OECD Digital Government Studies

The E-Leaders Handbook on the Governance of Digital Government

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Please cite this publication as:
OECD (2021), *The E-Leaders Handbook on the Governance of Digital Government*, OECD Digital Government Studies, OECD Publishing, Paris, *https://doi.org/10.1787/ac7f2531-en*.

ISBN 978-92-64-37173-6 (print)
ISBN 978-92-64-61987-6 (pdf)

OECD Digital Government Studies
ISSN 2413-1954 (print)
ISSN 2413-1962 (online)

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Corrigenda to publications may be found on line at: *www.oecd.org/about/publishing/corrigenda.htm*.

Foreword

Digital governments play a vital role in managing and responding to the rapid changes arising from the digital transformation of public sectors, economies and societies. Since the adoption of the OECD Recommendation of the Council on Digital Government Strategies in 2014, the OECD has been promoting digital government in OECD Member and Partner countries and supporting them in their efforts to achieve government digital maturity. The 2021 G20 Digital Ministerial Declaration, adopted under the G20 Italian Presidency, and its related outputs developed with the support of the OECD, were a strong testament to the importance of digital government in building accessible, human-centred and trustworthy public services and of enablers such as digital identity systems. In the context of recovery from the COVID-19 crisis, digital governments have an opportunity to strengthen inclusive, equitable and sustainable public policies and services for the digital age, centred on and driven by the needs of citizens and businesses.

To attain these outcomes, robust governance (i.e. legal and administrative structures, institutional arrangements and mechanisms, policy instruments) is needed to reap the full advantages of being digital and data-driven and to encourage a holistic systemic transformation. As governments mainstream the use of digital technologies and data across sectors and levels of governments, the effective design and implementation of digital government policies need clear and solid leadership, together with the involvement and accountability of relevant stakeholders of the ecosystem. A successful digital transformation requires close co-ordination between the digital government strategy design and execution, efficient and agile management, consistent and coherent planning, and investment in digitalisation projects and initiatives in the public sector.

All these governance elements play a pivotal role in establishing solid foundations for digital government maturity and the long-term sustainability of public sector digital transformation. This is especially true in a post-COVID-19 context where the efforts that went into the overnight adoption of digital tools and operations may not have the political support and commitment they need to continue. More importantly, digital governments would benefit from making the digital agenda an integral part of broader public sector reform and policy agendas. This will help create cross-cutting synergies between digital government and policies that are core to public sector modernisation (e.g. openness, innovation, agility, administrative simplification), as well as with other key priorities of COVID-19 recovery, such as the green transition and efforts to reinforce democracy. Establishing the right governance is, therefore, essential to reap the benefits from decades of investments in the digital transformation of public sectors, and ensure that value-based and digitally mature governments contribute to shaping better outcomes for digital economies and societies.

Building on the outcomes of the OECD Working Party of Senior Digital Government Officials (E-Leaders) meetings in Seoul (2018) and in Brussels (2019), this Handbook elaborates on the concept and approaches of governance of digital government based on the concrete experiences of the E-Leaders, and provides a practical and easy-to-use toolbox for policy makers to improve their digital governance maturity. It also seeks to reflect the new opportunities, challenges and priorities that digital governments have faced as a result of the COVID-19 pandemic.

This Handbook provides public sector digital leaders a wealth of knowledge drawn from the experience from OECD digital governments, which can help establish the appropriate governance for their own digital transformation, adapted to their national context. Going forward, regular iterations and updates of this Handbook will ensure its usefulness and responsiveness to the evolving opportunities and challenges faced by governments, and maintain a governance framework that meets the needs of governments. The OECD stands ready to support countries in implementing the approaches proposed in the Handbook so that the digital transformation of the public sector produces better policies for better lives.

Acknowledgements

The E-Leaders Handbook on the Governance of Digital Government was prepared by the OECD Directorate for Public Governance (GOV), under the leadership of Elsa Pilichowski, Director of GOV. The mission of GOV is to help governments at all levels design and implement strategic, evidence-based and innovative public policies to strengthen public governance, respond effectively to diverse and disruptive economic, social and technological challenges and deliver on government's commitments to citizens.

The Handbook was produced by GOV's Open and Innovative Government Division (GOV/OIG), under the supervision of Barbara-Chiara Ubaldi, Head of the Digital Government and Data Unit in OIG.

Chapters 1 and 2 were drafted by João Ricardo Vasconcelos, former Policy Analyst and Zina Akrout, former Junior Policy Analyst both in the Digital Government and Data Unit. Ethel Hui Yan Tan, Junior Policy Analyst in the Digital Government and Data Unit, revised Chapters 1 and 2, and authored Chapters 3, 4 and 5. João Ricardo Vasconcelos initially led the management and development of the Handbook. Felipe González-Zapata, Policy Analyst in the Digital Government and Data Unit, served as the final lead co-ordinator and reviewer of the Handbook. Strategic guidance was provided by Barbara-Chiara Ubaldi, Alison Rygh, former Secondee, Jacob Arturo Rivera Perez and Benjamin Welby, Policy Analysts, and Alex Seemann, Junior Policy Analyst in the Digital Government and Data Unit. Meral Gedik provided editorial support.

The Digital Government and Data Unit is also thankful to colleagues and peer reviewers from the Open Government and Civic Space Unit (GOV/OIG), the Infrastructure and Public Procurement Division (GOV/IPP), the Support for Improvement in Governance and Management Division (GOV/SIGMA), the Regulatory Policy Division (GOV/REG) and the Policy Coherence for Sustainable Development Division (GOV/PCSDG) for their valuable inputs.

This Handbook was developed with the E-Leaders Task Force on the Governance of Digital Government over 2019, 2020 and 2021. It has benefited from the active collaboration and precious experience of all the delegates of the E-Leaders Task Force on the Governance of Digital Government: Australia, Denmark, Estonia, Finland, Italy, Korea, New Zealand, Norway, Panama, Portugal, Sweden, Uruguay, the United Kingdom and the European Commission (DG CONNECT and DG DIGIT). The OECD Secretariat is grateful to Liz Lutgendorff, Farah Hussain, Hannah Whittaker and Richard Furlong from the United Kingdom Government Digital Service for their comprehensive advice on content design. The strong support and contributions from the E-Leaders has also been crucial to the elaboration of this Handbook.

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Governments are prioritising the uptake of digital technologies, data and innovative practices across their public sectors. These tools and approaches have great potential to improve the efficiency and effectiveness of internal operations, interactions with numerous stakeholders and public services. Yet, governments often still struggle to tackle some of the long-standing complexities associated with the governance of digital government and the task of digitally enabling their administrations.

In this age of fast-paced disruption – rapid technological evolution, changing societal needs, unexpected crises – it is crucial to address how governments can best use digital technologies and data to increase productivity and resilience in their public sectors, and enhance the quality of public services in an inclusive, equitable, sustainable and trustworthy way. To achieve these aims, it is critical to establish the right institutional arrangements, co-ordination mechanisms and policy instruments to sustain the needed transformations in the long-term and overcome changing political priorities.

Becoming a digitally-mature government requires good governance as a foundation on which enablers such as digital identity, signatures and procurement strategies as well as accurate and interoperable data registries and public services that fully meet the needs of users can be built. This requires establishing sound governance principles, arrangements and mechanisms to shape and monitor actions upstream, while being transparent and responsible in the provision of public services and outcomes downstream. Such governance is particularly critical to ensure that the decisions taken by the government are coherent, consistent and co-ordinated across policy areas and levels of government.

Good digital governance in the public sector is also fundamental to building the competencies needed to operate in an increasingly complex and digital global context. The competencies required for governments to effectively transform the way they operate, meet the needs of people, and shape economic and societal changes through the use of digital technologies and data is vast and diverse. They include becoming digital by design, data-driven, capable to operate as a platform, open by default, user-driven and proactive, as noted in the OECD Digital Government Policy Framework (2020).

In this context, the OECD presents the **OECD Framework on the Governance of Digital Government** that identifies three critical governance facets to be considered when devising digital governance frameworks:

- *Facet 1: Contextual Factors* to have a clear knowledge of country-specific characteristics and thus be able to define the most suitable governance principles, arrangements and mechanisms according to the political, administrative, socio-economic, technological, policy and geographical context;
- *Facet 2: Institutional Models* and their different parameters (e.g. set-up, approach, leadership, role, responsibilities, co-ordination, collaboration) to guide the design and implementation of digital government policies and achieve a sustainable digital transformation of the public sector;
- *Facet 3: Policy Levers* (including strategy, project management tools, financial management mechanisms, regulations and standards) to support the sound and coherent implementation of

digital government strategies and use of digital technologies and data across policy areas and levels of government.

Following these three facets, the Handbook outlines critical policy issues and recommendations around key dimensions of governance of digital government, with a focus on promoting effective, open, participatory and innovative governments. For this, the OECD recommends that governments should adopt a comprehensive and holistic approach to the governance of digital government, establish the most suitable institutional models and policy levers, with priorities and emphases according to the specific context of the country. All in all, such governance should secure the clear and stable development and implementation of digital government strategies towards being a mature, digitally enabled state.

1 Introduction

Chapter 1 depicts the need for better public governance in the digital transformation of the public sector to support healthy digital government ecosystems, economies and societies. It also demonstrates the rationale leading up to the production of the Handbook and the accompanying OECD Framework on the Governance of Digital Government.

The path towards digital government maturity calls for better governance

Over the last few decades, the *digitisation* of government processes and public services (i.e. transition from analogue to e-government) has progressed significantly. Governments have been working to modernise their working methods and procedures to adapt to new technologies and the needs of people through large-scale public sector reforms. While *digitisation* has undoubtedly led to higher vertical integration within single public sector organisations, policy makers are still confronted with the public governance challenge of fostering the horizontal integration that is enabled by *digitalisation* but also required to advance a coherent digital transformation of governments.[1]

Countries that were more advanced in their digital governance showed to have gained substantial advantages in managing the crisis. For instance, the governments of Korea and the United Kingdom (i.e. the top performing countries on the 2019 DGI) demonstrated that they were able to efficiently and easily leverage existing enablers (e.g. common and open source digital tools, digital/data infrastructure, public-private partnerships) to build and scale up their responses (G20/OECD, 2021[1]).

The digital transformation of the public sector is a complex and huge process that revamps both the functioning and structure of public sector organisations, and the conditions of access to and use of public data and services. On one side, it requires equipping civil servants with the means to improve and transform public sector operations and services using digital technologies and data while guaranteeing the sustainability of solutions, their regular monitoring and evaluation, and the dissemination of new practices. On another front, it involves accompanying users with various needs in a trustworthy, transparent and collaborative relationship to better understand, meet their needs and fully empower them (OECD, 2014[2]).

A digitally mature government requires clear and legitimised leadership, with a mandate and strategic vision for system-wide transformation, and government-wide coherence and integration of decisions and activities within and between public sector organisations, while ensuring that the relations with citizens and businesses are fostered on collaborations around public policies and services for increased economic productivity and improved societal well-being. For this reason, the establishment of governance arrangements and mechanisms that secure sound leadership and co-ordination, and foster system-based rather than silo-driven decisions are necessary for governments to properly drive the digital transformation of the public sector, and to ensure the continuity required to deliver long-term sustainable results.

The most prevalent challenges faced by governments are linked to existing administrative environments that are characterised primarily by vertical hierarchical models and silos that hamper an evolution towards more coherent investment and operational cycles. Governments should prioritise actions that are geared towards horizontal integration rather than on vertical efficiency. This is needed to foster the use of digital technologies and data that favours linkages among strategic policy efforts across different sectors and levels of government, and to ensure the level of policy coherence and synergies required for long-term sustainability of investments, initiatives and results. Institutional models need to be considered and adjusted to support a whole-of-government transformation that delivers better results and responds to citizen's increasing and changing expectations with agility and fairness.

Although efficiency and productivity have been the primary targets in digital government policies, more mature governments are also emphasising a values-based and human-centred approach built on trust to meet the needs of citizens and businesses. Hence, service users and other stakeholders from the private sector and civil society are increasingly placed at the heart of user-driven approaches to public service design and delivery. Ultimately, public governance that draws on political support and clear administrative mandates can enable a more coherent and strategic path to digital maturity. This means that sound co-ordination in the ecosystem of stakeholders on the design, development, implementation and monitoring of public policies supporting digital transformation is needed to deliver the expected policy results (OECD, 2014[2]).

Building on the work of the E-Leaders Task Force on the Governance of Digital Government

On October 30-31, 2018, delegates from 32 OECD member countries attended the annual meeting of the OECD Working Party of Senior Digital Government Officials (E-Leaders)[2] and agreed to develop further understanding on the governance of digital government in light of the higher integration demanded by the digital transformation of the public sector. The OECD Secretariat was tasked with researching, analysing and producing policy guidance on this matter, which culminated into the E-Leaders Handbook on the Governance of Digital Government (hereinafter the E-Leaders Governance Handbook).

This mandate came from the realisation that public governance is a crucial element at the core of studies and debates on digital government and public sector reforms, but the concept is still abstractly defined and applied. The understanding of the governance of digital government had not yet been crystallised and translated into a tool to guide and inform concrete decisions.

To improve the conceptual and empirical knowledge on the topic of governance in the context of digital government, and building on the work developed in the OECD Digital Government and Open Government Data Reviews, Studies and Reports (see Box 1.1), the OECD Secretariat invited delegates to participate in an E-Leaders Task Force on the Governance of Digital Government. The intent was to take a deeper dive into the issues surrounding public governance in line with the principles in Pillars 1, 2 and 3 of the OECD Recommendation of the Council on Digital Government Strategies (2014) (see Figure 1.1).

Box 1.1. Relevance of governance in OECD digital government and open data publications

Digital Government Publications

Since the approval of the OECD Recommendation of the Council on Digital Government Strategies (2014), the topic of governance has been substantially addressed in the vast majority of the OECD Digital Government Reviews and Studies:

- Estonia and Finland: Fostering Strategic Capacity across Governments and Digital Services across Borders (2015)
- Digital Government in Chile: Strengthening the Institutional and Governance Framework (2016)
- Benchmarking Digital Government Strategies in MENA Countries (2017)
- Digital Government Review of Norway: Boosting the Digital Transformation of the Public Sector (2017)
- Assessing the Impact of Digital Government in Colombia: Towards a New Methodology (2017)
- Digital Government Review of Norway: Boosting the Digital Transformation of the Public Sector (2017)
- Digital Government Review of Morocco: Laying the Foundations for the Digital Transformation of the Public Sector in Morocco (2018)
- Digital Government Review of Colombia: Towards a Citizen-Driven Public Sector (2018)
- Digital Government Review of Brazil: Towards the Digital Transformation of the Public Sector (2018)
- Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste (2018)
- Digital Government Review of Sweden: Towards a Data-Driven Public Sector (2019)
- Digital Government Review of Argentina: Accelerating the Digitalisation of the Public Sector (2019)
- Digital Government in Peru: Working Closely with Citizens (2019)
- Digital Government in Chile – A Strategy to Enable Digital Transformation (2019)
- Digital Government in Chile – Digital Identity (2019)
- Digital Government Review of Panama: Enhancing the Digital Transformation of the Public Sector (2019)

- Digital Government in Lebanon: Governance for Coherent and Sustainable Policy Implementation (2020)
- Digital Government in Chile – Improving Public Service Design and Delivery (2020)
- "OECD Digital Government Index (DGI): 2019 results" Policy Paper (2020)
- Digital Government Review of Slovenia: Leading the Digital Transformation of the Public Sector (2021)
- Open and Connected Government Review of Thailand (forthcoming)

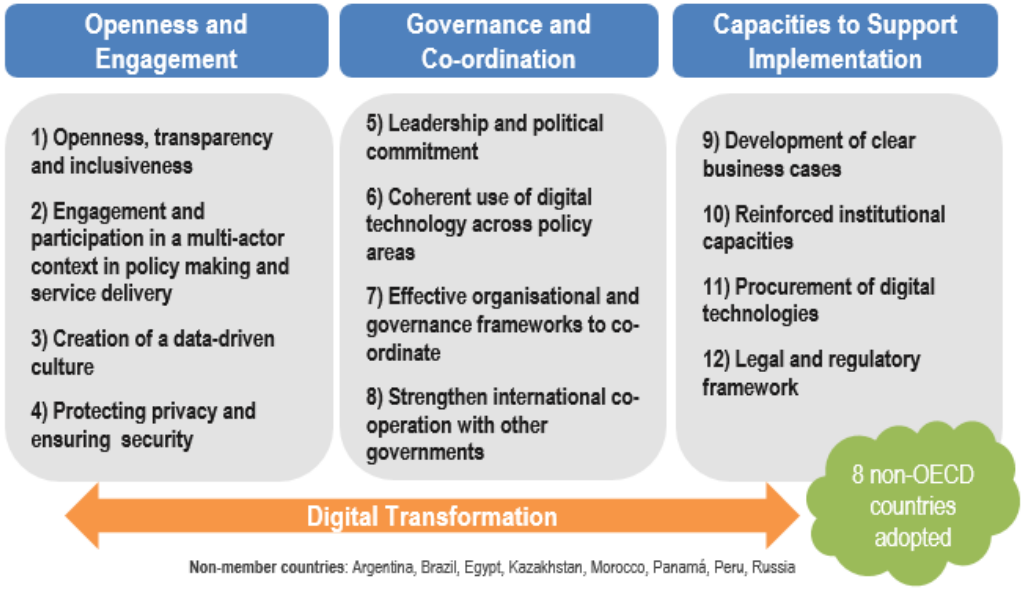
Open Government Data Publications

Governance has also been a central topic on the following OECD Open Government Data Reviews and Reports:

- Open Government Data Review of Poland: Unlocking the Value of Government Data (2015)
- Open Government Data Review of Mexico: Data Reuse for Public Sector Impact and Innovation (2016)
- Open Government Data in Mexico: The Way Forward (2018)
- Open Government Data Report: Enhancing Policy Maturity for Sustainable Impact (2018)
- The Path to Becoming a Data-Driven Public Sector (2019)
- "OECD Open, Useful and Re-usable data (OURdata) Index: 2019 results" Policy Paper (2020)

Source: Author.

Figure 1.1. Three pillars of the OECD Recommendation on Digital Government Strategies (2014)



Source: (OECD, 2014[2]), "OECD Recommendation of the Council on Digital Government Strategies", https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406.

In line with the outputs of the discussions during the virtual meetings of the E-Leaders Task Force on the Governance of Digital Government, the OECD Secretariat produced the E-Leaders Governance Handbook to establish a robust framework of analysis in this area based on (but not limited to) OECD country approaches and practices, and to support OECD member and non-member countries to seize the benefits and tackle the difficulties of digitalisation through robust governance approaches. It sets out the **OECD**

Framework on the Governance of Digital Government that can be used by the OECD and governments to (self-)assess the current situation and identify areas for improvement.

The first draft of the E-Leaders Governance Handbook was presented to delegates during the annual meeting of the E-Leaders in Brussels on September 19-20, 2019. Following the COVID-19 outbreak in 2020, the OECD Secretariat further developed the E-Leaders Governance Handbook to reflect the new opportunities, challenges and priorities that governments faced as a result of the economic, social and sanitary crisis in addition to the heightened urgency to mitigate climate change and undertake the green transition. Similarly, the United Kingdom Government Digital Service provided support on content design to upgrade the first version of the Handbook through online and in-person exchanges at their premises. As a result of these steps, a second version of the E-Leaders Governance Handbook was presented during the virtual annual meeting of the E-Leaders on October 15-16, 2020.

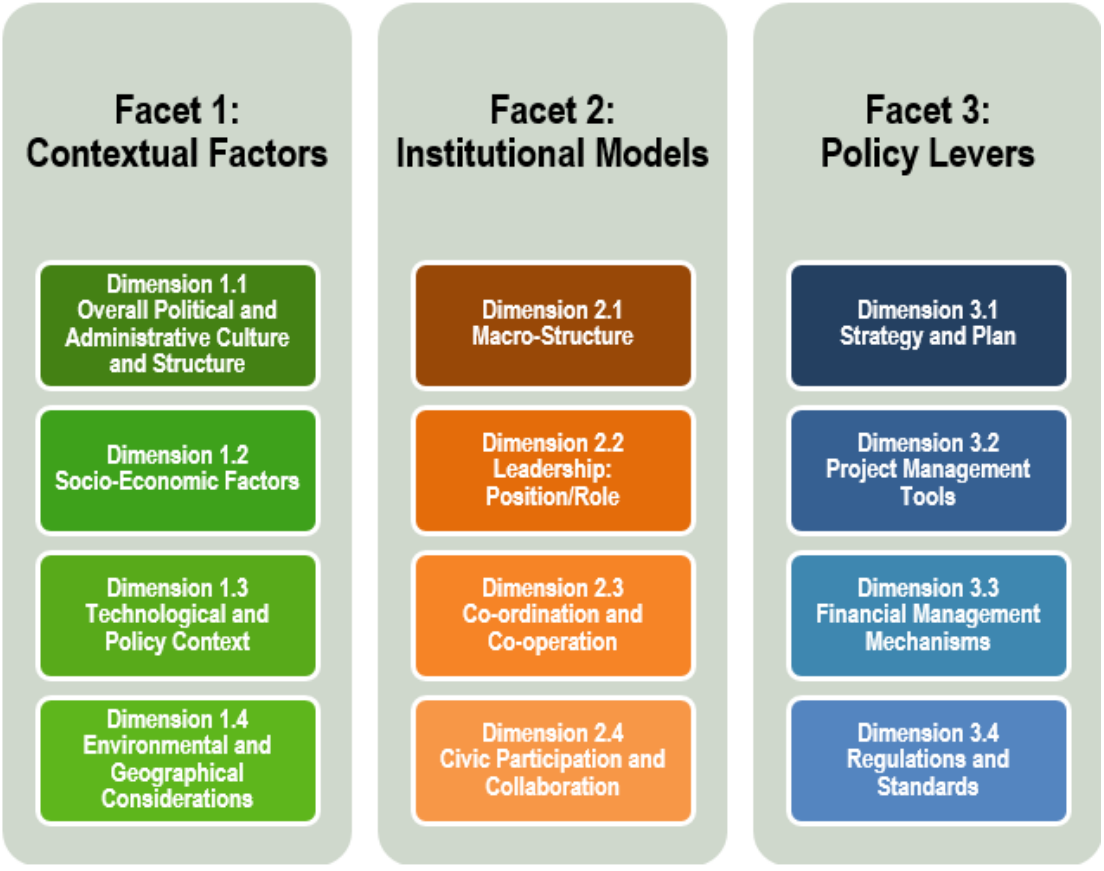
Presenting the OECD Framework on the Governance of Digital Government

The **OECD Framework on the Governance of Digital Government** contains three critical facets (see Figure 1.2):

- *Facet 1: Contextual Factors* that elaborates on country-specific characteristics that should be identified and considered according to the political, administrative, socio-economic, technological, policy and geographical context. Although each country has its contextual specificities that warrant a unique governance framework, the application of the OECD Recommendation of the Council on Digital Government Strategies (2014) can help to identify common elements of governance that are relevant for all countries.
- *Facet 2: Institutional Models* that presents the different forms of institutional set-ups, approaches, arrangements and mechanisms for working within the public sector and the digital government ecosystem, and how their parameters can and should influence and direct digital government strategies and their implementation sustainably.
- *Facet 3: Policy Levers* that addresses the different policy instruments that governments can use to ensure a sound and coherent digital transformation of the public sector, covering the strategy, project management tools, financial management mechanisms, and regulations and standards.

