data embodies one of the dimensions of the DESI index, Member States are enhancing their efforts on Open Data activities.²⁹⁵
- **Raising awareness:** Awareness-raising campaigns are used by Member States to enhance the digital knowledge of their citizens and to promote social inclusion through digital means. These campaigns can take the form of creating new participatory frameworks for citizens or launching new websites.²⁹⁶

²⁹² Definition adapted from: Collins Dictionary (n.d.). *e-Taxes*. Accessed on 13 September 2018. Available at: <https://www.collinsdictionary.com/submission/15504/E-Taxes>

²⁹³ Gartner IT Glossary (2018). *IT infrastructure*. Accessed on 12 September 2018. Available at: <https://www.gartner.com/it-glossary/it-infrastructure/>

²⁹⁴ University of San Francisco (n.d.). *The Impact of Emerging Technology on Management and Public Administration*. Accessed on 12 September 2018. Available at: <https://onlinempadegree.usfca.edu/news-resources/news/the-impact-of-emerging-technology-on-management-and-public-administration/>

²⁹⁵ European Data Portal (n.d.). *What is open data?* Accessed on 13 September 2018. Available at: <https://www.europeandataportal.eu/elearning/en/module1/#/id/co-01>

²⁹⁶ Definition adapted from: Richard Heeks (2001). *Building e-Governance for Development: A Framework for National and Donor Action*. Accessed on 14 September 2018. Available at: <http://unpan1.un.org/intradoc/groups/public/documents/NISPAcee/UNPAN015485.pdf>

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