Figure 1.2. The OECD Framework on the Governance of Digital Government

The three governance facets and each of their four dimensions



Note: Facets refer to the fundamental features of governance. Dimensions are the main elements that make up each facet. Sub-dimensions (shown later in Chapters 3, 4 and 5) are the sub-elements that form each dimension.
Source: Author, based on the discussions of the E-Leaders Task Force on the Governance of Digital Government and iterations thereafter.

Enclosed within the three governance facets of the **OECD Framework on the Governance of Digital Government** are key dimensions and sub-dimensions to be considered when identifying an adequate mix of elements defining the governance of digital government in each country. The Handbook provides practical guidance (i.e. through descriptions, policy questions, recommendations) to take strategic, tactical and operational decisions towards the adoption of robust public governance approaches to digital government based on the OECD Recommendation of the Council on Digital Government Strategies (2014). It also presents a range of approaches and practices in a number of countries (both OECD member and non-OECD member) that can illustrate how governments have addressed and approached their governance of digital government concretely.

In regards to aligning the OECD Recommendation of the Council on Digital Government Strategies (2014) with the **OECD Framework on the Governance of Digital Government**:

- Principles in Pillar 1 “Openness and Engagement” are taken to be the norms that governments should embed throughout their governance process (i.e. to be transparent, open, inclusive, data-driven, and to encourage the engagement and participation of stakeholders wherever possible).

Therefore, they feature in both *Facet 2: Institutional Models* and *Facet 3: Policy Levers* as facets that elaborate on the operationalisation of the governance of digital government.

- Principles in Pillar 2 "Governance and Co-ordination" align closely with the dimensions of *Facet 2: Institutional Models* as they deal with organisational structure, personal leadership, co-ordination, co-operation and collaboration across levels of government and policy areas, and the interplay with the broader digital government ecosystem.
- Principles in Pillar 3 "Capacities to Support Implementation" align closely with the dimensions of *Facet 3: Policy Levers* as they deal with policy instruments for the strategising, implementation and management of digital government programmes, enablers, initiatives and public services.

The E-Leaders Governance Handbook is structured such that Chapter 2 briefly introduces the concept of public governance and its application to the governance of digital governments by drawing on the work of the OECD, while Chapters 3, 4 and 5 correspond to an elaboration of each of the three governance facets.

Note

[1] The OECD has produced various publications that reflect on and demarcate the digitisation and digitalisation of the public sector. *Digitisation* refers to the introduction of digital technologies in public administration, namely by transforming analogue information and processes into digital ones. Building on digitisation, *digitalisation* is a transformative process that integrates digital technologies and data into public sector transformation efforts (OECD, 2016[98]). The OECD Recommendation of the Council on Digital Government Strategies (2014) promotes and supports governments in their digitalisation efforts, namely in developing and implementing digital government strategies that establish more effective co-ordination mechanisms, stronger capacities and frameworks to improve the effectiveness of digital technologies in delivering public value and strengthening citizen trust (OECD, 2014[2]).

[2] The OECD Working Party of Senior Digital Government Officials (E-Leaders) was established to foster knowledge sharing and peer-to-peer learning to support policy makers around the world in advancing digital government policies' design and implementation for the benefit of economies and societies. It serves as a safe space for international co-operation, in collaboration with OECD member countries and invited non-member countries, based on their experiences of "what works and what does not work" to overcome policy challenges, seize policy opportunities and improve policy impact. As such, the aim of the E-Leaders is to facilitate intergovernmental and interorganisational partnerships in the spirit of mutual learning and targeted co-operation, matching the needs and skills of different digital government stakeholders and building on countries' different competitive advantages. The E-Leaders relies on the sustained interest of governments to leverage the OECD's expertise and existing normative, policy and analytical tools and mechanisms to exchange and transfer knowledge through global peer learning. It envisages an effective mobilisation of digital technologies and data to improve countries' public sector, economic and societal conditions through an equitable, inclusive and sustainable transformation to digitally mature states.

2 The concept of public governance and its application to digital government

Chapter 2 provides a brief theoretical consideration of the concept of public governance applied to digital government transformation while identifying what elements are necessary and applicable to achieve robust governance and sound digital government policies.

Understanding the concept of public governance

Public governance can be defined as "the formal and informal arrangements that determine how public decisions are made and how public actions are carried out, from the perspective of maintaining a country's constitutional values in the face of changing problems, actors and environments" (OECD, 2005[3]). This administrative and institutional setting defines and regulates how stakeholders interrelate and co-operate in decision-making processes, take part in the policy process and assume the provision of public services (OECD, 2018[4]).

This modern conceptualisation of and approach to public governance arises from the crises of governance that economies and societies have been through due to failures of governments to govern, the un-governability of systems and/or the need to manage and mitigate the associated systemic risks (e.g. financial crisis of 2007-2008, terrorism, wars and humanitarian crises, COVID-19 pandemic, climate change).

Towards good public governance

Public governance appeared to be a helpful response to the contradictions and uncertainties engendered by political, economic, societal, technological and environmental changes. It emphasises the multiplicity and diversity of actors who intervene and contribute to the management of public affairs. Governability challenges invite government authorities at the national, regional and local levels to turn to interlocutors outside the public sector, such as non-profit organisations, private companies and citizens, who can contribute solutions to the common problems of the economy and society.

In doing so, governance emphasises the sharing of responsibilities among the state, private sector and civil society in the decision-making process. Governments that were previously considered as interventionists and regulators must now transition towards the role of facilitator, strategist, consensus-builder and co-creator. Fulfilling these roles and having the competence/values through good public governance is key to maintaining peoples' trust in the face of crises and unpredictability (see Table 2.1).

Table 2.1. The competence-values framework for citizens' trust in public institutions

Good public governance is essential to help governments fulfil their mandates

	Government mandate involved	Key elements	Overall public policy objective
Competence: The ability of governments to deliver to citizens the services they need, at the quality level they expect	Provide public services	• Access to public services regardless of income and place of residence. • Quality and timeliness of public services. • Respect in public service provision, including response to citizen feedback.	Responsiveness
	Anticipate change, protect citizens	• Anticipation and adequate assessment of citizens' evolving needs and challenges. • Consistent and predictable behaviour. • Effective management of social, economic and political uncertainty.	Reliability
Values: The principles that inform and guide government action	Use power and public resources ethically	• High standards of behaviour. • Commitment to fight corruption. • Accountability.	Integrity
	Inform, consult and listen to citizens	• Letting citizens know and understand what the government is doing. • Engagement opportunities that lead to tangible results.	Openness

	Improve socio-economic conditions for all	• Pursuit of socio-economic progress for society as a whole. • Consistent treatment of citizens and businesses (vs. fear of capture).	Fairness

Source: (OECD, 2017[5]), *Trust and Public Policy: How Better Governance Can Help Rebuild Public Trust*, OECD Publishing, Paris, https://doi.org/10.1787/9789264268920-en

In this ecosystem of interactions and collaborations around the decision-making processes of the state, public governance needs to ensure above all the right balance of powers among the stakeholders from the public sector, private sector and civil society. Creating an area of security and stability, respecting the rule of law, protecting fundamental human rights and ensuring the separation of powers are crucial. Governance principles, arrangements and mechanisms, therefore, help stakeholders to organise these interests, exercise their duties, rights and obligations, and resolve their differences.

Numerous intergovernmental organisations are working on establishing policies, rules, structures, and processes to develop principles of good public governance. All OECD member countries have ratified at least one international human rights instrument, thus providing authorities, citizens and donors with a universal and legitimate reference framework for governance reforms. The United Nations Member States have reaffirmed their commitment to improving the political environment in critical areas such as peace, security, development, human rights and democracy in the United Nations Millennium Declaration (United Nations, 2000[6]). The main elements contained in these instruments often vary according to the context. However, common frameworks tend to imply good public governance should involve the principles of responsibility, transparency, the rule of law and participation. For instance, the European Commission's 2001 White Paper on Governance sets out five principles to be respected for good and more democratic governance in European Union Member States (i.e. openness, participation, accountability, effectiveness, coherence) (see Box 2.1). The establishment of an effective and efficient governance system requires the adoption of good practices in management, ethics and social responsibility. Adopting and implementing responsible governance principles in public administrations is fundamental to achieving these goals.

Box 2.1. Principles of Good Governance from the 2001 White Paper on European Governance

Five principles underpin good governance and the changes proposed in the White Paper: *openness, participation, accountability, effectiveness and coherence*. Each principle is important for establishing more democratic governance. They underpin democracy and the rule of law in the Member States, but they apply to all levels of government – global, European, national, regional and local. They are particularly important for the Union in order to respond to the challenges highlighted in the preceding chapter.

1. **Openness**: The Institutions should work in a more open manner. Together with the Member States, they should actively communicate about what the EU does and the decisions it takes. They should use language that is accessible and understandable for the general public. This is of particular importance in order to improve the confidence in complex institutions.
2. **Participation**: The quality, relevance and effectiveness of EU policies depend on ensuring wide participation throughout the policy chain – from conception to implementation. Improved participation is likely to create more confidence in the end result and in the Institutions which deliver policies. Participation crucially depends on central governments following an inclusive approach when developing and implementing EU policies.
3. **Accountability**: Roles in the legislative and executive processes need to be clearer. Each of the EU Institutions must explain and take responsibility for what it does in Europe. But there is

also a need for greater clarity and responsibility from Member States and all those involved in developing and implementing EU policy at whatever level.

4. **Effectiveness**: Policies must be effective and timely, delivering what is needed on the basis of clear objectives, an evaluation of future impact and, where available, of past experience. Effectiveness also depends on implementing EU policies in a proportionate manner and on taking decisions at the most appropriate level.
5. **Coherence**: Policies and action must be coherent and easily understood. The need for coherence in the Union is increasing: the range of tasks has grown; enlargement will increase diversity; challenges such as climate and demographic change cross the boundaries of the sectoral policies on which the Union has been built; regional and local authorities are increasingly involved in EU policies. Coherence requires political leadership and a strong responsibility on the part of the Institutions to ensure a consistent approach within a complex system.

Each principle is important by itself. But they cannot be achieved through separate actions. Policies can no longer be effective unless they are prepared, implemented and enforced in a more inclusive way.

Source: (Commission of the European Communities, 2001[7]), *European Governance – A White Paper*, https://ec.europa.eu/commission/presscorner/detail/en/DOC_01_10.

Public governance for public sector reform

Governments are increasingly concerned about reforming their capacity and capability to improve their functioning. The philosophy of early 20th century public administration was mainly concerned with the identification of governance and organisational values that could generate stable and lawful standards, suitable choices, effective execution processes and top-down power. Max Weber's classical and ideal type of bureaucracy offers a solution owing to its rational-legal authority, rule-driven methods, lateral division of labour and hierarchical policy-making framework (Martin and Downs, 1969[8]). Whereas Max Weber viewed apoliticism, precision, reliability and efficiency as beneficial inputs to public governance, other scholars regarded bureaucracies as an issue that prevents a dynamic adjustment of the public sector to cultural modifications and circumstances (Martin and Downs, 1969[8]). These scholars that opposed Max Weber asserted that government bureaucracies appear to be more calcified as they grow larger and use more energy and assets for inner co-operation and external border wars, which decreases their capacity to change and respond to contextual modifications (Sørensen and Torfing, 2011[9]).

As a result, efforts to render the public sector more agile, adaptable and accountable have focused on the communication and interactions between the public sector and other stakeholders as a vehicle of public governance. Integrated forms of governance, such as quasi-markets, alliances and networks, are increasingly seen as ways to improve overall efficiency by dismantling traditional bureaucracies. These types of governance can be implemented in a versatile manner, empowering and promoting performance that is evaluated not only in terms of top-down norms but also by bottom-up demand-side requirements. Mobilising stakeholders in the ecosystem is particularly crucial for coping with ambiguity and conflicts in economic and societal changes. Participatory governance provides a means to involve stakeholders with a possibly stronger expertise in these issues and encourage them to contribute to better public outcomes.

Applying public governance to digital government

The challenges of digital transformation

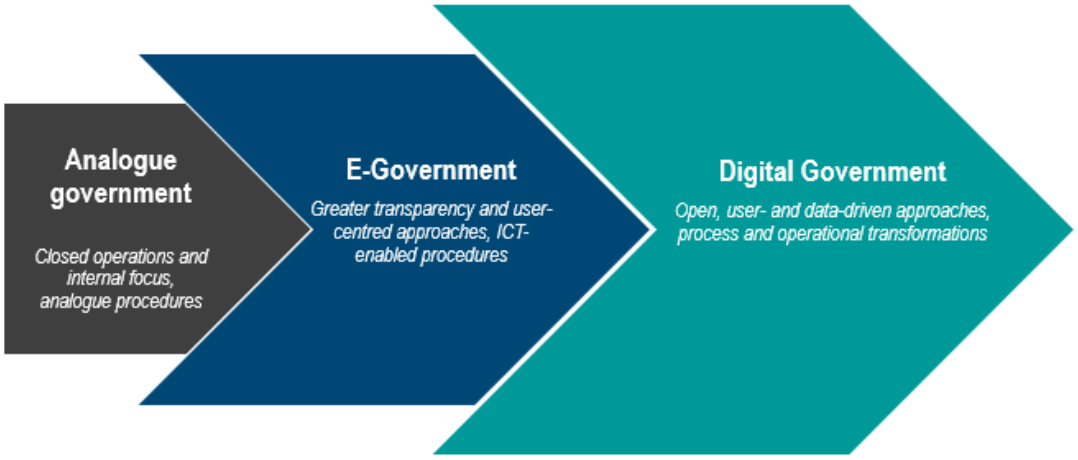
Disruptions in the way people transact, work and interact due to digitalisation and the use of emerging digital technologies such as artificial intelligence (AI), blockchain, the Internet of Things, have brought into question the fundamentals of governance across the public and private sectors. With shifting balance of powers among stakeholders from the public sector, private sector and civil society, the interests of these actors have once again been thrown into competition and conflict (e.g. users vs. advertisers, service providers vs. platform providers, content creators vs. publishers to name a few). The borderless Internet was also until a decade ago largely underregulated by governments across the world. With digital transformation touching every sector of the economy and every segment of society, governments have found themselves in a position of having to intervene to ensure a digital transformation that is human-centred and ensures inclusive, equitable and sustainable outcomes for citizens and businesses alike.

The governance of digitalisation, therefore, requires governments to govern the use of digital tools and data in the public sector and beyond on the one hand, and manage their digital transformation of the public sector with new and adapted governance approaches on the other hand. The scope of the E-Leaders Governance Handbook covers both but focuses more on the governance of the latter. It explores in-depth the forms of governance principles, arrangements and mechanisms that are fit for a digitally-enabled state: one that calls for greater openness, ethics, transparency, privacy, security and integrity on the part of the government; and more integration, participation and co-operation with the wider ecosystem to ensure good public outcomes in the face of systemic challenges.

The importance of governing digital government

The increasing use of information and communication technologies (ICT) in the early 2000s led to the rise of e-government as an integrated and continuous way of providing public services in contrast to what was previously an analogue approach (see Figure 2.1). E-government, which involves “the use [of ICTs], and particularly the Internet, as a tool to achieve better government” (OECD, 2016[10]), implies a modernisation of the functioning of public administrations; administrative procedures such as the collection, processing and exchange of data within or among administrations to provide electronic public services for citizens and businesses. It also enables a faster exchange of information between the administration and other stakeholders, an easier access to information, increased transparency and a reduction in the costs of the administration – thereby becoming more efficient and better meeting expectations.

Figure 2.1. Digital transformation of the public sector



Source: Based on (OECD, 2014[2]), "OECD Recommendation of the Council on Digital Government Strategies".

The transformation from e-government to digital government (see Figure 2.1) came to the forefront of global policy dialogue as governments began to prioritise the use of digital tools and data in internal operations, policy processes and public service provision that meets users' needs at the core. This includes adopting open, data-driven and risk-management approaches that involve stakeholders from the start to the end. Digital government, as such, refers to "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 government actors, non-governmental organisations, businesses, citizens' associations and individuals which supports the production of and access to data, services and content through interactions with the government" (OECD, 2014[2]).

In order to become digitally mature, the right governance frameworks are required to enable a system-wide transformation that concurrently orientates towards meeting the needs of users and building public trust. This means that more than just developing the right capacities and capabilities to optimise the value of digital technologies and data in the public sector. Governments need to have the leadership, foresight, proactiveness, resources, diversity of teams, policy coherence with other reforms, institutional co-ordination and ethics to deliver.

To have a public sector with the right competencies and values for the digital age, the state also needs to fundamentally reinvent itself. Digital transformation is not just about adopting new technologies and techniques. It requires a whole-of-government transformation of institutional governance, job profiles, human resources management, working methods, culture and mindsets (Welby and Tan, forthcoming[11]). Only then can individuals and communities reap the widespread advantages that the digital transformation of the public sector can offer.

Defining public governance in the context of digital government

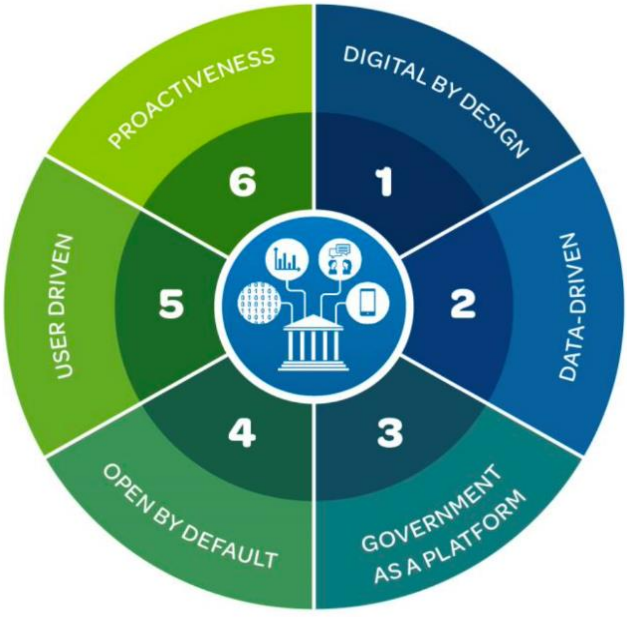
The OECD Recommendation of the Council on Digital Government Strategies (2014) aims to help governments adopt strategic approaches in the use of digital technologies and data, in order to encourage more transparent, inclusive and trustworthy engagements and relationships between government and the people (OECD, 2014[2]). It sets out 12 principles that can be grouped into three main pillars: "Openness and Engagement", "Governance and Co-ordination" and "Capacities to Support Implementation" (see Figure 1.1). According to the Recommendation, the development and implementation of digital government strategies should be conducted in "openness", leveraging stakeholder "engagement and participation", a

"data-driven culture" and "a risk management approach" to security and privacy. Sound digital government reforms should also be supported by "leadership and political commitment to the strategy", the "coherent use of digital technologies across policy areas and levels of government", "effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government" and "international co-operation". Concurrently, the implementation of digital government strategies requires capacities to "develop clear business cases", "manage and monitor" the implementation process, "procure digital technologies", all enabled by "general and sector-specific legal and regulatory frameworks".

Building on these principles in the Recommendation and drawing on the experience of the OECD in analysing countries' digital government transition, the OECD Digital Government Policy Framework was designed to identify key drivers of digital government maturity. The six dimensions of the Framework make up the essential characteristics that the OECD ascertained to be crucial to have an effective design and implementation of digital government strategies (OECD, 2020[12]) (see Figure 2.2):

- **Digital by design**: "Digitalisation" is considered not only as a technical topic, but a mandatory transformative element that is embedded throughout public policy and service processes.
- **Data-driven**: Data are used and managed as key strategic assets in a trustworthy and secure way to generate public value throughout the public policy and service design and delivery cycles.
- **Government as a Platform**: Civil servants are able to focus on meeting the needs of users by working in an ecosystem that leverages shared and integrated tools and resources.
- **Open by default**: Public policy processes, digital tools including algorithms and government data are made available for the public to engage with within the limits of legislation.
- **User-driven**: Users are awarded a central role in shaping and informing public policy and service design and delivery processes, and this is conducted inclusively.
- **Proactiveness**: Civil servants anticipate people's needs individually and collectively and take steps to respond to them rapidly.

Figure 2.2. The OECD Digital Government Policy Framework



Source: (OECD, 2020[12]), "The OECD Digital Government Policy Framework: Six dimensions of a Digital Government", OECD Publishing, Paris, https://doi.org/10.1787/f64fed2a-en.

Taken in the context of the governance of digital government, these six dimensions illustrate what governments should aim towards in order to become a mature digitally-enabled state. Governance serves as the channel through which public sector organisations lead and co-ordinate the transformation of their operations and processes and deliver for citizens and businesses. For instance, digital by design, data-driven and government as a platform approaches should guide digital governments in being in a continuous state of co-ordinating, researching, testing, monitoring and improving their digital government policies and public services. Similarly, open by default, user-driven and proactive approaches should be at the heart of collaborating with all kinds of users, enabling them to express their needs and ensuring that their needs are met. Administrative efficiency and productivity are no longer the ultimate goals of the public sector.

By adhering to these six dimensions, governments can ensure that digital technologies and data are strategically governed to ensure they do not amplify biases nor exclude anyone. Instead, they are used to serve the rapidly changing needs of the economy and to the benefit of a diverse society (OECD, 2019[13]). Such approaches in the governance of digital government reduce the risks in waterfall approaches by taking an iterative and incremental approach to strategising, planning, managing and assessing policies and initiatives, and emphasise on truly designing and delivering public services in response to the needs of people. They can increase the agility and resilience of the public sector in responding to sudden changes in contextual factors (e.g. ruling political party, economic restructuring, societal shifts, new technologies).

In the following chapters, the three governance facets of digital government under the OECD Framework for the Governance of Digital Government will be presented and analysed at the level of their dimensions and sub-dimensions with corresponding country approaches and practices as references (see Figure 1.2). These three facets have been identified based on the discussions by the E-Leaders Task Force on the Governance of Digital Government to be essential for developing a public governance conceptual framework for a mature digital government that is appropriate to the context of countries. Fundamentally, its aim is to guide policy makers to decide on the governance principles, arrangements and mechanisms that can support the development of an equitable, inclusive and sustainable economy and society in which citizens and businesses can confidently put their trust in the government and its institutions.

3 Governance Facet 1: Contextual Factors

Chapter 3 presents key contextual factors under Facet 1 of the OECD Framework on the Governance of Digital Government. They surface important country-specific political and administrative, socio-economic, technological and policy, and environmental characteristics that governments should take into account when designing their policies in order to secure a human-centred, inclusive, equitable and sustainable digital transformation of their public sectors.

The importance of contextual analysis

In this Handbook, contextual factors refers to the characteristics and elements of circumstances in a country that have influence over the governance of digital government. Contextual factors are crucial for governments to understand, analyse and consider in designing a governance framework that best suits the context. It is paramount to take into account the context that will affect the government's capacity and capability to lead, mobilise and co-ordinate efforts through its institutional models (covered in Chapter 4 as Facet 2) and policy levers (covered in Chapter 5 as Facet 3) across policy areas and levels of government. These contextual factors can either be potential barriers or drivers for change and amelioration in the way governments make policies, design and deliver services.

The context can be analysed at a macro-level (i.e. political, administrative, economic, technological, social, cultural, historical, environmental conditions) or a micro-level (i.e. situational). This facet addresses more of the former that is appropriate in informing policy makers on how to optimally align their governance frameworks with the organisational and wider external environment, and consequently, build cohesion and ensure compliance towards intended outcomes.

For a holistic approach, the following four dimensions are considered (see Figure 3.1):

1. Overall Political and Administrative Culture and Structure
2. Socio-Economic Factors
3. Technological and Policy Context
4. Environmental and Geographical Considerations

Figure 3.1. Governance Facet 1: Contextual Factors

The dimensions and sub-dimensions of Facet 1: Contextual Factors

Dimension 1.1 Overall Political and Administrative Culture and Structure

- Sub-Dimension 1.1.1 Power Structure: Federal or Decentralised vs. Decentralised Systems
- Sub-Dimension 1.1.2 Geopolitical Situation and International/Cross-Border Relations
- Sub-Dimension 1.1.3 Political Continuity, Stability and Support for the Digital Transformation Agenda
- Sub-Dimension 1.1.4 Degree of Legalism and Form of Democratic Governance
- Sub-Dimension 1.1.5 Current Legislations and Regulations on Digital Rights Maturity
- Sub-Dimension 1.1.6 Concentration vs. Dispersion of Administrative Functions

Dimension 1.2 Socio-Economic Factors

- Sub-Dimension 1.2.1 Overall Economic Climate
- Sub-Dimension 1.2.2 Maturity of the Private Sector and Digital Industry
- Sub-Dimension 1.2.3 Digital Talent and Skills in the Public Sector and Population
- Sub-Dimension 1.2.4 Level of Public Trust
- Sub-Dimension 1.2.5 Diversity
- Sub-Dimension 1.2.6 Cross-Border Mobility

Dimension 1.3 Technological and Policy Context

- Sub-Dimension 1.3.1 Coverage and Level of Development of ICT/Digital Infrastructures
- Sub-Dimension 1.3.2 Technological/E-Government Heritage and/or Legacy within the Public Sector
- Sub-Dimension 1.3.3 Integration of ICT/Digital into Governance and Business Processes
- Sub-Dimension 1.3.4 Government-Specific Technological Innovations

Dimension 1.4 Environmental and Geographical Considerations

- Sub-Dimension 1.4.1 Local/Regional Variances
- Sub-Dimension 1.4.2 Environmental and Geological Risks and Hazards
- Sub-Dimension 1.4.3 Priority for Environmental Protection and the Green Transition

Source: Author.

As this Handbook is intended to enable a (self-)assessment of the governance of digital government and contextual factors are often beyond the control of the government to change, the presentation of *Facet 1: Contextual Factors* will take a different approach from *Facet 2: Institutional Models* and *Facet 3: Policy Levers*. Implications on governance, policy questions and examples of governance approaches will only be presented under each sub-dimension of *Facet 1: Contextual Factors*, instead of possible scenarios like in *Facet 2: Institutional Models* and *Facet 3: Policy Levers*.

Dimension 1.1 Overall Political and Administrative Culture and Structure

Dimension 1.1 Overall Political and Administrative Culture and Structure takes into account the political and administrative features of the country and the government. This includes the following sub-dimensions: *the organisation of powers in the administrative system* and *the three branches of government* (i.e. legislative, executive, judicial); how the public administration manages its foreign and internal affairs such as the electoral system, regulatory making, which have fundamental influence over the governance of digital government. Institutional features will be covered in *Facet 2: Institutional Models*.

Sub-Dimension 1.1.1 Power Structure: Federal or Decentralised vs. Centralised Systems

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.1.1 Power Structure: Federal or Decentralised vs. Centralised Systems** refers to how political and administrative power is organised in the government. This macro power structure influences how the public administration is run across all policy areas, including digital government and data. This power can either be federal/ decentralised or centralised, which has implications on the governance of digital government and the chain of accountability – how much jurisdiction and power do public sector organisations, the leadership and civil servants possess and relate to each other on the digital government and data agenda. A federal or decentralised system grants considerable power and capability to state, regional and local public sector organisations, resulting in higher levels of autonomy for administrative decision-making at sub-national levels of government. A centralised system holds the power in the central national government, ensuring a coherent definition and uptake of common policy instruments – including legislations and regulations – with regional and local public sector organisations having minimal autonomy. Under a federal or decentralised power structure, there is a permanent and challenging need for high consensus, alignment and co-ordination among the relevant public sector organisations on the adoption of technologies, which may result in a lack of policy coherence and technological standardisation. Yet, public sector organisations leading the digital government agenda at the state, regional or local level have the independence and ownership to lead digital transformation in their jurisdiction, which could be beneficial. Under a centralised power structure, the central government's leading public sector organisation could better be able to produce a coherent digital government strategy, co-ordinate its implementation and align it with relevant policies, programmes, initiatives and actions across the public sector according to the power it is endowed with across jurisdictions.	
Policy Questions	For a federal or decentralised power structure, • Is the level of digital government advancement consistent and homogenous across the country? • Does the leading public sector organisation(s) on digital government have sufficient mandate and capability to co-ordinate and align policies, programmes and actions across the country while acknowledging and respecting the autonomy at the state, regional or local levels? • How can consensus, alignment and co-ordination be built across the public	For a centralised power structure, • Is the central government's leading public sector organisation effectively leveraging its power to extensively influence and implement digital government policies at the regional and local levels? • What can be done to improve the varying levels of economic and social development in the country through digital government policies? • Does the central government public sector organisation well understand

	sector on the development of digital government maturity? • What can be done to improve the varying levels of economic and social development in the country because of differences in digital government policies? • Which policy levers could help to reduce regional and local differences and enable coherence?	the circumstances and needs at the regional and local levels? • Does the leading public sector organisation at the central level provide sufficient autonomy and resources to the public sector organisations at the local level to innovate and advance on their digital government? • How can the leading public sector organisation encourage greater interaction and contribution from the regional and local public sector organisations on the design and implementation of the digital government strategy?
Approaches	• **Germany** has a decentralised power structure, as a federation composed of 16 federal states or Bundesländer, each with its constitution, parliament and government. Three of the Länder are city-states: Hamburg, Bremen and Berlin. As a result of this power structure, the German federal government's capacity to influence digital government implementation can be particularly challenging across the territory, given the level of autonomy of the federal states. Results of the OECD Digital Government Index 2019 demonstrated that Germany performed less than average on having a holistic strategic approach towards digital and data-driven policies for the public sector (OECD, 2020[14]). The German government aims to digitalise 575 public services by 2022, however the co-ordination of modernisation efforts across federal, state and municipal public administrations are still challenged by complicated approaches to decisions and implementation, delays in support for policy developments and lack of investments necessary (Mergel, 2021[15]). • **Austria** has a federal system comprising nine autonomous federal provinces. The executive and legislative powers are shared by the federal and provincial governments (Republic of Austria Parliament, n.d.[16]). With the aim of making Austria a leading digital nation, the federal government produced the "Digital Austria" initiative to consolidate the country-wide digitalisation efforts across the public administration, economy and society towards guaranteeing and improving prosperity, job opportunities and the quality of life in the long term (Federal Ministry of Digital and Economic Affairs, n.d.[17]). Prioritising the digitalisation agenda has allowed the federal government to build consensus on the importance of digitalising to achieve economic, social and national objectives, and launch digital projects successfully such as digital identity, "once-only", digital skills and Broadband Austria 2030 (Digital Austria, n.d.[18]). • **Japan** has a strongly centralised system as a constitutional monarchy in which the power of the emperor is concentrated to his ceremonial functions. The government has three branches: executive, legislature, judiciary. It is a unitary state, containing 47 administrative divisions. The Japanese centralised administration favours efficient and coherent digital government policies. For over 20 years, the Japanese government has been promoting the government-wide use of electronic and digital technologies through public administration reform, including creating user-friendly public services from national to local governments. In 2000, the IT Strategic Headquarters was established to comprehensively promote information technology adoption throughout country. It is chaired by the Prime Minister and joined by the Government Chief Information Office, Ministers and Director-General from	

	across 23 ministries and agencies (Prime Minister of Japan & His Cabinet, n.d.[19]). In 2013, the government of Japan created through a new law: the position of a Government Chief Information Officer and the Specialised Committee on IT Strategy Promotion that they lead, to strengthen the leadership and co-ordination of ICT policy and e-government initiatives. In 2014, the Ministers' Council on e-Government led by the Chief Cabinet Secretary (OECD, n.d.[20]). In 2021, a new Digital Agency was established to promote future-oriented digital transformation of the public sector and society, with a vision of being a government as a service and a government as a start-up (Digital Agency, n.d.[21]). Digitalisation efforts are heavily centralised to ensure policy coherence in digitalisation. • **Estonia** has a centralised power structure, as a parliamentary representative democratic republic with the Prime Minister as the head of government. The country is divided into 15 counties and the central government benefits from extensive executive power across the territory, favouring efficient and coherent digital government policies. The country's digital strategy is unique: its architecture is largely centralised, but its approach is decentralised. To work with agility, one of the principles of Estonian e-governance is decentralisation. This has allowed the country to be the first in the world to interconnect decentralised components of state and public sector databases at a national level through a core data exchange infrastructure, X-Road Europe, supported by a solid robust data governance framework that enables integration and interoperability across the data systems (e-Estonia.com, n.d.[22]).

Sub-Dimension 1.1.2 Geopolitical Situation and International/Cross-Border Relations

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.1.2 Geopolitical Situation and International/Cross-Border Relations** refers to the overall context defining how a country manages its foreign relations and matters, including trade agreements, customs and border control, immigration policy, cross-border data policies, defence and security matters to name a few, and the nature of the situation that enables or impedes the movement of goods, services, data, capital and persons. In a geopolitical situation that is stable, open and adhering to the rule of law, the government is better able to lead, design and develop national digital government strategies that are oriented towards achieving economic and social development outcomes. In a geopolitical situation that is complex and characterised by uncertainties, instability and challenge to the rule of law, the government may have additional obstacles to lead, design and develop national digital government strategies.	
Policy Questions	In a stable, open and rules-based geopolitical situation, • How is the political and administrative leadership taking advantage of (or taking into account) the geopolitical situation to advance a national digital government strategy targeting economic and societal well-being? • Is the approach to international digital co-operation and co-ordination focused on the cross-border needs of citizens and businesses?	In a complex, unstable and non-rules-based geopolitical situation, • Can the national digital government strategy prioritise citizen-driven economic and social development outcomes through adequate digital security and data protection measures? • Are there opportunities to foster international digital co-operation and co-ordination? • Is there an adequate level of awareness on the challenges of

	• Does the government still prioritise digital defence and cyber security as part of the national digital government strategy? • What other social, economic, political or health threats and possible shocks need to be addressed to build a strong digital security and resilient culture across the public sector?	digital geopolitical risks and the will to mitigate them? • How can the government be more inclusive in involving the private sector and civil society to support the development of a digital security culture across the economy and society strongly embedded in digital rights?
Approaches	• The **European Union** (EU) aims to enable the free movement of goods, services, capital and persons in the single internal market by removing technical, legal and bureaucratic barriers, for citizens to trade and do business with ease. As part of the digitalisation agenda, the EU adopted the Digital Single Market Strategy for Europe in 2015 to strengthen its digital connectivity, government, economy and society – which required the alignment and co-ordination of digitalisation strategies, standards and guidelines across EU Member States (EUR-Lex, 2015[23]). The EU eGovernment Action Plans (2006-2010; 2011-2015; 2016-2020) have been a key pillar in enabling the success of the digital single market through the modernisation and development of cross-border, effective, efficient and interactive digital public services (European Commission, n.d.[24]). • The **Asia-Pacific Economic Co-operation** (APEC) is a regional economic forum that aims to create prosperity by accelerating regional economic integration among its 21 member states. In 2019, it produced the APEC Framework for Securing the Digital Economy to address the risk and opportunities in e-commerce and digital trade in the Asia-Pacific region. It contains non-binding principles and recommendations for policy and regulatory frameworks for digital security risk management; economy strategies; resilient critical information infrastructure; collaboration; digital use empowerment; digital security technologies for trust; and personal data security (APEC, 2019[25]). • The **Network of e-Government Leaders of Latin America and the Caribbean** (Red GEALC) is an inter-American forum for digital government senior officials. Organised since 2003 with the support of the Organisation of American States (OAS) and the Inter-American Development Bank (IDB), the Red GEALC fosters multilateral co-operation to identify and address common digital government challenges across Latin American and Caribbean countries. It comprises a vast set of activities, including annual meetings, working groups, training activities, and recently co-operation activities to address cross-border challenges, such as a regional digital signature framework (Red GEALC, n.d.[26]).	

Sub-Dimension 1.1.3 Political Continuity, Stability and Support for the Digital Transformation Agenda

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.1.3 Political Continuity, Stability and Support for the Digital Transformation Agenda** refers to a government's capacity and capability to govern sustainably and embrace long-term political priorities in becoming a mature digitally-enabled state. It involves an analysis of how political continuity and stability are influenced by various other political, economic, social and environmental circumstances. The digital transformation agenda includes the digital government agenda, which considers the degree of political support given by the elected government to the advancement of digital transformation of the public sector. The 5th principle of the Recommendation of the Council on Digital Government Strategies (2014) calls for secure leadership and political

<table>
<tr><td></td><td colspan="2">commitment to the strategy “through a combination of efforts aimed to promote inter-ministerial co-ordination and collaboration, set priorities and facilitate engagement and co-ordination of relevant agencies across levels of government in pursuing the digital government agenda” (OECD, 2014[2]).

A government that experiences political continuity and stability is better able to advance on the development and implementation of digital government policies with a long-term sustainable perspective. Furthermore, strong support from the elected government on the digital transformation agenda typically translates into greater availability of resources dedicated to digital government initiatives, co-ordination and implementation effectiveness across the public sector, which results in a faster and more coherent advancement of digital government maturity. A government that experiences political interruption and instability is less able to institutionalise digital government and to foster cross-partisan legitimacy and ownership to advance sustainably on the development and implementation of digital government policies. Weak or fragmented support from the elected government on the digital transformation agenda could translate into less availability of resources dedicated to digital government initiatives, co-ordination and implementation effectiveness across the public sector, which results in a slower and less coherent advancement of the digital government maturity.</td></tr>
<tr><td>Policy Questions</td><td>With political continuity, stability and strong support for the digital transformation agenda,
Is there a clearly recognised leading public sector organisation in charge of the public sector digital transformation agenda?
Does the government have governance arrangements and mechanisms in place to guarantee political commitment and delivery on digital government policies?
Are there risk management safeguards in place in case of unforeseen changes in the political environment that influence digital government plans?
How strong is the digital government ecosystem in terms of capability, resources, infrastructure and architecture?
Is the public sector digital transformation agenda oriented towards people-driven economic and social development outcomes?</td><td>With political interruption, instability and weak support for the digital transformation agenda,
What is impeding the government from supporting the public sector digital transformation agenda: the unstable political situation, the lack of awareness, the lack of skills, the lack of resources, other policy priorities?
What mechanisms can be implemented to create and incentivise a consensus among key stakeholders in the digital government ecosystem so that the digital transformation of the public sector is recognised as a cross-partisan political priority?
What can be done to improve both the political and administrative leadership responsible for digital government to secure the necessary support from the government?
Can the government focus on the institutionalisation of digital government policies to have a long-lasting impact, such as the deployment and adoption of key enablers, or the development of digital skills and infrastructure?</td></tr>
<tr><td>Approaches</td><td colspan="2">Switzerland is known for its political continuity and stability and consensus-based political culture. Its federal structure generates an interdependence between state departments, resulting in a stable government that favours policy implementation over political lifecycles.</td></tr>
</table>

	Over the past 10 years, the Swiss Confederation, cantons and communes have been strategising, planning and delivering on the digitalisation of government services with the mission of being "digital first" in the areas of interaction and participation, services and infrastructure, organisation and legal framework, trust and knowledge (egovernment.ch, n.d.[27]). • **Lebanon** has been experiencing significant political discontinuity and instability since the end of 2019 due to civil protests, accusations of corruption and challenging economic prospects. Yet, the government strongly recognises the importance and untapped potential of digitalisation. In recent years, in spite of the political, administrative and societal challenges, the Office of the Minister of State for Administrative Reform has been committed to supporting ministries to drive the digital transformation of the public sector and laying the foundations for enablers based on a strategy and action plan for 2020 to 2030 (OECD, 2020[28]). • **Panama** has expressed strong government commitment to the digitalisation of its economy, society and public sector over the past decade. The National Authority for Government Innovation benefits from high political support and cross-cutting recognition of its mandate and activities. It has a positive administrative environment that favours its co-ordination role across the public sector to promote digital transformation approaches with expected impacts on the efficiency of the administration, on the levels of trust of the citizens in the government and on the societal well-being of the population (OECD, 2019[13]).

Sub-Dimension 1.1.4 Degree of Legalism and Form of Democratic Governance

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.1.4 Degree of Legalism and Form of Democratic Governance** refers to (i) how legalistic is the legislative system, which is the legal grounds of a country, namely the common law or the civil law system and (ii) form of democratic governance, namely a presidential or parliamentary system. The constitutional design of democratic governance determines the separation of powers and influences the efficiency of law making and decision making in the country. (i) The common law system relies on a body of law based on legal precedents that derive from judicial decisions of the courts and tribunals. The civil law system relies on a referable and codified body of law, such as a civil code that is fixed and highly developed. The degree of legalism influences the extent to which the executive and legislature has the power and capability to introduce draft law or make changes to the existing body of law. In a country with a highly legalistic system, the government could face more obstacles to innovate and secure policy agility in the digitalisation of the public sector. At the same time, the governance of digital government is typically stronger as it has a robust legal foundation that requires compliance and adherence. In a country with a less or non-legalistic system, the government could have fewer legal constraints to innovate and is better able to possess policy agility in the digitalisation of the public sector through consensus-based approaches. At the same time, the governance of digital government may be slightly challenged in institutional commitment and co-ordination across the public sector to achieve desired outcomes. (ii) In a presidential system, the head of state is also the head of government and the executive has a separate democratic legitimacy from the legislature. Political and administrative powers are shared between the executive and legislative branches. In a parliamentary system, the head of state is separate from the head of government and the executive derives democratic legitimacy from the legislature and is held accountable to the parliament. In a hybrid system, the head of state and the

<table>
<tr><td></td><td colspan="2">head of government are separately elected, and the latter is accountable to both the head of state and the parliament. The form of democratic governance determines the efficiency of the legislative process.

The parliamentary system tends to see higher co-operation between the executive and legislature and greater efficacy in setting a strategy and implementing the policy. The efficacy of the legislature in the legislative process depends on many factors in the presidential system, such as whether the executive and legislature are of the same party, the limitations on the legislature imposed by the president. Policy making for digitalisation necessitates greater agility, openness, innovation, responsiveness and anticipation – which calls for co-operation between the executive and legislative branches and efficiency in the policy making process.</td></tr>
<tr><td>Policy Questions</td><td>In a country with a highly legalistic system and/or a complex legislative process,
Does the body of law provide a good allowance of innovation and policy agility in digital government? Are legal obstacles for agile digital government policies regularly identified and systemically removed?
Does the centralised administration ensure that there is a good amount of commitment and co-ordination on digital government policies in the public sector and empower other levels of government through a fair distribution of power and capability?
Are the executive and legislative powers able to agree on the priority for digitalisation and the direction to take for digital policies? Is the political support from both branches sufficient to advance on digital policies?</td><td>In a country with a less or non-legalistic system and/or a less complex legislative process,
Does the public sector culture enable and encourage a fair amount of innovation and policy agility in digital government?
Does the public administration have in place the necessary institutional models and policy levers to guarantee strong commitment and co-ordination on digital government policies?
Are there sufficient checks and balances, parliamentary debates and regulatory safeguards to ensure that there is no undue influence of interests from the executive, the legislature or private sector stakeholders in the legislative process for digital government policies?</td></tr>
<tr><td>Approaches</td><td colspan="2">The Anglo-American common law system is an administrative tradition that is based on liberal philosophies and an instrumental conception of the state (Thompson, 1931[29]). This non-legalistic and decentralised culture and structure can favour experimentation approaches that support digital government development.
France’s civil law system is based on the principle of legality that is rooted in the Roman tradition and statutory law from the Napoleonian era – as with other Napoleonic countries like Belgium, Italy, Portugal, Spain. The rules of the law are highly codified, the administrative justice system is highly developed and the administrative system is centralised with a deep-rooted political culture where the role of the central state and its centralised administration is dominant and generally accepted (Garner, 1924[30]). Legalistic approaches for digital government development can be a challenge for the necessary policy agility in a digital transformative context.</td></tr>
</table>

Sub-Dimension 1.1.5 Current Legislations and Regulations on Digital Rights Maturity

<table>
<tr><td>Importance and Implications of the Governance of Digital Government</td><td colspan="2">Sub-Dimension 1.1.5 Current Legislations and Regulations on Digital Rights Maturity refers to the level of digital rights maturity in a country. The 2019 OECD report on “The Path to Becoming a Data-Driven Public Sector” sets out a framework that classifies digital rights into the first, second and third generation (OECD, 2019[31]):
1. The first generation is a group of fundamental and essential rights such as personal data protection, cyber security, digital inclusion and digital communication with the public sector.
2. The second generation is a group of rights such as multi-channel delivery, digital identity, transparency, open data, open source, participation and collaboration, which arose due to the rapid adoption of technologies.
3. The third generation is a group of rights that should be met by digitally mature governments such as omni-channel and proactive delivery, once-only principle, open algorithms, ethical use of data and artificial intelligence (AI) tools, and data ownership and management.

Governments that have people-centred and/or people-driven legislations and regulations that are comprehensive, updated and in line with technological developments are typically more mature in securing digital rights. Securing the proper legal and regulatory safeguards to protect existing and emerging digital rights is more than ever important in the aftermath of the COVID-19 pandemic as the digitalisation of economies, societies and public sectors is advancing at an unprecedented speed.</td></tr>
<tr><td>Policy Questions</td><td>Where there are numerous legislations and regulations protecting digital rights,
• Have the legislations and regulations resulted in tangible economic and social development outcomes and are the outcomes measured?
• Does the legislative and regulatory process support a strategic, forward-looking and innovative approach in responding to and encouraging the adoption of new digital technologies?</td><td>Where there are few legislations and regulations protecting digital rights,
• What is impeding the government from creating legislations and regulations to protect digital rights: the lack of skills, the lack of political prioritisation or the lack of awareness?
• Can the government encourage greater civic participation and collaboration in the development of digital rights regulation?</td></tr>
<tr><td>Approaches</td><td colspan="2">• Spain enshrined the right to communicate with public sector organisations by electronic media and set out the legal framework for electronic administration when the Spanish Parliament passed the Law 11/2007 of 22 June, Citizens’ Electronic Access to Public Services. It also outlined the electronic management of procedures and co-operation among administrative bodies to enable electronic administration. 2009 was the end of the deadline for public services to comply with these provisions. The law played a pivotal role in pushing for e-government development in Spain and clearing the path for progressive work in this area. It was followed by new laws and royal decrees widening its scope to encompass the promotion of digital communication and procedures across all areas of government (OECD, 2013[32]).
• Korea addresses the rights of privacy and transparency through requiring the Personal Information Protection Commission to establish a master plan every three years by law – to ensure the protection of personal information and the rights and interests of data subjects. The heads of central administrative agencies must establish and execute an implementation plan to protect personal information each year in accordance with the master plan. Any</td></tr>
</table>

	changes to policy, systems or statutes requires an assessment of the possibilities of data breaches, which are then openly published (OECD, 2019[31]).

Sub-Dimension 1.1.6 Concentration vs. Dispersion of Administrative Functions

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.1.6 Concentration vs. Dispersion of Administrative Functions** builds on *Sub-Dimension 1.1.1 Power Structure: Federal or Decentralised vs. Centralised Systems*. It refers to the administrative relations and hierarchy within and between the public sector organisation-in-charge for digital government and other public sector organisations in the digital government ecosystem. It also takes into consideration the position and mandate of the highest-ranking administrative officers responsible for the digital government and data agendas among these public sector organisations in the ecosystem. For the specific type of institutional set-up (i.e. centre of government, co-ordinating/line ministry) and approach (i.e. digital transformation agency, centralised co-ordination or decentralised co-ordination), see *Sub-Dimension 2.1.1 Institutional Set-Up of the Organisation-in-Charge* and *Sub-Dimension 2.1.2 Institutional Approach to Digital Government*. Governments can use the administrative structure as a way to advance the maturity of the digital government. Public sector organisations with a high concentration of functions may possess a greater capacity and capability to advance the digital government agenda due to synergies from vertical and horizontal integration. Public sector organisations with a higher dispersion of functions will require stronger co-ordination of the digital government policies and programmes in their design, consultation and implementation processes.	
Policy Questions	Where there is a concentration of administrative functions, • Are the functions well-organised and co-ordinated such that the public sector organisations driving the digital government agenda are agile, efficient and effective in achieving their objectives? • How can the leading public sector organisation on digital government further leverage and develop the synergies from vertical and horizontal integration in the context of attaining people-driven policy outcomes?	Where there is a dispersion of administrative functions, • Do the relevant public sector organisations have formal co-ordination and collaboration mechanisms or incentives such that there is a clear division or sharing of accountability and responsibilities? • Would it be helpful to integrate or merge some functions in the leading public sector organisation on digital government in order to strengthen its capacity and capability to design and implement initiatives?
Approaches	• **Portugal**'s organisation-in-charge responsible for promoting and developing administrative modernisation, the Administrative Modernisation Agency (AMA), has concentrated multiple functions in three areas: public service delivery, digital transformation and administrative simplification. It also overlooks the various levels of government by promoting central, regional and local policies on information society, in consultation with other entities with responsibilities in the information society (AMA, n.d.[33]). The AMA also manages an administrative modernisation funding programme called SAMA2020 that supports national and local public sector organisations in developing initiatives and projects in these three policy areas (OECD, 2019[13]).	

Dimension 1.2 Socio-Economic Factors

Dimension 1.2 Socio-Economic Factors covers key economic and social contextual factors such as the economic outlook of the country and various indicators of economic and social development that have fundamental influence over the governance of digital government.

Sub-Dimension 1.2.1 Overall Economic Climate

<table>
<tr><td>Importance and Implications of the Governance of Digital Government</td><td colspan="2">Sub-Dimension 1.2.1 Overall Economic Climate refers to the current and prospective economic conditions of the country and the world, which influences the political priorities of the government and its budget allowance and allocation. Digitalisation of the government, economy and society presents numerous financial and non-financial benefits when guided and managed properly towards intended economic and social development objectives, such as increasing productivity, connecting people and objects for greater efficiency and equipping citizens with skills for the future.

A positive economic climate could enable and incentivise the government to allocate more budget to the digitalisation agenda based on long-term economic and social development goals. A dampened economic climate could limit the government in allocating budget to the digitalisation per se. However, in some cases, it could instead compel the government to be strategic in allocating budget to specific digitalisation policies that can improve economic and social outcomes.</td></tr>
<tr><td>Policy Questions</td><td>In a positive economic climate,
How can the country's economic growth and development be made more equitable, inclusive and sustainable by combining the public sector digital transformation strategy with a robust ecological transition and involvement from the national, regional and local levels?
Are the policies, industries, services and jobs future-ready and resilient to changes in the global economy or advancements in digital technologies?
Is the digital government agenda shaping the interfaces with economic and market actors to foster a values-based digital economy and society?</td><td>In a dampened economic climate,
Can the government make a strong economic and financial case for allocating budget to strategic public sector digitalisation policies that are intended to spark economic growth and development through innovation, entrepreneurship, public-private partnerships?
Can the digital government policies be aligned, co-ordinated with economic and social policies and incentivised towards improving business outlook and citizen well-being?
Are the digital governments policies aligned with United Nations Sustainable Development Goals?</td></tr>
<tr><td>Approaches</td><td colspan="2">Greece faced a long recession following the global financial crisis of 2007-2008, resulting in the need to receive financial assistance from the Euro area member countries and the International Monetary Fund (European Court of Auditors, 2017[34]). During these years, the promotion of the investment, adoption, diffusion and use of advanced ICT/digital tools in the public sector was not one of the top priorities for the government. With the Greek economy returning to financial normalcy after it successfully exited its third and final bailout programme in 2018 (Foreign Policy, 2020[35]), the government reprioritised the digitalisation of the public sector, economy and society in its national strategy for growth. The reform and establishment of the Ministry of Digital Governance over 2016 to 2019 signals the</td></tr>
</table>

	commitment to have a co-ordinated and coherent approach to digitalisation of the public sector (Ministry of Digital Governance, n.d.[36]). • **New Zealand** was among the handful of countries to have recovered from the economic downturn caused by the COVID-19 pandemic rapidly due to its early and strong response. As part of its COVID-19 Response and Recovery Fund (CRRF), digitalisation and digital initiatives featured heavily across public services for businesses, innovative approaches to policy and service design and delivery, digital infrastructure for the use of digital tools in procurement and digital commerce (Robertson, 2020[37]). As part of the 2021 budget, the government has also committed to investing strongly in education, skills and training, such as a digital skills programme, to enable citizens and businesses to succeed in the digital environment (Grant Thornton, 2021[38]).

Sub-Dimension 1.2.2 Maturity of the Private Sector and Digital Industry

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.2.2 Maturity of the Private Sector and Digital Industry** is an indicator of the capacity and capability of businesses to advance the country's economic development and digital economy through the creation and provision of better products and services, with fair protection of intellectual property and data, openness and healthy relations with the public sector, civil society, labour unions and professional organisations. High (digital) inclusion, productivity, competitiveness and innovation point towards maturity. Participation of digital businesses of all sizes, especially small and medium enterprises, also indicate a healthy digital industry and GovTech ecosystem. Countries with a mature private sector and digital industry can better complement and support the government's implementation of digital government policies, and foster the development of an agile, transparent, transformative and responsive public sector. Governments could tap on the resources of the private sector through procuring of ICT/digital technologies and services, evaluating the potential public-private partnerships and devising digitalisation policies that increase inclusion, productivity, competitiveness and innovation in the digital government and GovTech ecosystem. Countries with a less mature private sector and digital industry could face challenges in the government's implementation of the digital government policies as the economic and market conditions do not encourage agility, transparency, transformation and responsiveness. Governments should focus on developing the private sector and prioritise policies that increase inclusion, productivity, competitiveness and innovation in the digital government and GovTech ecosystem.	
Policy Questions	Where the private sector and digital industry are relatively mature, • Does the government have the support of the private sector stakeholders in the implementation of the digital government agenda? • Does the government have a strong relationship with all kinds of digital technology players in the private sector through exchanges and collaborations on digital and data issues to ensure inclusion, from micro, small and medium enterprises to big corporations?	Where the private sector and digital industry are less mature, • How can the government incentivise the development of a digital government ecosystem involving stakeholders from the public sector, private sector and civil society that facilitates the sharing of knowledge, skills and data towards the creation and provision of better products and services? • Can the government use digital government policies to spark digital

	• How can the government deepen its collaboration with the private sector in advancing the digital government agenda such as procuring and co-creating solutions, sharing and re-using open data and holding innovation competitions in strategic sectors of the digital industry?	adoption, competition and collaboration throughout the digital government ecosystem? • Are the benefits of public sector digitalisation apparent for the regions and local areas? • Can the government focus efforts on digital government policies in regions and local areas that are lagging behind in terms of digital development: education, training, business and financial support, infrastructure?
Approaches	• In **Estonia**, the uptake of digital identity solutions benefitted mainly from the private sector's B2B (business-to-business) and B2C (business-to-consumer) transactions, not government services. The private sector's activities were so significant that this contributed to 2% of the national GDP (gross domestic product) in 2018. The experience of the Estonian government demonstrates the importance of creating the conditions to enable partnerships (i.e. a model for interoperability to make the digital identity usable for any service) with the private sector to push for the widespread adoption of digital identity by citizens (OECD, 2019[39]). • The **United Kingdom** has a high level of e-commerce adoption in its economy and has one of the largest e-commerce revenue in Europe (Statista, 2019[40]). This indicates the prevalence of Internet activity and reflects the maturity of the country's e-banking and e-payment systems, and the citizens' preferences and habits in relation to privacy, security and consumer protection for online transactions. The government has leveraged the digital maturity of its population to continuously develop an ambitious digital government agenda. The Government Digital Service adopted the use of common platforms in an open format to promote digitalisation of the public sector and wider ecosystem such as GOV.UK Notify, Pay, Platform as a Service and the Digital Marketplace. Other public sector organisations can easily integrate these Government as a Platform products into their services (GOV.UK, n.d.[41]).	

Sub-Dimension 1.2.3 Digital Talent and Skills in the Public Sector and Population

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.2.3 Digital Talent and Skills in the Public Sector and Population** is a core contextual factor that should be accounted for in the advancement of digital government. A good level of digital skills in the public sector makes up a digitally competent, agile and prepared public workforce that can seize opportunities arising from digital technologies and data, innovate and implement digital government policies and programmes effectively. This also makes the government digitally resilient in driving the adoption of technology, rather than relying on external contracts or tenders. In line with the OECD Framework for Digital Talent and Skills in the Public sector, governments should create a work environment to encourage digital transformation, foster skills to support digital government maturity, and maintain a digital workforce (OECD, 2021[42]). These skills include, for instance, digital government user skills (e.g. understanding users and their needs, collaboration for iterative delivery), digital government socio-emotional skills (e.g. vision, analysis, agility), digital government professional digital skills (e.g. programming, web or app development and data analytics), and digital government leadership skills. Governments should also prioritise the

	inclusiveness and diversity of talent, to ensure fair representative of the population in the civil service and that the various segments of the population are truly understood and catered to (Welby and Tan, forthcoming[11]). Finally, digital leadership is crucial in gathering support in the digital government ecosystem, ensuring co-ordination and alignment with political priorities. The level of digital skills in the population is also a critical factor to take into account to ensure that the needs of people can still be met in the digital age. When a country advances in digital transformation, the access to the Internet, digital technologies, opportunities, resources and outcomes will not be distributed equitably without the necessary government intervention. For instance, the national, regional and local governments could have varying levels of digitalisation and consequently, citizens and businesses in proximity also enjoy different spillover benefits. Urban areas tend to enjoy higher connectivity and access than suburban and rural areas. To ensure that the digital transformation of the public sector is equitable, inclusive and sustainable, governments need to also invest in building up the digital skills of the population, which are also known as the 21st century skills. In countries where there are relatively uniform and high levels of digital skills in the population, the government should reinforce this strength by deepening public participation to create a collaborative, people-driven and user-driven culture for innovating, developing and delivering public services – while still reaching out to civil servants and people who fall behind. In countries where there are huge variations in the levels of digitalisation in the population, the government should prioritise closing this digital divide through targeted education, training and outreach programmes, followed by measuring and monitoring the outcomes towards an equitable, inclusive and sustainable development.	
Policy Questions	With a relatively uniform and good level of digital skills in the public sector and population, • Is there equal emphasis and importance placed on the different types of digital talent and skills? • What steps have been taken to ensure that there is diversity (e.g. gender, age, ethnicity, class, discipline) among the digital and data public sector workforce? • Do the adoption of digital skills development schemes and monitoring tools translate tangibly into advancing the progress of digital government and delivering value to citizens? • Does the government provide information, consult and engage with the public to source ideas and co-create solutions through digital tools and open government data through the policy cycle and service design and delivery? • Does the government have in place appropriate policies to ensure that an equitable distribution of digital opportunities and benefits can be sustained and continuously reviews them?	With a relatively varied and low level of digital skills in the public sector and population, • What are the key digital skills gaps and is there already a common definition and understanding of the digital skills needs? • Can the government reform its education and training programmes, compensation and benefits packages in order to groom, attract, hire, retain and grow a pool of digital professionals with a good level of skills? • Can the government utilise governance arrangements such as organisational leadership or legal and regulatory frameworks to push for digital skills development? • Can the government focus efforts to increase the access to digital development opportunities through education, training and outreach programmes and encourage the use of (digital) public services for segments of the population that have lower levels of digital skills?

		• Are public services being provided through omni-channel approaches (i.e. the user journey can be completed across all channels, digital and non-digital, seamlessly and at the user's convenience), and foreseeing, for instance, the need for assisted service delivery?
Approaches	• The **United Kingdom** has a strong commitment to continuously promote digital skills in the public sector and secure competitiveness, capacities and capabilities in the public workforce. The Digital, Data and Technology Profession Capability Framework describes the roles of such professions to help civil servants and the public understand the required skills for specific jobs and work on career progression (GOV.UK, n.d.[43]). The Government Digital Service Academy offers digital skills training courses for both specialised and non-specialised professionals such as user research and design, digital and agile awareness (GOV.UK, n.d.[44]). • **Portugal's** Administrative Modernisation Agency (AMA) created Citizen Spot, a face-to-face point of assistance that combines digital services from different public sector organisations into in a single helpdesk with the assistance of a trained mediator. This model of digital and in-person service delivery presented a high level of potential for digital inclusion of citizens who are less digitally literate and reflects the level of priority given by the Portuguese government to overcome the digital divide while making progress in modernising digital government services. There are now more than 630 Citizen Spots in Portugal with more than 230 different public services, installed in Citizen Shops and local administrative service points, and it is a constantly expanding network (AMA, n.d.[45]).	

Sub-Dimension 1.2.4 Level of Public Trust

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.2.4 Level of Public Trust** is an important contextual factor that plays into the efficiency and effectiveness of public governance. It hinges on how power is exercised and how access to power is organised, and consequently determines the relations between the government and the public or other major stakeholders in the digital government ecosystem. In the context of rapidly-developing technology and a complex global environment, it is crucial for governments to have the trust of the public in developing policies and regulations that can protect the social good including citizens' rights and interests. Key to building and maintaining public trust is improving the experiences and interactions that people have with the government: believing that the public sector organisations have the competence (i.e. are responsive and reliable) to fulfil their mandates and act in pursuit of the broader benefit of society with fundamental values (i.e. integrity, openness, fairness) (OECD, 2017[5]). This implies providing user-driven, inclusive and quality public services; assessing and meeting citizens' needs; managing various forms of uncertainty, the ethical use of power and public resources; engaging in clear and timely public communication; and enabling open and meaningful stakeholder participation (OECD, 2017[5]). With high levels of public trust, the government can better develop digital government policies with the support of the ecosystem to see through their implementation. With low levels of public trust, the

	legitimacy of governments' decisions and actions can be questioned and the governments' power and authority to govern the country are typically challenged.	
Policy Questions	With high levels of public trust, • Is the government leveraging high levels of public trust to identify, listen to and anticipate changes in users' needs and the context innovatively with new technologies so as to provide public services that truly meet their needs and contribute to socio-economic progress as a whole? • Is the government openly and actively communicating on the developments, value and progress in digital government strategies and plans, especially in the use of emerging technologies, management of data and design and delivery of new public services? • Are there policies for educating and involving the younger generations through co-creation to ensure sustainability and continuity?	With low levels of public trust, • What are the reasons for the low level of public trust, which could be related and unrelated to the digitalisation of the public sector? • Can the government strengthen its digital government governance to foster its capacity to be more open, transparent, trustworthy, responsive, reliable and fair in the policy making and service design and delivery processes? • Is the government prioritising people-driven and human-centred public services that respect and protect digital rights in order to reinforce public trust?
Approaches	• **Belgium** has adopted a transparency-driven approach on the management of open, closed and shared data to demonstrate the importance that the government attaches to public trust in the digital age. The Brussels Regional Informatics Centre developed a regional platform where stakeholders can access open data and services for sharing and re-use by the ecosystem. It reinforces peoples' data ownership and consent, thereby allowing improved public trust that can enable the government to develop an ambitious digitalisation and data-driven agenda to make Brussels a full-fledged smart city (datastore.brussels, n.d.[46]).	

Sub-Dimension 1.2.5 Diversity

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.2.5 Diversity** refers to range and variety of demographic, socio-economic and ethnic characteristics in a country's population. Governments should consider diversity as a major contextual factor in the design of public policies that have a social and economic impact. Certain population segments may hold a stronger propensity to embrace or resist the adoption and use of digital technologies and data due to social and cultural norms. In diverse populations, governments may find it easier to use digital technologies to manage the needs and preferences of different groups. At the same time, it is necessary to ensure that the digital rights of minority segments are not compromised in the process. In less diverse populations, governments may find it easier to cater to the needs and preferences of the population groups. At the same time, it is necessary to ensure that the minority groups are not neglected or left behind in the process. In both cases, digital governments need to pay attention to safeguarding against the risk of

	the generation and outputs of data and algorithms exacerbating social biases (OECD, 2021[47]) and broadening the digital gap.	
Policy Questions	For a diverse population, • Does the digital government strategy consider the heterogeneity of the population and their different needs and preferences across the country? • Is the communication, involvement and implementation of the digital government strategy tailored to the various population groups with adequate protection of their digital rights?	For a less diverse population, • Does the digital government strategy consider minority groups' needs and preferences to ensure inclusiveness and equity in the delivery of value with the digitalisation of the public sector? • What measures and mechanisms are in place to ensure that the digital rights of minority groups are protected?
Approaches	• **India** has vast linguistic and ethnic diversity despite a largely English-speaking population among the youth. There are still major sections of the population that still only speak regional languages. When managing the digital government policy in terms of the language for the provision of digital services, it is necessary for the government to properly consider the linguistic and ethnic diversity of its population and address language barriers to maximise their reach (OECD, 2014[48]).	

Sub-Dimension 1.2.6 Cross-Border Mobility

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.2.6 Cross-Border Mobility** is a social phenomenon that describes the movement of people from one place to another with the intention of settling at the new location either permanently or temporarily. This societal contextual factor can be important in signalling or incentivising the development of enablers such as digital identity and signature. Digital government development offers significant opportunities to simplify, secure and manage the processes involved in cross-border mobility (e.g. immigration, business travel, tourism). Where cross-border mobility is a common phenomenon, governments are more likely to explore the use of digital tools and platforms in the management of cross-border mobility services. Migrants, business travellers and tourists can also create demand-driven digitalisation as digital tools and platforms can be used to network, find jobs, connect with communities and remit money.	
Policy Questions	Where cross-border mobility is a common phenomenon, • Does the government prioritise the development of enablers, services and digital literacy programmes that ease the cross-border mobility process? • Can the government better regulate, provide support and collaborate with the private sector to ensure that migrants', business travellers' and tourists' digital, civil and employment rights are protected?	Where cross-border mobility is not a common phenomenon, • Is there potential for the development of key enablers such as digital identity and signature or the use of biometric data in order to better manage the public services for the citizenry?

Approaches	• The **European Union** (EU) has an ambitious agenda of promoting digital cross-border services in line with the philosophy of the European single market and free movement of European citizens. Across diverse government sectors, the EU Member States have been able to progressively test and deliver services to citizens from other European countries through progressive data exchange and common recognition of digital identity mechanisms, improving the circulation and migration trends in the European space (European Commission, 2021[49]). The European directives and regulations on data protection and digital identity also deeply influence digital government policies of the EU Member States.

Dimension 1.3 Technological and Policy Context

Dimension 1.3 Technological and Policy Context covers key contextual factors that are linked to the country's past, current and prospective technological development and how technology is used in the public and private sector, which have fundamental influence over the governance of digital government.

Sub-Dimension 1.3.1 Coverage and Level of Development of ICT/Digital Infrastructures

<table>
<tr><td>Importance and Implications of the Governance of Digital Government</td><td colspan="2">Sub-Dimension 1.3.1 Coverage and Level of Development of ICT/Digital Infrastructures looks at the development of digitalisation in terms of the availability, speed, latency, bandwidth, coverage, network and energy usage of Internet connectivity in a territory – as the result of the country's digital infrastructure policies. Countries usually have either a more developed fixed-line network or mobile connection, if not both. Governments should optimise the delivery of public services based on the convenience and cost of Internet connectivity.

A good coverage and level of development of ICT/digital infrastructures provides the foundation for access and delivery of digital public services across the country and enables greater digital inclusion. It also facilitates the formation of a digital government ecosystem by promoting innovation and greater digital maturity. A sub-optimal coverage and level of development of ICT/digital infrastructures will likely hamper the access and delivery of digital public services and risks the widening of a digital divide between areas with fair connectivity and those that have poor connectivity.</td></tr>
<tr><td>Policy Questions</td><td>With a good coverage and level of development of ICT/digital infrastructures,
Is the accessibility to Internet connectivity made affordable and with ease across areas in the country and segments of the population to guarantee digital inclusion?
Does the government have in place robust approaches for the procurement of ICT/digital technologies to sustain the modernisation of the ICT/digital infrastructure, encourage investment and innovation in the digital government ecosystem?</td><td>With a sub-optimal coverage and level of development of ICT/digital infrastructures,
Is there political commitment and support to promote the long-term development of ICT/digital infrastructures across the country?
Does the government have a strategy and plan to improve connectivity through sustained investments and innovation with the participation of private sector stakeholders?
Can the government use international guidelines as benchmarks?</td></tr>
<tr><td>Approaches</td><td colspan="2">Iceland has high coverage and level of development of ICT/digital infrastructures, with the highest percentage of individuals in Europe using the Internet no matter the socio-economic background. In 2020, 99% of rural households had access to the Internet, and the share of rural households was with access was 11% above the European Union average (Statista, 2021[50]). This allows the government to have ambitious approaches on digital government policy without risking leaving segments of the population behind, such as having all public services in one centralised platform, efficient and user-centred (Ísland.is, n.d.[51]).</td></tr>
</table>

Sub-Dimension 1.3.2 Technological/E-Government Heritage and/or Legacy within the Public Sector

<table>
<tr><td>Importance and Implications of the Governance of Digital Government</td><td colspan="2">Sub-Dimension 1.3.2 Technological/E-Government Heritage and/or Legacy within the Public Sector refers to past e-government and digital government policies and initiatives that have an impact on the present digital government agenda.

A strong technological or e-government heritage and/or legacy within the public sector may be advantageous in the governance of digital government and result in a steady advancement of digital maturity due to an existing tradition and culture of incorporating technology. However, it may also result in obstacles due to unique digital and data infrastructure being used in across the public sector. An absent or weak technological or e-government heritage and/or legacy within the public sector may be disadvantageous in the governance of digital government, but with the right leadership, commitment, strategy and sense of urgency, it is possible for the government to catch-up or even accelerate the advancement of digital maturity rapidly.</td></tr>
<tr><td>Policy Questions</td><td>With a strong technological or e-government heritage and/or legacy within the public sector,
Is the current digital government strategy path dependent and locked-in with previous policies and initiatives that may not actually be effective or efficient?
Is the digital government policy agile in responding directly to economic, social and technological conditions?
Does the organisational and personal leadership have a good amount of autonomy and a clear mandate to make changes independently from existing policies and initiatives?
How are public sector organisations managing their internal processes and external stakeholders to overcome legacy barriers, e.g. business processes, commercial spending models, data, technology resources and suppliers?</td><td>With an absent or weak technological or e-government heritage and/or legacy within the public sector,
Can the government prioritise establishing governance arrangements and mechanisms with strong leadership, commitment, co-ordination, policy levers and a robust strategy to promote the development of digital government?
Does the leading public sector organisation on digital government employ an assessment framework on the various digital government policy priorities in line with overarching economic and social development outcomes to assist with the decision-making process?</td></tr>
<tr><td>Approaches</td><td colspan="2">Finland has a strong technological or e-government heritage and/or legacy within its public sector. There has long been a great variety of information tools and systems available as across several policy areas. Yet, legacy systems, diverse standards and a lack of interoperability have resulted in challenges for data exchange. Over the past few years, the government has made the effort to put in place formal mechanisms and institutions to co-ordinate digital government implementation across the national and local levels. (OECD, 2015[52]) Finland's top rank in the Digital Economy and Society Index (DESI) is due to its high performance in digital public services and integration of digital technologies, based on active co-operation between public and private sector actors including start-ups (European Commission, n.d.[53]).</td></tr>
</table>

	• **Estonia** had an absent technological or e-government heritage and/or legacy within its public sector. In 1990, following its independence from the Soviet Union, the government began the organisation and development of its public sector with a strong forward-looking and digital approach. Estonia's no legacy culture allowed the government to deploy the most advance systems and solutions without having to replace old ones, adapt its administrative structure and process to digitalisation and build a strong digital leadership with a high level of innovation (e-Estonia, 2021[54]).

Sub-Dimension 1.3.3 Integration of ICT/Digital into Governance and Business Processes

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.3.3 Integration of ICT/Digital into Governance and Business Processes** points to how much ICT and digital technologies have been adopted by the public and private sectors as a result of digital government, economy and society policies. A high integration of ICT/digital into governance and business processes means that the digital government and economy is more advanced. In order to raise the level of digital maturity, the government should put in place measures and mechanisms to enhance the agility, coherence and co-ordination of public and private sector organisations in responding and seizing opportunities in technological developments or changes in the technological context. A low integration of ICT/digital into governance and business processes means that ICT/digital is not used extensively and comprehensively, and the digital government and economy is underdeveloped.	
Policy Questions	Where there is a high integration of ICT/digital into governance and business processes, • Are ICT/digital technologies used towards securing economically and socially optimal outcomes? • Does the government have a clear, coherent and well-co-ordinated digital transformation strategy and plan for the public sector that are adaptable based on technological changes; innovative, experimental and collaborative by involving a wide range of stakeholders in the ecosystem; and long-term-oriented towards sustainable economic and social development outcomes?	Where there is low integration of ICT/digital into governance and business processes, • What is preventing the government from advancing the digitalisation of the public and private sectors: the lack of leadership and vision; the lack of a digital government, economy and society strategy; the lack of financial and non-financial resources; the lack of the capacity and capability co-ordination; the lack of monitoring and impact assessment techniques?
Approaches	• **Luxembourg** has a high integration of ICT/digital technologies into its governance and business processes. It ranked above average on the 2019 OECD Digital Government Index (DGI) (OECD, 2020[14]). In 2015, 43.9% of its manufacturing exports were digital-intensive value-added services, the highest among OECD member countries and key partners. In 2017, 71.7% of its commercial services trade were delivered digitally, indicating the importance of digital services in the economy. In 2018, 20.6% of its international trade was of ICT goods and services (OECD, n.d.[55]). The digital intensity of Luxembourg's private sector is based on technological characteristics (i.e. tangible and intangible ICT/digital investment, purchases of immediate ICT/digital goods and services, use of robots); human capital required to embed technology in production (i.e. ICT/digital specialist intensity); and the interface between firms and the market. To tap on this strength, the Electronic	

	Governance 2021-2025 strategy was adopted by the Government Council in early 2021 to reinforce the transition to digital government and create value for citizens, businesses and the public sector (CTIE, n.d.[56]).

Sub-Dimension 1.3.4 Government-Specific Technological Innovations

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.3.4 Government-Specific Technological Innovations** elaborates on the innovations that have contributed to improving the public sector's efficiency and efficacy in internal processes and public services. It is an important factor that indicates the public sector's agility, adaptability, responsiveness and resourcefulness in its digital transformation, independent of the private sector's contribution. A country with strong government-specific technological innovations is likely to have a leading public sector organisation that oversees research, development and innovation. The government is better equipped to manage the complex and unpredictable challenges while maintaining public trust, business confidence and achieving economic and social outcomes (OECD, 2019[31]). A country with weak government-specific technological innovations is vulnerable to risks and changes that could result in governments being reactive instead of prepared.	
Policy Questions	With strong government-specific technological innovations, • How can the government encourage greater and more transparent exchange of knowledge and open data to stimulate a culture of exploration, learning, re-learning, competition and experimentation? • Can the leading public sector organisation orientate the innovation process to be more anticipatory, forward-looking and prepared while being strongly aligned with overarching economic and social development policy goals?	With weak government-specific technological innovations, • Can the government put in place incentives and structures for public sector, private sector and civil society stakeholders to collaborate and partner on innovating and improving the digital government progress? • Is there a good foundation of rules and processes such as legal and regulatory frameworks, budgeting measures and mechanisms, approval, monitoring and impact assessment to increase opportunities to innovate?
Approaches	• **Sweden's** leading public sector agency for innovation, Vinnova, manages research and innovation funding programmes of interest to the Swedish economy, as well as individual projects by businesses. It also has testbeds, which are physical or virtual environments where the private sector and civil society can collaborate in the development, testing and introduction of new products, services, processes or organisational solutions in selected area (Vinnova, n.d.[57]). Vinnova demonstrates the government's commitment to strong public sector innovation in line with the digital government agenda.	

Dimension 1.4 Environmental and Geographical Considerations

Dimension 1.4 Environmental and Geographical Considerations covers key contextual factors relating to the country's natural territorial organisation, characteristics and conditions which have fundamental influence over the governance of digital government. The importance of the green transition towards carbon neutrality and sustainability has also placed considerations of the green governance agenda alongside the digital governance agenda.

Sub-Dimension 1.4.1 Local/Regional Variances

<table>
<tr><td>Importance and Implications of the Governance of Digital Government</td><td colspan="2">Sub-Dimension 1.4.1 Local/Regional Variances involves the consideration of the political, economic and social activity and system in a local/regional area vis-à-vis other local/regional areas. These variances can be distinct based on the history and tradition from which the local/regional areas and governments are founded on. In contrast to Sub-Dimension 1.1.1 Power Structure: Federal or Decentralised vs. Centralised Systems that analyses only the political and administrative system of the country top-down, Sub-Dimension 1.4.1 Local/Regional Variances takes a broader and holistic scope of analysing the local/regional characteristics (including political, administrative, economic, societal) in the areas and communities from the bottom-up.

Countries that have decentralised power structures and administrative functions are likely to have more autonomous sub-national governments. The management and implementation of digital government policies at the local level could pose a challenge in terms of co-ordination and customisation due to the different conditions of the local/regional area, impacting public trust and effectiveness of public governance. Therefore, it is critical to address differences between and/or within local/regional areas and how the local/regional economies comprehensively serve different groups in society in their areas.

Local/regional areas that have large variances demand greater decentralisation and autonomy. This could allow the local/regional government to be better positioned to govern and understand the local/regional needs and preferences. The governance and advancement of digital government will have to be much more tailored to the region's specificities. Local/regional areas that have small variances may favour centralisation and strong national governments or less autonomous local/regional governments, which will pose less of a challenge in developing national digital government policies.</td></tr>
<tr><td>Policy Questions</td><td>For local/regional areas that have large variances,
How can local/regional governments involve the local/regional populations as much as possible in the advancement of digital government, economy and society plans?
Are there governance structures and processes in place that enable transparency, accountability, agility and responsiveness to circumstantial changes and local citizens' needs and preferences?</td><td>For local/regional areas that have smaller variances,
Does the national government well understand the digitalisation needs and preferences of the local/regional economies and societies, and support the local governments?
Do the local/regional governments work with the national level in an agile and responsive yet accountable and transparent way to be able to customise the digital government strategy and plans to the locality/region?</td></tr>
</table>

Approaches	• **Canada** is the second-largest country in the world, having many different geographic areas and five distinct areas: the Atlantic Region, Central Canada, the Prairie Provinces; the West Coast; and the North. In Canada, regional identities were formed once European settlers settled on the continent among the various First Nations peoples. Today, regionalism is expressed in the various provincial identities, in the country's economy and in the daily life experiences in different parts of the territory. That sense of regional belonging appears in the provinces as governments assume a greater role in Canadian life. Provincial governments play a stronger role in the economy, and the provinces play a stronger role in the perception of Canada. Regionalism is considered critical for the development of the national digital government policy. • **Spain** has 17 autonomous communities and two autonomous cities at the first level of territorial subdivision. Each autonomous region benefits from a status of internal autonomy enshrined in an organic law that governs its institutional organisation, competences and compulsory levies from which it receives all or part of the revenues to ensure its financing. Although they benefit from the central government's executive power and the legislative power, the autonomous communities constitute decentralised communities and not federated entities. The level of autonomy and diversity (e.g. economic, linguistic) of the autonomous communities (including linguistic) represents a challenge for coherent and co-ordinated digital government policies across the country.

Sub-Dimension 1.4.2 Environmental and Geological Risks and Hazards

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.4.2 Environmental and Geological Risks and Hazards** is linked to natural and human geographical factors, such as climate change and industrial activities. They pose a grave and serious threat to critical infrastructure and services that countries and cities are dependent on for daily activities and processes. Digital infrastructure serves as the foundational backbone on which the digital government, economy and society run. Countries that have high environmental and geological risks and hazards should prioritise the protection, resilience and backup of digital infrastructure, and the adoption of risk management approaches for digital infrastructure and services. Countries that have low environmental and geological risks and hazards may be less incentivised to do so but should nonetheless undertake it too.	
Policy Questions	With high geological risks and hazards, • How often does the government conduct digital risk identification, measurement and assessments and mitigation with regards to geological risks? • Does the government have strong governance and compliance structures and processes in place to manage these risks through engaging and activating the whole digital government ecosystem?	With low geological risks and hazards, • Has the government identified other factors that may pose a serious risk and hazard to the operations of critical digital infrastructure? • Does the public sector have a strong risk-sensitive culture and skills to manage risks in the area of digital government, which is critical to building agility and resilience in the long run?

Approaches	• **Japan** is subject to several natural geological risks and hazards. Typhoons, earthquakes and tsunamis are the most common natural hazards and are mostly due to the movement of the subduction plates. The government is taking many measures to monitor and alert the population as soon as possible. As of January 14, 2016, the most significant risks remain located along the Nankai Trough. An earthquake of the same level as in 2011 could occur, and its probability is estimated at 70% in the next 30 years. This involves a great deal of management, securing resilience and redundancy of technological structures, networks and protection of places like data centres to avoid destruction due to climatic or natural hazards.

Sub-Dimension 1.4.3 Priority for Environmental Protection and the Green Transition

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 1.4.3 Priority for Environmental Protection and the Green Transition** is an important environmental policy consideration that digital governments increasingly need to consider in a bid to overcome climate change and other environmental challenges through leveraging digital technologies and data. Countries that highly prioritise a green transition towards meeting the Paris Agreement and the United Nations Sustainable Development Goals should tap on the synergies between the green and the digital agendas in order to advance them simultaneously, such as open data to inform green policy making, digital government policy levers to support the green transition, digital public service design and delivery to reduce carbon emissions and improve green outcomes. Countries that have yet to prioritise a green transition will face a higher risk of having a less sustainable and resilient government, economy and society and should, therefore, look at ways to strengthen the governance of the green transition through the governance of digital government.	
Policy Questions	Where there is a high priority for a green transition, • How is the government incorporating green principles and practices into its processes, programmes and services, e.g. green data infrastructures, business cases, procurement of ICT/digital technologies that contain green metrics, consultation and co-ordination with green stakeholders? • How developed is the monitoring and impact assessment framework for green outcomes in every stage of the digital government transformation agenda?	Where there is a low priority for a green transition, • How much open data are available on the environmental challenges and how are they used by the public sector, private sector and civil society stakeholders to increase awareness on the need for a greener government, economy and society? • Does the digital government transformation agenda take into consideration green public procurement dimensions, and involve users in co-creation to accommodate for environmental activism?
Approaches	• The **European Union** has been championing the alignment of the digital and green agenda. In 2020, the European Commission released NextGenerationEU, a EUR 750 billion stimulus package as a policy instrument to boost the economic recovery post-COVID-19 and support a transition to a greener, more digital and resilient Europe. The core of it is the EUR 672.5 billion Recovery and Resilience Facility that would provide grants and loans for investments and reforms in: clean technologies and renewables; energy efficiency of buildings; sustainable transport and charging stations; rolling out of rapid broadband services; digitalisation of the public administration; data cloud capacities and sustainable processors;	

	and education and training of digital skills. This is a huge commitment on the part of the European Union to reinforce Member States' commitment to both the green and the digital transition (European Commission, n.d.[58]).

4 Governance Facet 2: Institutional Models

Chapter 4 introduces the institutional elements under Facet 2 of the OECD Framework on the Governance of Digital Government. They bring to light the institutional arrangements and mechanisms necessary to bolster a whole-of-government, coherent and co-ordinated approach to digital government – from the macrostructure and the leadership to co-operation and collaboration within the public sector and with external actors in the digital government ecosystem including citizens and businesses.

The importance of institutional analysis

Facet 2: Institutional Models is based largely on Pillar 1 and 2 of the OECD Recommendation of the Council on Digital Government Strategies (2014) “Openness and Engagement” and “Governance and Co-ordination". The first pillar calls for greater transparency, openness and inclusiveness of government processes and operations; engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery amongst others. The second pillar calls for secure leadership, political commitment, effective organisational and governance frameworks for inter-ministerial and inter-agency co-ordination, collaboration and coherence. Defining these roles, functions, mandates, processes and working relations of and among institutions and their actors are critical for a sustainable digitalisation of the public sector (OECD, 2014[2]).

Institutional models describe the formal and informal arrangements for the governance and co-ordination of the implementation of digital government strategies, and the design and delivery of public services in the digital context. In a way, the governance and organisation of public institutions and their processes should reflect the policy needs, desires and preferences of citizens and businesses so as to guarantee a people-centred provision of services. The working arrangements and mechanisms underlying the institutional models also affect the governments’ agility, innovativeness and responsiveness to changes externally and internally. Conducting an institutional analysis is, therefore, fundamental to creating sound governance frameworks in the public sector.

The following four dimensions aim to cover these fundamental elements (see Figure 4.1):

1. Macro-Structure;
2. Leadership: Position/Role;
3. Co-ordination and Co-operation;
4. Civic Participation and Collaboration.

The legal and regulatory basis covered in *Facet 2: Institutional Models* is exclusively considered in the context of the institutional structures, set-ups, approaches and mechanisms, while that of *Facet 3: Policy Levers* is analysed as a policy instrument for creating a suitable legal and regulatory environment that supports and promotes the implementation of digital government strategies.

Figure 4.1. Governance Facet 2: Institutional Models

The dimensions and sub-dimensions of Facet 2: Institutional Models

Dimension 2.1 Macro-Structure

- Sub-Dimension 2.1.1 Institutional Set-Up of the Organisation-in-Charge
- Sub-Dimension 2.1.2 Institutional Approach to Digital Government
- Sub-Dimension 2.1.3 Roles and Responsibilities of the Organisation-in-Charge

Dimension 2.2 Leadership: Position/Role

- Sub-Dimension 2.2.1 Chief Information Officer (CIO) and Chief Data Officer (CDO)
- Sub-Dimension 2.2.2 Hierarchical Importance and Legal Basis

Dimension 2.3 Co-ordination and Co-operation

- Sub-Dimension 2.3.1 High-Level Co-ordination
- Sub-Dimension 2.3.2 Organisational and Technical Co-operation

Dimension 2.4 Civic Participation and Collaboration

- Sub-Dimension 2.4.1 Citizen Participation and Collaboration
- Sub-Dimension 2.4.2 Industry Participation and Collaboration

Source: Author.

The presentation of *Facet 2: Institutional Models* differs from *Facet 1: Contextual Factors* since the dimensions and sub-dimensions that fall under *Facet 2: Institutional Models* are about operationalising the governance of digital government. The characteristics, policy questions and recommendations of each sub-dimension are elaborated according to three stages of governance: basic, intermediate and advanced. These stages are not intended to be absolute, but a general guide for policy makers to consider and self-assess.

Dimension 2.1 Macro-Structure

Dimension 2.1 Macro-Structure covers the big picture of how a government organises its public sector organisations to advance the digital government agenda.

Sub-Dimension 2.1.1 Institutional Set-Up of the Organisation-in-Charge identifies what and where the public sector organisation that is responsible for the digital government agenda is positioned. *Sub-Dimension 2.1.2 Institutional Approach to Digital Government* reveals the institutional approach to digital government. *Sub-Dimensions 2.1.3 Roles and Responsibilities of the Organisation-in-Charge* looks at the roles and responsibilities of the organisational leadership to facilitate the design and implementation of the digital government strategy across the public sector.

Sub-Dimension 2.1.1 Institutional Set-Up of the Organisation-in-Charge

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.1.1 Institutional Set-Up of the Organisation-in-Charge** illustrates the positioning of the leading public sector organisation on the digital government agenda in the government. This organisation-in-charge can effectively be under the presidency or the prime minister's office at the centre of government, under a co-ordinating ministry (e.g. finance, public administration), or through a line ministry (e.g. digitalisation, science, technology). The organisation-in-charge itself can also either be a public sector agency, a unit, an office, a directorate or a ministry. An organisation-in-charge at the centre represents the dedication of the highest political point to the digital government strategy and greater leverage to incorporate the strategy into a more comprehensive public sector modernisation strategy. An organisation-in-charge under or as a co-ordinating ministry can foster the uptake of digital innovations across the public sector, promote cross-cutting co-ordination of policies and link them to the public sector reform agenda. An organisation-in-charge under or as a line ministry expresses a chain of accountability for which the digital government strategy falls under a broader policy strategy. A one-size-fits-all approach does not apply because benefits and challenges can be found in all three cases. It is most essential to have in place an organisation-in-charge of digital government with clearly defined roles, responsibilities, accountability mechanisms and strong relations with other public sector organisations. The digital transformation of the public sector should be comprehensive and holistic by enabling the adaptation of the digital government strategy to the specific needs of policy areas and other regional/local levels of government.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	There is an organisation-in-charge that is at the centre of government, under or as a co-ordinating ministry or under or as a line ministry, which has substantial leadership, political influence and organisational stability.	There is an organisation-in-charge that is at the centre of government, under or as a co-ordinating ministry or under or as a line ministry, with some level of leadership, political influence and organisational stability.	There is an organisation-in-charge that is at the centre of government, under or as a co-ordinating ministry or under or as a line ministry, but there lacks leadership, political influence and organisational stability.
Policy Questions	Does the leadership, political influence and organisational stability reach all sectors and levels of government such that	How should the structure, supervision or co-ordination of the organisation-in-charge be changed in order to strengthen	Should the organisation-in-charge of the digital government strategy be at the centre of government, in a co-

	the digital government strategy is cross-cutting and encompasses the whole public sector?	the leadership, political influence and organisational stability?	ordinating or line ministry? What are the contextual, institutional and policy factors that hampers this ministry?
Recommendations	Evaluate if the organisation-in-charge has a digital government strategy that has a sufficient level of political support and comprehensively covers (or has the potential to impact) all sectors and levels of government and the whole public sector. Review how the digital government policies are linked and can leverage the public sector reform agenda.	Consider placing the organisation-in-charge closer to the centre of political and administrative power such as the head of the government or head of state, while at the same time ensuring the organisational independence of this body from political pressures and changes.	Strategise the establishment of an organisation-in-charge at the centre of government, under co-ordinating or a line ministry depending on the contextual, institutional and policy environment. Ensure that the organisation-in-charge has considerable leadership, political influence and organisational stability.
Practices	• The **United Kingdom**'s Government Digital Service (GDS) that leads the digital government policy is at the centre of government and part of the cabinet office. It was created in 2011 and works across the whole government to assist departments transform its public services. The GDS has built and maintained several cross-Government as a Platform tools such as GOV.UK, GOV.UK Verify, GOV.UK Pay, GOV.UK Notify and the Digital Marketplace. It also administers standards such as the Government Service Standard, the Technology Code of Practice and the Cabinet Office Spend Controls for Digital and Technology. • **Sweden**'s Agency for Digital Government that leads the digital government policy was established in 2018. The Agency is under a co-ordinating ministry, the Ministry for Infrastructure, led by the Minister for Housing and Digital Development, the Minister for Enterprise and Innovation, and the Minister for Public Administration. Such institutional arrangement enables shared responsibility, inter-institutional co-ordination and collective decision-making of digital policies across government offices. This speeds up decision-making processes and reform an institutional context characterised by powerful and independent agencies that favours silo-based approach. • **Colombia**'s Ministry of Information and Communication Technologies (MinTIC), founded in 2009, is wholly in charge of the digital government agenda. As a line ministry, it has the sole mandate to identify, formulate, adopt, implement and promote the policies in ICTs. It supports the state in the access and use of ICTs to facilitate and optimise the management of government agencies to provide better public services. This gives MinTIC the full autonomy and authority to produce and manage changes.		

Sub-Dimension 2.1.2 Institutional Approach to Digital Government

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.1.2 Institutional Approach to Digital Government** offers three distinct approaches based on the country's contextual factors (i.e. political and administrative culture and structure, digital government maturity, policy context): 1) the digital transformation agency approach; 2) the centralised co-ordination approach; and 3) the decentralised co-ordination approach. These approaches have been identified based on the OECD research on governance methods of digital technologies in the

	public sector. They are not mutually exclusive and are more often mixed to some point to make up an institutional model that is appropriate for the country. The digital transformation agency approach encompasses the creation of a public sector organisation that has the duty to supervise the digital transformation of the public administration and its services. It is aimed at fast gains for improving service quality but could face long-term organisational, economic and cultural resistance due to its external nature. The central co-ordination approach encompasses the creation of powerful government-wide management with a central co-ordinating leading public sector organisation to implement measures. It is aimed at extensive changes but may be less agile in starting pilot initiatives or testing new methods. The decentralised co-ordination approach encompasses a co-ordinating public sector organisation with fewer mandatory demands and unifying top officials. It is aimed at offering more freedom to smaller public sector organisations to innovate and experiment, but risks misalignment and lack of cohesion across the public sector. No matter the institutional approach taken, governments should ensure that the organisation-in-charge is backed by robust governance arrangements and mechanisms to advance the digital government agenda across the public sector. This includes a degree of supervision and co-ordination that best suits the specific needs across policy areas and levels of government (e.g. providing autonomy, enabling agility and innovation, ensuring coherence).		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The institutional approach endues the organisation-in-charge with the power to lead, initiate, design, allocate, implement and co-ordinate digital government policies and projects throughout the public sector efficiently and effectively. Objectives of the digital government strategy are achieved.	The institutional approach largely allows the organisation-in-charge to initiate, design, allocate, implement and co-ordinate digital policies and projects throughout the government and public sector, but with limited leadership, influence and accountability. Certain parts of the public sector are not aligned.	The institutional approach marginally enables the organisation-in-charge to lead, initiate, design, allocate, implement and co-ordinate digital government policies and projects throughout the public sector. Objectives of the digital government strategy are usually not optimally achieved. The public sector is not aligned in the implementation of the strategy.
Policy Questions	Can the organisation-in-charge strengthen its power and legitimacy through greater openness and engagement with relevant stakeholders? Can it involve more organisations in the ecosystem to be more sustainable and agile in the whole policy and implementation process?	Does the organisation-in-charge have formal and informal mechanisms, such as policy levers, to ensure that the whole policy and implementation process is accounted by respective stakeholders? What can be done to increase the responsibility and effectiveness of this body-in-charge?	What are the weaknesses of the organisation-in-charge in the whole policy and implementation process? Which approach can be taken to strengthen the formal and informal power of the organisation-in-charge across the public sector?
Recommendations	Examine if the institutional approach attests for both efficiency and effectiveness on	Appraise if the organisation-in-charge has clear responsibilities and structures in place to guide,	Consider the digital transformation agency approach or the central co-

	one end, and innovativeness and agility on the other. Assess the engagement and collaboration with other organisations of the public sector and in the ecosystem. Explore the creation and use of common resources to advance Government as a Platform.	co-ordinate and ensure the coherence of the organisation and governance of the digital transformation in the public sector. Involve the organisation-in-charge in the design and delivery of public services across policy areas and at all levels of the government.	ordination approach as this ensures a concentration of policy power and extension of authority for the digital transformation in the public sector that is most lacking at this stage.
Practices	• **Portugal**'s digital transformation agency, the Administrative Modernisation Agency (AMA), was created in 2007 and sits within the Presidency of the Council of Ministers. It exercises the powers of the Ministry of State Modernisation and Public Administration in modernisation, administrative simplification and digital government, and is under the supervision of the Secretary of State for Innovation and Administrative Modernisation. The agency has a top role in the development, promotion and support of the public administration in several technological fields and is in continuous contact with focal points at institutions relevant for the implementation of digital government projects. It is responsible for the approval of ICT and digital projects over EUR 10,000 and chairs the Council for ICT in the public administration. • **Denmark** takes on the central co-ordination approach through its Steering Committee for Cross-Government Co-operation that was set up from an agreement between the central, regional and local governments. It provides a sustainable mechanism for co-ordinating and committing to the national digital strategy across the public sector, and for laying a common groundwork for digital government. It consists of high-level representatives such as permanent secretaries and managing directors from the five most important and relevant ministries and the associations representing the municipalities and the regions. The Committee determines the principles and frameworks for digital government at a strategic level. An inter-ministerial project office at the Danish Agency for Digitalisation of the Ministry of Finance was established in 2011 to oversee digitalisation policies at an operational level and supporting the Committee. • The **Netherlands** adopts a decentralised co-ordination approach by charging its public sector organisations with specific digital government projects and monitoring their progress. It involves a standardised practice of identifying specific indicators for each objective that the institutions need to carry out for their allocated project such that the progress can be properly monitored.		

Sub-Dimension 2.1.3 Roles and Responsibilities of the Organisation-in-Charge

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.1.3 Roles and Responsibilities of the Organisation-in-Charge** demonstrates the link between the organisational leadership's powers and duties with the government's capacity and capability to direct the advancement of the digital government agenda. This needs to be undertaken as an integrated part of the broader public sector modernisation strategies, towards positive economic and social outcomes for citizens and businesses. The 7th principle of the Recommendation of the Council on Digital Government Strategies (2014) specifies "[establishing] effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government" (OECD, 2014[2]). Building on this and drawing on the results of the 2019 OECD Digital Government Index (DGI), the roles and responsibilities of the organisation-in-charge should encompass co-ordination, advisory and decision-making responsibilities (OECD, 2020[14]).

	Co-ordination responsibilities include the horizontal and vertical co-ordination of the development of the national digital government strategy, with other public sector organisations on its implementation and with local governments to align the development of digital government projects with the objectives of the national digital government strategy. Advisory responsibilities include the provision of counsel and guidance on the development of the national digital government strategy; the monitoring of its implementation; the support of the development and implementation of digital government strategies at an organisational-level; the development of technical guidelines for ICT/digital architecture; and horizontal co-ordination among public sector organisations. Decision-making responsibilities include the powers and duties to make important decisions with considerable accountability across the government, including the prioritisation and approval of ICT/digital government project investments; ex-ante revisions, evaluation and external reviews of ICT/digital government projects; provision of financial support for the development and implementation of ICT/digital government projects.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The organisation-in-charge has well-developed co-ordination, advisory and decision-making responsibilities that impart and specify the powers and duties in bringing together and managing the working relations of various stakeholders for digital government policies, and in providing advice that is taken into consideration and making important decisions in the advancement of digital government maturity.	The organisation-in-charge has fairly developed co-ordination, advisory and decision-making responsibilities that impart and specify the powers and duties in bringing together and managing the working relations of various stakeholders for digital government policies, and in providing advice that is taken into consideration and making key decisions in the development of digital government maturity.	The organisation-in-charge has underdeveloped co-ordination, advisory and decision-making responsibilities that barely impart and specify the powers and duties in bringing together and managing the working relations of various stakeholders for digital government policies, and in providing advice that is taken into consideration and making decisions in the management of digital government.
Policy Questions	Does the organisation-in-charge understand the importance of adapting the digital government strategy to various policy areas and regional/local levels? Does the organisation-in-charge also have the long-term vision, strategy and goals for the development and engagement of stakeholders such that co-ordination, advisory and decision-making capacities at the national, regional and local levels can be strengthened?	Can the organisation-in-charge increase its co-ordination, advisory and decision-making capacity and capability through formal arrangements such as institutional arrangements, mechanisms and policy levers, and informal means like better understanding the needs and priorities of stakeholders in the digital government ecosystem?	Is the organisation-in-charge able to receive more political and institutional support to back its powers and duties to co-ordinate, advise and make decisions for digital government advancement? Does the public sector organisation have the necessary financial and non-financial resources to back these powers and duties?
Recommendations	Consider if the political and administrative leadership can be stabilised and institutional support can be strengthened	Evaluate the strengths and weaknesses of the organisation-in-charge in terms of its co-ordinating, advisory	Assess the possibility of the organisation-in-charge to have a ministerial or similar-ranking authority (e.g. committee) to

	through more robust institutional arrangements and mechanisms and the involvement of other leading public sector organisations on the digital government agenda.	and decision-making capacity and capability at every stage and point of the digital government policy process. Strengthen feedback mechanisms.	enhance its co-ordination, advisory and decision-making capacity and capability with the necessary financial and non-financial resources in place.
Practices	• **Brazil**'s organisation-in-charge for advising and co-ordinating the digital government federal policy is of a ministerial-level, namely the Brazilian Secretariat of Digital Government (DGS). The DGS reports to the Ministry of Economy as a line ministry. It was transformed from only having an advisory scope for other government agencies to co-ordinating centralised digital services and enablers. It works closely with the Special Secretariat of State Modernisation task force, which is linked to the General Secretariat of the Presidency (apolitical, 2019[59]). • The **United Kingdom** Government Digital Service (GDS) co-ordinates with local governments on the development of digital projects with the support of the Local Digital Declaration. It has a national team that leads the work with local authorities and councils to assist in the public sector digital transformation process. With the Ministry of Housing, Communities and Local Government, the GDS launched the Local Digital Declaration to support and united local authorities around a shared understanding of good digital practices. This ensures that the development of digital projects at a local level is aligned with the national digital government strategy. • **Chile**'s Ministry General Secretariat of the Presidency (MINSEGPRES) is the organisation-in-charge that oversees the provision of support for the implementation of digital government policies and is responsible for advising initiatives to spur ICT/digital use within the public sector. The Digital Government Division in MINSEGPRES presents to the Minister the digital government strategy and co-ordinates the implementation in various government agencies for the use of technologies, data and information (OECD, 2019[60]). • **Panama**'s National Authority for Government Innovation (AIG) is mandated to hold co-ordinating, advisory and decision-making powers and duties across the executive, judicial and legislative branches to plan, co-ordinate, issue guidelines, supervise, collaborate, support and promote the optimal use of ICTs in the government for the modernisation of public management (OECD, 2019[13]). AIG benefits from an important policy lever that supports the decision-making process for the development and implementation of digital government policies across the government. The Administrator General of AIG participates regularly in the meetings of the Council of Ministers, which allows the AIG to align closely with top political and policy priorities and acquire an oversight over the critical capacity on public sector policies underway. It also gives the AIG to access key decision actors and processes, which enhances its decision-making capability for integrating digital technologies early on the design stage of the policy process (OECD, 2019[13]).		

Dimension 2.2 Leadership: Position/Role

Dimension 2.2. Leadership: Position/Role looks more precisely at the personal leadership across the organisation-in-charge, other leading public sector organisations and more broadly, in the rest of the public sector. The position and role of the highest-ranking administrative officers in the public sector organisations reveal the potential of attaining digital government maturity from a management and cultural perspective, and the level of coherence that can be created.

Sub-Dimension 2.2.1 Chief Information Officer (CIO) and Chief Data Office (CDO) looks at the administrative officer that is in-charge-of the ICT/digital, data governance and management strategies. *Sub-Dimension 2.2.2 Hierarchical Importance and Legal Basis* covers the hierarchical placement, attributes and legal basis of the CIO and CDO in the institutional structure of the government.

Sub-Dimension 2.2.1 Chief Information Officer (CIO) and Chief Data Officer (CDO)

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.2.1 Chief Information Officer (CIO) and Chief Data Officer (CDO)** (or similar roles) points to one of the highest-ranking administrative officers that oversees the ICT/digital, data governance and data-driven projects and investments for the digital advancement of the public sector or public sector organisation. The CIO's title can be termed in various ways in different countries and public sector organisations, such as Chief Digital Information Officers (CDIO), Government Chief Information Office (GCIO) to name a few. The CDO's responsibilities can also be flexibly assigned to associated positions in different countries and public sector organisations, such as Chief Data Scientists or Chief Data Steward. The CIO and CDO have key co-ordination, advisory and decision-making roles and responsibilities in the conceptualisation and implementation of digital government and data-driven strategies and policies by exchanging and communicating with other stakeholders in the ecosystem. These two positions can either be combined into one, separate with shared roles and responsibilities under a joint agenda, or separate and are fully co-ordinated with a joint agenda.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The public sector organisation has CIO and CDO-like positions and roles that are well-defined, endued with clear responsibilities and possesses the necessary capacities and capabilities to carry them out. The CIO and CDO also have considerable political support and institutional influence in the government.	The public sector organisation has CIO- and CDO-like positions and roles that are fairly defined, endued with discernible responsibilities and possesses some capacities and capabilities to carry them out. The CIO and CDO also have some political support and institutional influence in the government.	The public sector organisation lacks CIO- and CDO-like positions and roles that are defined, endued with responsibilities and possesses capacities and capabilities to carry them out. The CIO and CDO also have marginal political support and institutional influence in the government.
Policy Questions	Are the CIO and CDO positions and roles empowered to make considerations beyond the immediate digital government and data plans, and look towards a long-term sustainable	Do the CIO and CDO positions and roles have sufficient acknowledgment, purview and influence over a range of policy areas and processes that concerns the digitalisation of	How can the CIO and CDO positions and roles be better designated and defined to be in charge of developing and implementing the digital government strategy

	and inclusive digital transformation for the public sector? Do the CIO and CDO positions and roles have strong networks of relations and communications in the government?	the public sector such as budget, education, skills, well-being, and sustainability? How can the CIO and CDO receive more political support and increase their institutional influence in the government?	throughout the whole public sector? What are the key factors that are lacking in order to prioritise digital government and a data-driven public sector on the political and policy agenda?
Recommendations	Consider enabling the CIO and CDO with a mandate that provides more leadership and responsibilities that are forward-looking with a long-term perspective on digital maturity of the government and the country. Deepen the relationship with the networks and ecosystem of stakeholders in digital government further. Strengthen the political support of the CIO and CDO in the organisation-in-charge.	Place the digital government and data development agenda at the forefront of policy priorities and as an overarching policy area such that the CIO and CDO have significant leadership and responsibilities in advancing the action plan across the public sector.	Evaluate the digital government and data development of the government and its most pertinent challenges and needs. Assess the appointment of a CIO and CDO with a considerable position and role to lead the digitalisation of the public sector and the resources needed to be effective and efficient.
Practices	• The **United States**' CIO as the Federal Chief Information Officer is also the administrator or the Office of Electronic Government that is part of the Office of Management and Budget. The CIO began its tenure appointed by the United States President under the Obama administration with the "25-point implementation plan" to reform federal ICT management and subsequently, a formal digital strategy and specific sub-strategies such as the "Federal Cloud Computing Strategy". The CIO Council meets with the CIOs, Chief Information Security Officers (CISOs) or designated representatives monthly according to digital and IT policy and priorities (CIO.gov, n.d.[61]). • **Colombia**'s CIO is the Deputy Minister of Digital Economy, who has the function of planning, organising, co-ordinating, managing and controlling the use of IT and digital technologies through the Ministry of Information Technologies and Communications (MinTIC). Colombia's CIO, according to the IT strategy, is a leader that is charged with generating strategic value through the management of digital and IT; is part of a network with the National Digital Commission, national, sectoral, entity and territory CIOs; and acts on various structures in the branches, sectors, territories, Directive Committee and IT officers. • **France**'s CDO is charged with the responsibility of ensuring the quality of public sector data and facilitating data sharing among administrations, researchers, businesses and citizens. It sits within the French Task Force for Open Data, Etalab, at the Prime Minister's Secretariat-General for Modernisation of Public Action. France's CDO oversees the dissemination of new data-based decision methods and big data approaches within the public administration for the optimisation of public resources allocation. The CDO also co-ordinates administrative actions related to the data value chain and ensures the protection of privacy and secrets defined by law. The CDO can request from public administration on the data they produce with an annual report to the Office of the Prime Minister on the inventory, governance, production, dissemination and the use of data by public administrations.		

Sub-Dimension 2.2.2 Hierarchical Importance and Legal Basis

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.2.2 Hierarchical Importance and Legal Basis** points to the hierarchical placement, attributes and legal basis of the CIO- and CDO-like position in the organisation-in-charge or other public sector organisations as an indication of the importance that the government imparts to the digital government and data agenda. It influences the empowerment of the CIO and CDO roles and responsibilities to advance the digital maturity of the public sector for the short- and long-term. The legal basis of the institutional model in which the CIO and the CDO function also has considerable influence on the CIO's and CDO's power and capability to fulfil their role. This legal foundation can either be legislation or decree. Legislation has the potential to provide more institutional stability and continuity for digital government advancement but is less flexible by limiting the CIO's and CDO's ability to set the organisation's priorities and directions. Decrees have a more flexible legal framework that can allow the CIO and CDO to determine the optimal strategy, arrangement and programme based on the contextual factors, but are susceptible and sensitive to political changes and considerations of the executive.

Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The positioning of the CIO and CDO is well-placed and highly prioritised to advance the digital maturity of the government and the country to unlock further development. Their position and role are at the centre of government and they have influence over the rest of the organisation and public sector. There is a solid legal basis for the leading public sector organisation on digital government and data through either legislation or decree. There is a good balance between institutional stability and flexibility for the strategies and plans, which enables the CIO and CDO to work and lead effectively.	The positioning of the CIO and CDO is fairly placed and prioritised to advance the digital maturity of the government and the country to unlock further development. Their position and role are near the centre of government and they have some influence over the rest of the public sector. There is a legal basis for regulating the leading public sector organisation on digital government and data through either legislation or decree. There is a fair balance between institutional stability and flexibility for the strategies and plans, which enables the CIO and CDO to work and lead quite effectively.	The positioning of the CIO and CDO can be better placed and prioritised to advance the digital maturity of the government and the country to unlock further development. Their position and role are not near the centre of government and they have marginal influence over the rest of the public sector. There is a weak legal basis for regulating the leading organisation and office for digital government and data. There is an imbalance of institutional stability and flexibility for the strategies and plans, which hinders the CIO and CDO to work and lead effectively.
Policy Questions	Are the CIO's and CDO's positions catalysts for public sector innovation and digital solutions to global and domestic challenges and changes? Is there a proper balance between the political support and continuity of the CIO's and CDO's work? On top of a	Can the CIO and CDO occupy a more central position in the public administration and sector or a higher position on the organisational structure, supported by networks and stakeholders in the digital government ecosystem? Can there be greater stability and/or	What are the political, institutional and/or cultural impediments to justifying and establishing the position and role of a CIO and CDO? What can be done to overcome these challenges and raise the hierarchical importance of a CIO and CDO? What are the

	balance between institutional stability and flexibility, are the CIO and CDO able to adopt resilient, agile and responsive digital government and data approaches such that decisions and processes can be done effectively?	flexibility in the digital government and data strategies and plans to increase the capability and capacity of the work of the leading public sector organisation, the CIO and the CDO?	most critical areas of digital government and data that need to have a legal basis in order to strengthen the capacity and capability for the CIO and CDO to strategise, plan and co-ordinate the implementation processes?
Recommendations	Reflect on internal and external narratives and perspectives on digital government and data, and where they can be improved to support the mandate and work of the CIO and CDO to increase the stability and flexibility of the public sector and country to challenges and changes. Test the resilience, agility and responsiveness of the digital government and data approaches with respect to simulated risk scenarios and correspondingly fine-tune the set of powers and duties of the leading public sector organisations, CIO and CDO such that they can take the right measures in all circumstances.	Evaluate how changing the level of a CIO and CDO in the organisational structure of the government and their mandate can improve the effectiveness of engagement, communication and action across the whole ecosystem of stakeholders. Determine whether a stronger legal basis for digital government and data can be achieved through legislation or decree based on the need for greater stability vis-à-vis flexibility in the strategies and plans. Further specify the areas in digital government and data that should have a stronger legal basis.	Conduct focus groups and feedback sessions on the perspectives and understanding of digital and data leadership and innovation in the government in order to raise awareness, educate stakeholders and instil the need for governance and accountability through a CIO and CDO. Build up the necessary political support and legitimacy that can be codified into legislation and/or decrees where appropriate in the most critical areas of digital government and data. Look into the development of other policy areas that can further boost the capacity and capability of the CIO and CDO and the ecosystem they are working with.
Practices	• **Estonia**'s Government CIO is also titled Deputy Secretary-General for IT and Telecom in the Ministry of Economic Affairs and Communications. Estonia's Government CIO has a role in setting the national digital strategy and policies – thereby launching and steering strategic initiatives for the development of digital government, economy and society. • **New Zealand**'s Government CDO is the Chief Executive of the Department of Internal Affairs, who reports to the Minister for Government Digital Services. The attributes of Government CDO in New Zealand relies on the Government Chief Data Steward (GCDS). The GCDS is the Chief Executive of the Statistics New Zealand Office (Statistics New Zealand), an agency with a critical role in enabling the unlocking of New Zealand's strategic data and information assets. The GCDS is responsible for setting digital policy and standards; improving investments; establishing and managing services; developing capability; and system assurance towards digital government outcomes. The New Zealand's GCDS is a good example of country that relies on NSOs as national data steward, instead of placing the co-ordination, advisory and decision-making on data governance to a CDO as a specific leadership.		

	• **Korea**'s CDO's appointment has the legal basis drawing on Article 12 of the Act on Promotion of the Provision and Use of Public Data, the Open Data Act and Open Data Management Guidelines.

Dimension 2.3 Co-ordination and Co-operation

Dimension 2.3 Co-ordination and Co-operation zooms in on the specific processes that support the organisational and personal leadership covered in *Dimension 2.1 Macro-Structure* and *Dimension 2.2 Leadership: Position/Role* respectively to carry out policy decisions, policies and initiatives effectively and efficiently. A co-ordinated and co-operative digital government ecosystem requires clarity of roles and responsibilities among public sector stakeholders, based on accountability and transparency, which is key for implementing action plans that stretch across levels of government and policy areas and strengthening public trust.

Sub-Dimension 2.3.1 High-Level Co-ordination focuses on institutional co-ordination at a high political and administrative level. *Sub-Dimension 2.3.2 Organisational and Technical Co-operation* focuses on institutional co-operation on the organisational and technical level. These two sub-dimensions tighten the coherence and sustainability of the direction taken on digitalisation of the whole public sector.

Sub-Dimension 2.3.1 High-Level Co-ordination

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.3.1 High-Level Co-ordination** points to institutional co-ordination at the very top that brings together ministers and highest-ranking administrative officials to extensively collaborate and align on the design and implementation of digital government data strategies and plans. This can take the form of steering committees, working groups and task forces.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The high-level institutional stakeholders in the digital government ecosystem exhibit strong and positive alignment, collaboration and co-ordinate among themselves such that the policy cycle and process is smooth.	The high-level institutional stakeholders in the digital government ecosystem exhibit good and positive alignment, collaboration and co-ordinate among themselves such that the policy cycle and process is fairly smooth.	The high-level institutional stakeholders in the digital government ecosystem exhibit marginal alignment, collaboration and co-ordinate among themselves such that the policy cycle and process is not very smooth.
Policy Questions	Is the high-level institutional co-ordination oriented towards achieving a higher level of digital maturity in the government with spill over effects for the economy and society? Is the high-level institutional co-ordination sustainable and stable regardless of political changes?	How can the leadership and/or responsibilities that are shared among the stakeholders be changed, consolidated or shifted such that the stakeholders are incentivised to have more ownership, co-operate and contribute more to the policy cycle and process?	Is the impediment or challenge to the co-ordination of high-level institutional stakeholders from co-operating political, institutional, technical or cultural? What can be done to reverse this and increase the potential for stronger alignment, collaboration and co-ordination among stakeholders?
Recommendations	Consider extending the scope of the high-level co-ordination to include wider and relevant non-government stakeholders such	Examine an appropriate model of high-level co-ordination that is systemic in its thinking, culture and approach and is	Ensure that priorities for digitalisation of the public sector are overarching, politically supported and

	that the digitalisation and data-driven agenda and efforts for the public sector are inclusive, sustainable and equitable.	able to mobilise and hold accountable a wide variety of stakeholders in the digital government ecosystem.	intrinsic in other policy areas. Check on the institutional model and mechanisms in place that can improve alignment, collaboration and co-ordination among stakeholders.
Practices	• **Norway**'s strategic collaborative council and advisory body is the Strategic Co-operation Council for Management and Co-ordination of eGovernment Services (SKATE), which brings together heads and directors from key public institutions from various policy areas. SKATE was established in 2012 as the principal policy advisor concerning the implementation and financing of digital and ICT measures. It is a strategic co-operation council for directors in selected public agencies and is chaired by the Agency for Public Management and eGovernment (Difi). • In **Slovenia**, the Government Council of Informatics Development in Public Administration, comprising secretaries of states of the leading public sector organisations, is responsible for the strategic leadership and co-ordination of the digital government policy. The Government Council has a threefold structure: the Strategic Council led by the Minister of Public Administration; the Co-ordination Working Group led by the State Secretary of the Ministry of Public Administration and is responsible for the preparation of proposals and action plans, co-ordination as well as compliance of digital government measures in line ministries and other public sector organisations; and the Operational Working Group led by the director of the Information Society and Informatics Directorate (OECD, 2021[62]). In 2021, new and additional co-ordinating structures were put in place with the appointment of a Minister for Digital Transformation, heading a new Digital Transformation Office and the Strategic Council for Digitalisation under the Office of the Prime Minister that prepares and discusses proposals for digital transformation across the public sector and policy areas (GOV.SI, 2021[63]).		

Sub-Dimension 2.3.2 Organisational and Technical Co-operation

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.3.2 Organisational and Technical Co-operation** points to institutional co-operation on an organisational and technical level that addresses the systemic processes underlying the tactical and operational layers during the execution stages.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The organisational and technical stakeholders in the digital government ecosystem exhibit strong and positive alignment, collaboration and co-ordinate among themselves such that the policy cycle and process is smooth.	The organisational and technical stakeholders in the digital government ecosystem exhibit good and positive alignment, collaboration and co-ordinate among themselves such that the policy cycle and process is fairly smooth.	The organisational and technical stakeholders in the digital government ecosystem exhibit marginal alignment, collaboration and co-ordinate among themselves such that the policy cycle and process is not very smooth.

Policy Questions	Is the organisational and technical co-operation oriented towards achieving a higher level of digital maturity in the government with spill over effects for the economy and society? Is the organisational and technical co-operation sustainable and stable regardless of political changes?	How can the leadership and/or responsibilities that are shared among the stakeholders be changed, consolidated or shifted such that the stakeholders are incentivised to have more ownership, co-operate and contribute more to the policy cycle and process?	Is the impediment or challenge to the organisational and technical co-operation political, institutional, technical or cultural? What can be done to reverse this and increase the potential for stronger alignment, collaboration and co-ordination among stakeholders?
Recommendations	Consider enabling the greater agility, innovativeness and adaptability in the organisational and technical co-operation on the digitalisation and data-driven agenda and efforts to make the public sector more inclusive, sustainable and equitable.	Examine an appropriate model of organisational and technical co-operation that is systemic in its thinking, culture and approach and is able to mobilise and hold accountable a wide variety of stakeholders in the digital government ecosystem.	Ensure that priorities for digitalisation are jointly designed and agreed, overarching, politically supported, and intrinsic in other policy areas. Check on the institutional model and mechanisms in place that can improve alignment, collaboration and co-ordination among stakeholders.
Practices	• **Brazil** has a primary institutional digital government co-ordination mechanism under the System for the Administration of Information Technologies Resources (SISP) that promotes alignment among the federal-level organisations on digital government policies and practices. Brazil's System for the Administration of Information Technologies Resources (SISP) is co-ordinated by the Brazilian Secretariat of Digital Government (DGS), the federal lead public sector organisation in digital government and brings together over 200 representatives of public bodies from the federal government. The SISP's objectives are to promote the integration and co-ordination among government programmes, objectives and activities; encourage the development, standardisation, integration, interoperability, normalisation of services of production and dissemination of information; and define the strategic policy for the management of ICT of the federal government. • **Slovenia**'s Governmental Council of Informatics Development in Public Administration contains within its threefold structure an operational working group led by the Director of the Information Society and Informatics Directorate. The operational working group is responsible for the implementation of activities, preparation and implementation of operational documents and work reports based on action plans. It provides consent to line ministries and government services to all projects or activities that result in the acquisition, maintenance, or development of IT equipment and solutions.		

Dimension 2.4 Civic Participation and Collaboration

Dimension 2.4 Civic Participation and Collaboration looks at the institutional arrangements and mechanisms for governments to involve people outside the public sector in the governance and development process towards a digitally mature and a data-driven public sector. It encompasses two main groups of external stakeholders: (i) citizens and (ii) the industry.

The OECD Recommendation of the Council on Open Government (2017) recognises that such stakeholder participation can build government accountability, expand citizens' empowerment and influence on decisions, increase civic capacity, improve the evidence base for policy making, reduce implementation costs, and tap on wider networks and ecosystems for innovation in policy making and service delivery (OECD, 2017[64]). Civic participation, therefore, encompasses the process of informing, consulting and engaging with stakeholders in the policy cycle and service design and delivery. Collaboration takes this a step further in enabling shared ownership, roles and responsibility between the public sector and citizens or businesses in creating and implementing policies, programmes and services. In these participative and collaborative processes, the government is better placed to research, understand and provide public services that meet the needs of its users (Welby and Tan, forthcoming[11]).

Sub-Dimension 2.4.1 Citizen Participation and Collaboration focuses on civic participation and collaboration with citizens and the broader civil society. *Sub-Dimension 2.4.2 Industry Participation and Collaboration* focuses on civic participation and collaboration with industry players, including businesses. These two sub-dimensions are mutually reinforcing in terms of inclusively bringing together the needs and resources of the economy and society for a holistic and sustainable digitalisation transition.

Sub-Dimension 2.4.1 Citizen Participation and Collaboration

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.4.1 Citizen Participation and Collaboration** points to institutional frameworks and mechanisms that governments can adopt to inform, consult and engage with citizens and civil society stakeholders in the wider external digital government ecosystem on the public policy design and implementation, and service design and delivery to advance on the digital government agenda.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	Citizens and civil society stakeholders in the external digital government ecosystem are always informed and consulted by the government. They engage in partnerships and collaborations with the public sector extensively, inclusively and in various parts of the policy cycle. Significant public value has been created from these initiatives.	Citizens and civil society stakeholders in the external digital government ecosystem are frequently informed and consulted by the government. They engage in partnerships and collaborations with the public sector less extensively, inclusively and in various parts of the policy cycle. A notable amount of public value has been created from these initiatives.	Citizens and civil society stakeholders in the external digital government ecosystem are informed and but not consulted by the government. They do not engage in partnerships and collaborations with the public sector. A sub-optimal amount of public value has been created from these marginal initiatives.
Policy Questions	Is citizen participation and collaboration treated as a way for the public sector to improve	How can the institutional frameworks and mechanisms be improved and leverage	At which levels of the government do the political and administrative leadership,

	its governance to be more transparent, legitimate and accountable? Do citizens and civil society stakeholders have real power and capability to propose and design initiatives or is the government still largely controlling the consultation and engagement process?	digital tools and data to incentivise regular public communication, consultation and engagement in relation to the development of digital government policies and programmes? Is the engagement of citizens and civil society stakeholders inclusive in involving both majority and minority segments of the population?	understanding and capacity for co-ordination and compliance lack for public sector organisations to inform, consult and engage with citizens and civil society stakeholders? Are citizens and civil society stakeholders aware of their rights to civic participation?
Recommendations	Formalise the institutional frameworks and mechanisms for encouraging and enabling citizen participation and collaboration, by incorporating them under existing rules for representative democracy. For example, create steering committees and thematic working groups involving a variety of civil society stakeholders to monitor and advise on the digital government and data agenda.	Provide the opportunity and resources for citizens and civil society stakeholders to engage. Ensure that citizens' and civil society organisations' are involved at every critical stage of the digital government and data policy design and implementation process. Be inclusive and active in the involvement of citizens, such as adopting a deliberative and democratic approach and not just stopping at consultation. Create monitoring and impact assessment tools that focus on the quality of engagement.	Inculcate a public sector culture that considers the right of those who are directly and indirectly impacted by government decisions to be involved in the decision-making process. Create institutional frameworks and mechanisms and conduct training programmes to co-ordinate and ensure compliance of public sector organisations on citizen participation and collaboration on the digitalisation of public services to start with.
Practices	• The **United Kingdom**'s Open Policy Making Toolkit is a manual that contains information, tools and techniques for policy makers to design more open and user-led policies. It supports policy makers in open policy making that is agile, includes co-design with users, relies on open data and user research, and shows how to measure its impact and success. "Co-designing with users" demonstrates how to work with users to understand their pain points and deign policies, products and services that solve their problems. This direct engagement with users, who would largely be citizens, ensures that the people who are most impacted are involved, consulted and share ownership of the process. The engagement can take the form of workshops, hack days and idea jams. • In **Spain**, the Madrid City Council developed and implemented a permanent deliberative body called City Observatory in 2019 comprising randomly selected citizens who are nonetheless representative of the population. It holds the mandate to propose and address solutions for societal well-being through regular meetings. The proposals are received through an online platform, decide.madrid. Over the years, the function and composition of City Observatory was reorganised and now comprises politicians and civil servants (OECD, 2020[65]). • In **France**, the Senate and National Assembly launched an online platform for citizen petitions for citizens to file and sign in 2020, which has a possibility of eventually being debated by the members of parliament. It aims to secure the right of petition for citizens. These petitions can relate to any matter of the public interest, such as cultural affairs and education; economic		

	affairs; foreign affairs; national defence and armed forces; sustainable development and land use planning; finances; general economy and budgetary control; constitutional laws, legislation and general administration. Petitions with more than 100,000 signatures would be brought to the attention of the President of the National Assembly and reviewed by the relevant standing committees.

Sub-Dimension 2.4.2 Industry Participation and Collaboration

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 2.4.2 Industry Participation and Collaboration** points to institutional frameworks and mechanisms that governments can adopt to inform, consult and engage with businesses and industry stakeholders in the wider external digital government ecosystem on the policy design and implementation, and service design and delivery process to advance on the digital government agenda. Industry stakeholders are a key source of information, innovation, creation and deployment of digital technologies that governments could engage with in the building of a digitally-enabled state. From digital infrastructure to architecture, points of engagement under public-private partnerships (PPPs) including the procurement of ICT/digital technologies, financing and investments, and open data and data sharing. However, it is crucial for governments to manage the industry engagement process to ensure that it is conducted with transparency, accountability and integrity; to ensure that stakeholders have fair and equitable access such that resources do not end up being concentrated in the hands of a few; and to identify capture risks (OECD, 2017[66]).

Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	Businesses and industry stakeholders in the external digital government ecosystem are always informed and consulted by the government. They engage in partnerships and collaborations with the public sector extensively, inclusively and in various parts of the policy cycle. Significant public value has been created from these initiatives.	Businesses and industry stakeholders in the external digital government ecosystem are sometimes informed and consulted by the government. They engage in partnerships and collaborations with the public sector fairly extensively, inclusively and in various parts of the policy cycle. A notable amount of public value has been created from these initiatives.	Businesses and industry stakeholders in the external digital government ecosystem are seldom informed and consulted by the government. They engage in partnerships and collaborations with the public sector not as extensively, inclusively and in restricted parts of the policy cycle. A sub-optimal amount of public value has been created from these initiatives.
Policy Questions	Is industry participation and collaboration conducted in a way that is transparent and of integrity such that the rest of the public sector and civil society is privy to and have a say in the process? Do interest groups and lobbyists among industry stakeholders not have undue influence to propose and design	How can the institutional frameworks and mechanisms be improved and leverage digital and data tools to incentivise regular public communication and consultation of digital government policies and programmes? Is the engagement of businesses and	At which levels of the government do the political and administrative leadership, understanding and capacity for co-ordination and compliance lack for public sector organisations to inform, consult and engage with businesses and industry stakeholders? Are businesses and industry

	initiatives that prioritises private interests over that of the public?	industry stakeholders inclusive in fairly involving start-ups, small and medium enterprises and multinational enterprises alike?	stakeholders incentivised to be involved in the public decision-making processes?
Recommendations	Formalise the institutional frameworks and mechanisms for regulating industry participation and collaboration to be aligned with the country's constitutional principles and democratic practices. For example, standardise the codes of conduct for interest groups and lobbying professionals and associations; establish formal public hearings and consultation processes with industry stakeholders on the digital government and data agenda.	Ensure that businesses' and industry stakeholders' are involved at every critical stage of the digital government and data policy design and implementation process. Be inclusive and active in the involvement of businesses, such as creating a level playing field for fair and equitable access to participate in the development of public policies and services. Create monitoring and impact assessment tools that focus on the quality of engagement.	Inculcate a public sector culture that considers the importance and benefits of involving businesses and industry stakeholders. Create institutional frameworks and mechanisms and conduct training programmes to co-ordinate and ensure compliance of public sector organisations on industry participation and collaboration on the digitalisation of public services to start with. Ensure that there is a solid foundation on rules and guidelines on lobbying.
Practices	• The **European Union** (EU)'s Commission has produced a comprehensive resource book on 'Guidelines for Successful Public-Private Partnerships (PPP)' as a practical tool for PPP practitioners to co-operate with the private sector on the delivery of a wide range of public services. Published in 2003 (European Commission, 2003[67]), the Guidelines ensure that in enabling participation and collaboration with the private sector, EU Member State governments: (i) ensure open market access and fair competition; (ii) protect the public interest and maximise value added; (iii) define the optimal level of grant financing to realise a viable and sustainable project; and (iv) assess the most effective type of PPP for a given project. This would allow PPP practitioners to manage contracts around complex technologies where it is not clear that the solution will match the need from the outset. It also provides greater flexibility and improved quality of public services than traditional ICT/digital procurement as a PPP contract allows greater economies of scale, innovation in service delivery, includes performance incentives and penalties, and enables greater integration of services with supporting assets. Other approaches to industry participation and collaboration include Pre-Commercial Procurement (PCP) as a way to develop innovative solutions from the demand side and Public Procurement of Innovative Solutions (PPI) for the public sector to be an early adopter of non-commercial solutions. • **Finland** regularly involves the whole digital government ecosystem including the private sector on the development of public services from legislation to service design and delivery. Finland had put out an open letter on the Further Digitalisation Project to collect ideas from the whole digital government ecosystem including the private sector on the development of public services. Finland's Act on Information Management in Public Administration 906/2019 was developed openly on Google Docs for the private sector and civil society to contribute. The adoption of AI in the public sector was conducted through public-private-people partnerships (PPPP) to ensure the design of citizen-centric services based on AI.		

5 Governance Facet 3: Policy Levers

Chapter 5 enumerates the policy instruments under Facet 3 of the OECD Framework on the Governance of Digital Government, which support public sector capacity for implementing digital government policies. They demonstrate the importance of setting in place the strategy and plan, project management tools, financial management mechanisms, and regulations and standards to ensure the sound and coherent management of digital government programmes, enablers, initiatives and public services.

The importance of policy instrument analysis

Policy levers are hard or soft instruments that policy makers can leverage to enable system-wide change in the public sector from strategy to implementation and delivery. They serve as the foundation on which critical enablers for digital government and data are built on. By using policy levers, governments can increase the effectiveness and efficiency of meeting the needs of citizens and businesses and creating value for them in a coherent and systemic way across the public sector.

Facet 3: Policy Levers draws on Pillar 3 of the OECD Recommendation of the Council on Digital Government Strategies (2014) "Capacities to Support Implementation". The third pillar calls for clear methods for value proposition (e.g. business cases), management and monitoring of the implementation, procurement of digital technologies based on an assessment of assets and appropriate regulatory frameworks. Together, they constitute the governance model for which the digital government programme can be implemented in the public sector. Similar to *Facet 2: Institutional Models*, *Facet 3: Policy Levers* also takes into consideration the principles in Pillar 1 of the OECD Recommendation of the Council on Digital Government Strategies (2014) "Openness and Engagement" in terms of enabling the participation of other stakeholders in strategy development, management processes, financing and regulation.

The following four dimensions aim to cover these fundamental elements (see Figure 5.1):

1. Strategy and Plan;
2. Project Management Tools;
3. Financial Management Mechanisms;
4. Regulations and Standards.

Figure 5.1. Governance Facet 3: Policy Levers

The dimensions and sub-dimensions of Facet 3: Policy Levers

Source: Author.

The presentation of *Facet 3: Policy Levers* is like *Facet 2: Institutional Models* since the dimensions and sub-dimensions that fall under *Facet 3: Policy Levers* are within the control of the government to implement and/or change. Each sub-dimensions' characteristics, policy questions and recommendations will be elaborated on according to three stages of governance: basic, intermediate and advanced. These stages are not intended to be absolute, but a general guide for policy makers to consider and self-assess.

Dimension 3.1 Strategy and Plan

Dimension 3.1 Strategy and Plan refers to a digital government strategy that sets the stage, structure and plan for the actions to be aligned with other policy objectives and to be carried out in an effective, efficient and organised manner. The digital government strategy should detail a vision, goals and milestones, the stakeholders and their respective activities.

Sub-Dimension 3.1.1 Autonomy and Alignment with other Policy Strategies looks at the digital government strategy's placement in respect to other government strategies. *Sub-Dimension 3.1.2 Collaboration and Inclusive Development* looks at the stakeholders' involvement and participation in the strategy. *Sub-Dimension 3.1.3 Action Plan and Investment Plan* looks at the tactical and operational part of the strategy. *Sub-Dimension 3.1.4 Monitoring and Impact Assessment* looks at how a sustainable and effective digitalisation programme of the public sector can be secured.

Sub-Dimension 3.1.1 Autonomy and Alignment with other Policy Strategies

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.1.1 Autonomy and Alignment with other Policy Strategies** addresses countries' approaches to their digital government strategies and how the strategies are placed in the government's agenda with respect to other strategies. Countries may opt for autonomous or embedded digital government strategies. Autonomous strategies are usually found in one single document while embedded strategies are included in a broader strategy such as a digital economy and society strategy or public sector reform strategy. In both cases, linking the digital government strategy with broader agendas is beneficial for coherence and collaboration within the public administration. A one-size-fits-all approach does not apply since benefits and disadvantages can be found in both cases.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The digital government strategy has a strong linkage with other government strategies, which is backed by governance measures and mechanisms that ensure strong coherence, effectiveness and efficiency in the design and implementation of the digital government strategy.	The digital government strategy has some linkage with other government strategies, which is backed by some governance measures and mechanisms that ensure moderate coherence, effectiveness and efficiency in the design and implementation of the digital government strategy.	The digital government strategy has little linkage with other government strategies, which is backed by very few measures and mechanisms that result in little coherence, effectiveness and efficiency in the design and implementation of the digital government strategy.
Policy Questions	Do the governance measures and mechanisms that link the digital government strategy with other government strategies ensure the required sustainability, flexibility and adaptability of the digitalisation of the public sector? Do the strategies' goals and objectives complement one another and	Which goals and projects of the digital government strategy and other government strategies can be linked and which governance measures and mechanisms can shared such that the coherence, effectiveness and efficiency of implementing the strategies can be enhanced?	Which other policy areas can the digital government strategy also improve in order to make the case that the digitalisation of the public sector is relevant for other government strategies such as education, business support, public health and safety? What are the challenges to establishing

	are oriented towards long-term development?		stronger governance measures and mechanisms?
Recommendations	Create stronger governance arrangements and mechanisms between the digital government strategy and other government strategies that consider and share not just the short-term plans of digitalisation, but the long-term priorities of creating a digitally mature public sector, economy and society.	Establish stronger governance arrangements and mechanisms between the digital government strategy and other government strategies that can link more goals and projects and improve the coherence, effectiveness and efficiency of implementing them.	Identify areas for complementarity, alignment and inter-reinforcement between digitalising the public sector with other policy areas. Develop or identify current measures and mechanisms that can link the digital government strategy, goals and projects with other government strategies.
Practices	• **Denmark**'s Digital Strategy 2016-2020 follows the model of an autonomous strategy. It envisages the co-ordination and alignment of public efforts, enabling the different sectors and levels of government to rethink workflows, processes and services to citizens and businesses. • **Panama**'s Digital Strategy 2014-2019 represents an embedded approach within the digitalisation of its economy, society and the government. It incorporates goals and objectives for the digital transformation of the public sector with that of the economy and society, along with improving the access of citizens to the Internet, digital literacy of the population and national competitiveness through digitalisation of the economy.		

Sub-Dimension 3.1.2 Collaborative and Inclusive Development

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.1.2 Collaborative and Inclusive Development** addresses the process of creating, developing to implementing and monitoring the digital government strategy within and outside the public sector, which is crucial for building legitimacy, consensus and support, establishing accountability and transparency and creating synergies among stakeholders in the digital government ecosystem. It specifically covers the activities of sharing information, holding consultations and conducting engagements in an agile and interactive way towards building consensus, co-creating and co-delivering in the context of develop a digital government strategy. Governments can also consider developing the green transition agenda alongside the digital development agenda towards a sustainable and resilient public sector and country. This policy lever should be considered alongside the overarching *Dimension 2.4 Civic Participation and Collaboration* that covers the institutional approach to openness and engagement. *Sub-Dimension 2.4.1 Citizen Participation and Collaboration* and *Sub-Dimension 2.4.2 Industry Participation and Collaboration* help governments understand the changing needs and preferences of stakeholders and translate them into concrete public policies and services. Users, where they are impacted, should be given a platform to voice their opinion and contribute.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The government enables strong collaboration and inclusive development of the digital	The government enables some collaboration and inclusive development of the digital	The government follows mostly a top-down approach, enabling minimal collaboration and

	government strategy among the ecosystem of digital government stakeholders through a variety of open, transparent and trustworthy methods during the entire strategy's lifecycle.	government strategy among the ecosystem of digital government stakeholders through some open, transparent and trustworthy methods during parts of the strategy's lifecycle.	inclusive development of the digital government strategy among the ecosystem of digital government stakeholders through a few open, transparent and trustworthy methods.
Policy Questions	Has the collaborative and inclusive development of the digital government strategy been closely aligned with other government strategies? Has it resulted in accountability, sustainability, resilience, innovation and delivering significant public value?	What other methods can the government explore to improve collaboration and inclusive development of the digital government strategy: crowdsourcing, public consultations, procurement models for implementation and openness for monitoring the strategy?	Where are the challenges for collaboration and inclusive development of the digital government strategy? How developed and mature is the ecosystem of digital government stakeholders, and what can be done to include and involve more stakeholders?
Recommendations	Increase the alignment and coherence of the digital government strategy with other government strategies through collaboration and inclusive development under the overarching aim of improving accountability, sustainability, resilience, innovation and delivering public value.	Test and reiterate more methods to improve collaboration and inclusive development of the digital government strategy in the ecosystem. Involve more relevant stakeholders from other policy areas with the appropriate governance measures and mechanisms.	Design a good foundation of governance measures and mechanisms, including collaborative design from start, that can develop the ecosystem of digital government stakeholders, enable collaboration and inclusive development of the digital government strategy and increase alignment with other government strategies.
Practices	• **Brazil**'s Digital Government Strategy (2020-2022) was developed through a wide consultation process, involving physical meetings and leveraging the consultation platform "Participa" for online meetings with public and private sector organisations. An inter-ministerial task force comprising ministries and independent agencies was organised for this purpose as a result of a public consultation in November 2019, bringing together 150 participants from 32 public and private sector organisations and 320 contributions from the civil society. The engagement of public and private stakeholders in the early stages of the process helped to identify the important pillars of the new strategy and to design a meaningful strategy that aligns with the needs of society, helping the government to address them in the upcoming years (gov.br, n.d.[68]).		

Sub-Dimension 3.1.3 Action Plan and Investment Plan

Importance and Implications of the	**Sub-Dimension 3.1.3 Action Plan and Investment Plan** covers the tactical and operational aspects for the execution and implementation phases of the digital government strategy. The action plan should feature how the strategy can be acted upon by specific stakeholders through various governance

Governance of Digital Government	measures and mechanisms such that their roles, responsibilities and deliverables are defined. The investment plan should address the financial resources needed to support the implementation of the action plan, and be assisted by the elements discussed in *Dimension 3.3 Financial Management Mechanisms*.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The action and investment plans of the digital government strategy are well developed and defined such that stakeholders are well informed of their roles, responsibilities and deliverables; and the financial resources are able to support the implementation.	The action and investment plans of the digital government strategy are fairly developed and defined such that stakeholders are quite informed of their roles, responsibilities and deliverables and the financial resources are able to support the implementation.	The action and investment plans of the digital government strategy are inexistent or not well developed and defined such that stakeholders are not well informed of their roles, responsibilities and deliverables and the financial resources are not sufficient in supporting the implementation.
Policy Questions	Are the action and investment plans also agile and adaptable according to changing contextual factors? Is the institutional model also able to sustainably support the execution and implementation of the plans?	How can the action and investment plans be better defined, co-ordinated and coherent to support a stable and flexible implementation of the digital government strategy? Can the government involve more stakeholders?	What is the stage of development of the digital government strategy? What are the challenges to developing the action and investment plans: political will, organisational leadership, strategy or stakeholder ecosystem?
Recommendations	Increase the agility and adaptability of the governance measures and mechanisms for the plans through stronger leadership without unnecessary bureaucracy, consistent feedback and ease of tweaking the plans.	Put in place stronger leadership with supporting governance measures and mechanisms to define, co-ordinate and monitor the plans while involving more stakeholders in the execution and implementation process.	Ensure that the digital government strategy is well developed and aligned with respect to other government strategies and in the digital government ecosystem. Leverage the leadership and momentum to develop the plans.
Practices	• **Lebanon** developed its Digital Transformation Strategy in 2018 and followed with an action plan in 2019. Lebanon's action plan that accompanies the Digital Transformation Strategy is intended to better define the necessary actions for public sector organisations responsible for undertaking them and the timeline for their implementation. It was seen as a need to guide policy action, prioritise efforts and secure alignment across government sectors (OECD, 2020[28]). • **Japan** uses the Digital Government Action Plan to put the strategy into concrete actions and enable efficient investments for government information systems. Through the Digital Government Action Plan, Japan has started the implementation of the centralised programme management to unify the government information systems and deployment of cloud computing.		

Sub-Dimension 3.1.4 Monitoring and Impact Assessment

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.1.4 Monitoring and Impact Assessment** is an important part of the set of governance measures and mechanisms to ensure a proper implementation and accountability of the digital government strategy and plans. They involve setting out key performance indicators (KPIs) in an open and transparent way, and according to the stated goals and deliverables for each stakeholder involved and evaluating the outputs, outcomes and impact achieved such that continual improvement of the digital government strategy can be done. International standards and indices can also serve as good benchmarks. User impact and being user-driven should be a key feature as a key dimension under monitoring and impact assessment.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The government has highly developed monitoring and impact assessment tools that monitor progresses in the implementation of the strategy and plans, incentivise accountability and allow the feedback to be used to improve outcomes.	The government has fairly developed monitoring and impact assessment tools that monitor the implementation of the strategy and plans and incentivise accountability.	The government has minimally developed monitoring and impact assessment tools for monitoring, assessing and evaluating the implementation of the strategy and plans.
Policy Questions	Can the government leverage the monitoring and impact assessment tools to practice openness and transparency with the wider ecosystem of digital government stakeholders such that public value can be enhanced?	How can the government further develop the monitoring and impact assessment tools among stakeholders involved in the implementation process: skills and capabilities, public sector culture or governance measures and mechanisms?	What is lacking in the monitoring and impact assessment of the strategy and plans: definition of KPIs; measurement of outputs, outcomes and impact or deeper involvement of relevant stakeholders to adhere to the measures and mechanisms?
Recommendations	Consider publishing data and information about the outputs, outcomes and impact of the digitalisation process to the public or the ecosystem of stakeholders. Leverage feedback channels to strengthen the strategy and plans.	Evaluate where the monitoring and impact assessment tools need to be further developed. Channel the necessary resources to securing this part of the execution and implementation process to improve the outputs and outcomes.	Ensure that there is first a strong foundation of governance measures and mechanisms among the digital government stakeholders involved in the process such that the monitoring and impact assessment tools will be adhered to and used effectively.
Practices	• **Australia**'s Digital Transformation Strategy details three priorities, 13 objectives, measurements and case studies to explain to citizens what the government is doing and how it is achieving them. It contains a roadmap of initiatives and a dashboard for citizens and		

	businesses to follow its implementation and hold the government accountable to its commitments. The government made a commitment to provide annual updates with a performance report on the preceding year's initiatives (Australian Government, n.d.[69]). Australia also has initiatives to promote openness such as the Victorian Government IT Dashboard that reports on its projects of more than AUD 1 million (Digital Strategy and Transformation, n.d.[70]). • **Colombia** has an impact assessment methodology for its Online Government Strategy. The impact assessment methodology is intended to reinforce the efficiency and sustainability of its Online Government Strategy, better monitor the outputs, outcomes and impacts.

Dimension 3.2 Project Management Tools

Dimension 3.2 Project Management Tools covers standardised and common governance measures and mechanisms that specifically address the execution and implementation of the strategy and plans at a project- and programme-level. They can be used by civil servants at all levels of the government to ensure the effective and efficient delivery of results.

Sub-Dimension 3.2.1 Value Proposition – Business Cases covers the first step of justifying for the need and value of a project. *Sub-Dimension 3.2.2 Agile Project Management* covers the management methodology and importance of agility and innovativeness in the design and implementation process. Sub-*Dimension 3.2.3 Procurement of ICT/Digital Technologies* covers the process of purchasing the needed technologies to materialise the value of the digital government initiatives.

Sub-Dimension 3.2.1 Value Proposition – Business Cases

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.2.1 Value Proposition – Business Cases** is important for justifying the financing and investing of ICT/digital government projects and programmes in terms of public value creation and public service delivery. They ensure that there is a strong case for requiring public and private resources such that there is support for the digital government policies and initiatives. Where applicable, governments should consider exchanging and collaborating with ministries of finance and central budget authorities in the development of business cases for greater capacity support. Green transition considerations can also feature as an important criterion in the evaluation of business cases.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The businesses cases for ICT/digital government initiatives are strong, coherent, developed and transparent such that digital government financing and investments are well planned, executed and monitored towards producing significant public value and mitigating risks.	The businesses cases for ICT/digital government initiatives are moderately strong, coherent, developed and transparent such that digital government financing and investments are fairly planned, executed and monitored towards producing significant public value and mitigating risks.	The businesses cases for ICT/digital government initiatives are inexistent or not very strong, coherent, developed and transparent such that digital government financing and investments are not well planned executed and monitored towards producing significant public value and mitigating risks.
Policy Questions	Can the business cases be integrated more into the decision-making and co-ordinating process such that as many public and private stakeholders are informed and supporting the relevant initiatives, beyond the financing and investing project managers? Are the benefits distinguished between financial	How can the business cases be more developed, comprehensive and involve the wide ecosystem of digital government stakeholders? Are there common languages, rules and guidelines for using business cases? Which governance measures and mechanisms can be leveraged?	What are the challenges for using and developing and incorporating stronger business cases in the decision-making and co-ordinating process? What is most lacking in the application of the business case methodology: governance, costs or benefits?

	and non-financial and among different sectors?		
Recommendations	Endeavour to design and leverage this management tool in collaboration with appropriate public and private stakeholders across the digital government ecosystem openly and with accountability such that the digital government initiatives are well implemented. Set out clear principles for the use of business cases.	Ensure that the business cases are transparent, take into account the wider context, consider economic and non-economic value and are specific to each initiative's development, implementation, monitoring and improvement. Secure synergies with other policy levers such as pre-evaluation of ICT/digital investments, project management or budgeting.	Increase the awareness and understanding of the business case methodology and practice through training for financing and investing project managers and the wider ecosystem. Encourage co-ordination on the business cases and projects.
Practices	• **New Zealand**'s Better Business Cases (BBC) is a methodology developed to enable smart investment decisions for public value. It involves the use of a business case to demonstrate that a proposed investment is strategically aligned, represents value for money and is achievable. Using it should allow decision-makers to invest with confidence, reduce the costs and time for developing business cases (The Treasury, n.d.[71]). • **Denmark**'s joint-governance IT project and programme and business case models are mandatory to ensure project success especially for those with more than EUR 1.35 million budget. It is intended to justify if the IT project is a good investment, based on a calculation of the overall financial and non-financial consequences of a potential investment in an IT project or programme. It involves an analysis and statement of change desires and the approach taken to achieve it (Nielsen and Yasuoka, 2014[72]). • The **OECD Business Case Playbook**, developed with the OECD E-Leaders Thematic Group on Business Cases under the leadership of Australia's Digital Transformation Agency (DTA), covers the following three groups of principles: 1) governance (establish a common language; make mandatory rules and guidelines; enforce the usage of the business case; ensure value of the business case); 2) costs (ensure a clear scope of the business case; identify potential risks and their consequences; include uncertainties or bandwidths in the economic estimations); 3) benefits (be specific, measurable, achievable, relevant and time-bound; distinguish between financial and non-financial benefits; distinguish between societal, public sectorial and institutional benefits) (DTA, n.d.[73]).		

Sub-Dimension 3.2.2 Agile Project Management

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.2.2 Agile Project Management** emphasises the importance of adopting an agile approach to managing ICT/digital government projects and programmes in the public sector, including public services. This means that their design and execution should be efficient and effective in the sense that there must be strategic foresight: opportunities are quickly seized, risks are quickly mitigated and changes are quickly made based on a continuous cycle of diagnosis, feedback and iteration. Experimentation, learning and feedback feature as key elements in the agile approach. This is in contrast to a ""waterfall" approach where tasks are undertaken in a linear, systematic and rather rigid fashion (Welby and Tan, forthcoming[11]).

Stages of Governance	Advanced	Intermediate	Basic
Characteristics	The digital government initiatives are undertaken with a very agile and innovative national/federal approach to project management, taking into account inputs from a variety of stakeholders and sources and relying on strong governance structures and processes that are open and trustworthy.	The digital government initiatives are undertaken with a fairly agile and innovative approach to project management, although not widespread across the public sector, taking into account some inputs from stakeholders and sources and relying on good governance structures and processes that are open and trustworthy.	The digital government initiatives are not optimally undertaken with an agile and innovative approach to project management, barely taking into account inputs from a variety of stakeholders and sources and relying on delicate governance structures and processes that are open and trustworthy.
Policy Questions	Can this agile approach to project management also include better data and information intelligence from the use of technologies such as big data analytics and machine learning? Is the approach standardised and aligned across the public sector?	How can this agile approach to project management be improved in terms of forecasting, information exchange and feedback loops, be widespread across the public sector and co-ordinate with a wider group of relevant government stakeholders?	What are the challenges for the government to undertake more agile and innovative approaches to project management across the public sector, involve more stakeholders and sources and establish more robust governance structures and processes?
Recommendations	Appraise how this agile approach to digital government initiatives can be sharpened based on the use of emerging digital technologies and data, involvement from more stakeholders and alignment with other policy areas.	Consider improving common project management dashboards and systems that include the necessary functions to improve strategic foresight, communication, collaboration and co-ordination.	Begin with putting in place governance measures and mechanisms that encourage agile and open co-operation, co-ordination and response among relevant project managers.
Practices	• **Denmark**'s Agency of Digitalisation has a cross-governmental ICT project management model to harmonise the management of the ICT projects across the public sector from conceptualisation to realisation of benefits. This model provides a standardised way of managing ICT projects across the government. Based on the United Kingdom's ICT project model, Prince2, it provides guidelines for how to organise and manage ICT projects and delivers concrete templates for all generic products in the process. The Ministry of Finance has created a unit to establish good practice on digital government projects that covers mandatory and recommended elements. The model has enabled the establishment of a specific governance structure, for example, requiring approvals of well-developed business cases, as well as ongoing approvals (so called "stop-go" decisions) each time a project passes from one phase to the next.		

Sub-Dimension 3.2.3 Procurement of ICT/Digital Technologies

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.2.3 Procurement of ICT/Digital Technologies** supports the development and implementation of agile digital government projects and programmes through ensuring the timely, economical and efficient acquisition and delivery of goods and services, mostly from the private sector. Broadly, public procurement is a key activity of the public sector that involves the process of identifying the need, determining the best supplier and ensuring delivery at the right place, at the right time and for the best price in a fair an open manner (OECD, 2015[74]). In 2019, it accounted for 12.07% of GDP and 29.56% of total government expenditures in the OECD countries. (OECD, 2021[75]) Given the sheer volume of spending it represents, public procurement can play an essential role in fostering public sector efficiency and establishing citizens' trust. Furthermore, the COVID-19 revealed showed that public procurement was a critical policy instrument through which governments could provide quick, innovative and effective digital responses (OECD, forthcoming[76]). The 11th principle of the Recommendation of the Council on Digital Government Strategies (2014) calls for the procurement of digital technologies based on an assessment of "existing assets including digital skills, job profiles, technologies, contracts, inter-agency agreements to increase efficiency, support innovation, and best sustain objectives stated in the overall public sector modernisation agenda. Procurement and contracting rules should be updated, as appropriate, to make them compatible with modern ways of developing and deploying digital technology" (OECD, 2014[2]). The public procurement cycle takes place in a sequence of needs assessment, market research, tender process, payment and contract management with the delivery of the necessary goods and services based on policy objectives (OECD, 2015[74]). Procurement activities are subject to monitoring and auditing, and should avoid vendor lock-in. As new considerations emerge for selecting ICT/digital technology providers, OECD member countries have started to experiment with more innovative and flexible use of their existing public procurement frameworks to purchase ICT/digital goods and services whilst paying more attention to the centralisation and professionalisation of government ICT/digital functions, including purchases (OECD, forthcoming[76]). In the context of the procurement of ICT/digital technologies, it is also essential to promote the use of new schemes of public procurement for innovation such as innovation partnerships in order to seek innovative solutions that responds better to specific needs and that might not be available in the market (OECD, 2017[77]). Agile approach to procurement practices should engage the market and suppliers earlier on, include user-driven considerations and feedback loops (e.g preliminary market consultation), and involve the relevant stakeholders in the process (e.g. public servants from legal, commercial and service delivery) (OECD, forthcoming[76]). They should also promote the use of Most Economically Advantageous Tender (MEAT) criteria in public procurement procedures to award contracts not only based on the price but also on the quality and to avoid the use of extremely detailed technical descriptions, which is essential in the context of ICT procurement. Governments that have a robust procurement strategy as such, are more agile in managing ICT/digital investments based on policy objectives and towards achieving holistic economic and societal development outcomes. Good public procurement practices should improve the efficiency and effectiveness of channelling finances and resources to the necessary policy objectives such as digitalisation, green growth, the development and participation of small and medium enterprises, promotion of competition and responsible business conduct, to name a few.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**

Characteristics	The procurement processes of ICT/digital technologies are well supported by fair procurement laws and new techniques that enable agility and iterative distribution. There is strong accountability, transparency and effectiveness in the management of resources.	The procurement processes of ICT/digital technologies are limitedly supported by procurement laws and new techniques that enable agility and iterative distribution. There is room for improvement in terms of accountability, transparency and effectiveness in the management of resources.	The procurement processes of ICT/digital technologies are supported by procurement laws that clearly need to be updated to respond to the digital transformation. There is limited accountability, transparency and effectiveness in the management of resources.
Policy Questions	Are the current ICT/digital procurement processes flexible, adaptable and sustainable in the face of fast changing technological developments? How innovative and experimental are the approaches and is public procurement used to stimulate innovation in the public sector? Do the approaches employ data-driven, user-driven and open processes that enable inclusive access on a digital platform with monitoring techniques?	Is there a central ICT/digital inventory and database for stakeholders to consult openly such that they can undertake joint procurement processes and effectively co-ordinate on the management and use of resources? Are the procurement processes for ICT and digital technologies conducted based on a comprehensive priority and needs assessments?	Where can the structure for procurement of ICT/digital technologies be improved: legislation, governance frameworks for co-ordination and surveillance, mutual facilities that enable information exchange and resource sharing? Are the processes transparent and ethical across the government and conducted with respect to policy goals?
Recommendations	Evaluate the current procurement processes for ICT/digital technologies in terms of being able to incorporate new and emerging technologies and to be used across other sectors and levels of the administration under broader public sector strategies. Be open by default in opening government data on procurement, budgeting and enable easy access by public sector organisations, suppliers and citizens.	Strengthen the deployment of a central and comprehensive ICT/digital inventory that encompasses property, era, lifespan, a catalogue of public services and a database of contracts and interagency arrangements. Include also business cases and delivery.	Establish appropriate governance frameworks and a coherent and versatile strategy for (joint) procurement and deployment that can adequately meet the objectives of the digital government initiatives, e.g. research, policy design, business cases. Prioritise including interactions with users.
Practices	• **Ireland**'s Dynamic Purchasing System (DPS) is a procedure for public sector organisations to contract works, services and goods available in the market. It is an open electronic-based system where new suppliers can request for admission any time, allowing public sector organisations to freely acquire "off-the-shelf" solutions. Building on the exclusion grounds and selection criteria in the European Single Procurement Document (Regulation (EU) 2016/7) and the European Union directive (Directive 2014/24/EU) on public procurement, this		

mechanism provides an agile framework for both buyers and suppliers lowering transaction costs of public procurement (OGP.GOV.IE, 2019[78]).

- The **United Kingdom**'s Digital Marketplace is a portal where public sector organisations can find people, suppliers, technology and framework agreements for digital government projects involving cloud services, digital specialist services and data centre hosting services. It is considered as a reference due to the amount of government framework agreements that are highly developed and easily accessible online, making the purchasing of services faster and cheaper than entering individual procurement contracts (GOV.UK, n.d.[79]).
- **Poland**'s Public Procurement Office published a 'Public Procurement of Innovation' handbook, which describes the concept of public procurement for innovation and pre-commercial procurement, and demonstrates good practices from a wide range of contracting authorities (i.e. central government, local government, and academic sector) in Poland. It showed that pre-commercial procurement leads to the development of technology demonstrators, which can serve as a basis for contractors made by units that will be able to directly use the product/solution (Public Procurement Office of Poland, 2020[80]).
- The **United Kingdom** and the OECD designed the ICT Commissioning Playbook, which describes how procurement can take on an agile procurement approach. Supported by case studies, it outlines actions such as opening up data throughout the procurement and contracting lifecycle; promoting more modular and agile approaches to contracting; securing procurement transparency to help tackle corruption and improve value for money; stimulating and accessing a more diverse digital and technology supply base; stimulating more flexible, digital, agile and transparent interactions focused on joined delivery; and sharing and reusing platforms, components and better practices for delivering successful programmes (GDS, n.d.[81]).

Dimension 3.3 Financial Management Mechanisms

Dimension 3.3 Financial Management Mechanisms contains another set of policy instruments that addresses the management and implementation of the investment plan. They provide the means for which the projects and programmes under the digital government strategy and action plan can be achieved.

Sub-Dimension 3.3.1 Budgeting/Budget Threshold refers to a financial plan that would enable the fruition of a project or programme. *Sub-Dimension 3.3.2 Co-Funding* refers to a funding agreement for the financing of a project or programme.

Sub-Dimension 3.3.1 Budgeting/Budget Threshold

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.3.1 Budgeting/Budget Threshold** refers to financial tools that governments have in place to plan and operationalise ICT/digital investments. A budget is "a comprehensive statement of government financial plans which include expenditures, revenues, deficit or surplus and financing. The budget is the government's main economic policy document, demonstrating how the government plans to use public resources to meet policy goals" (OECD, 2018[82]). A budget threshold is a management tool to streamline internal procedures, for example setting fast-track procedures for implementing investments under a certain limit for ICT/digital investments, boosting agility in the implementation of the digital government strategy. The budgeting should be clear, transparent and supportive of the priorities of digital government initiatives through channelling the necessary resources and finances for each project and programme.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The budget and budget thresholds are used effectively by the government to channel the necessary finances and resources to achieve an efficient implementation of priority digital government projects and programmes with the achievement of outcomes.	The budget and budget thresholds are used fairly effectively by the government to channel the necessary finances and resources to achieve an efficient implementation of important digital government projects and programmes with the achievement of outcomes.	The budget is used less than effectively by the government to channel the necessary finances and resources to achieve a marginally efficient implementation of unfocused digital government projects and programmes with some achievement of outcomes. ICT/digital budget thresholds are inexistent.
Policy Questions	Can the government improve flexibility and transparency in budgetary practices and incorporate sustainability into budgetary considerations for digital government projects and programmes?	What is needed to strengthen the use of budget and budgetary thresholds for digital government initiatives: stronger collaboration with the budgeting department; more robust digital and ICT investment laws? How can digital and data needs of the public sector be considered in a coherent and sustainable	What is lacking in order to put in place a proper budgetary process for digital government projects and programmes: leadership, expertise, governance frameworks, resources and supporting legislations?

		manner in the definition of the national/federal budget?	
Recommendations	Consider adopting technologies, data-driven decision-making and sustainability considerations in the budgetary practices to improve flexibility and sustainability in the allocation of finances and resources.	Refine the budgeting model and process for ICT/digital, aligning investments plans with relevant budgeting authorities helping develop stronger governance frameworks for ICT/digital investment.	Focus first on putting in place a clear digital government agenda with specific projects that have action and investment plans – after which it will be easier to have an oversight on the finances and resources needed to effectively develop budgets and define a budget threshold mechanism.
Practices	• **Norway** uses financial levers to build a systemic ICT project quality management culture in the Digitalisation Memorandum. Its annual central budgeting process and budget allocation from the Ministry of Finance involves the assessment of ministries' ICT project proposals underlined as ICT projects quality control mechanisms. The aim is to ensure that ICT projects have an emphasis on the simplification and improvement of public services and the overall improvement of public sector's efficiency. • In **Portugal**, ICT and digital projects with a budget of EUR 10 000 or more must be pre-approved by the Administrative Modernisation Agency (AMA). The AMA verifies compliance with guidelines, the non-duplication of efforts, and compared the prices and budgets with previous projects in order to ensure the best value for money.		

Sub-Dimension 3.3.2 Co-Funding

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.3.2 Co-Funding** refers to the underlying processes of financing projects and programmes by involving two or more entities (including local or national governments, external donors, development banks and international funds) to share a formal arrangement and agreement in the funding. The process for financing digital government initiatives should involve the leading public sector organisation on the digital government agenda to participate and/or have oversight over the financing and investing of the initiatives. The financing should have flexible, standardised guidelines for which budgetary approval and co-funding agreements are made.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The co-funding of digital government initiatives is well apportioned among two or more entities, including the public sector organisation leading the digital government policy, effectively detailing the sharing of responsibilities and involving and empowering the appropriate stakeholders from	The co-funding of digital government initiatives is apportioned among two or more entities, with the oversight of the public sector organisation leading the digital government policy, quite effectively detailing the sharing of responsibilities and involving and empowering the appropriate stakeholders	The co-funding of digital government initiatives is inexistent or non-co-ordinated, not foreseeing any specific role of the public sector organisation leading the digital government policy.

	the public, private or civil society sectors.	from the public, private or civil society sectors.	
Policy Questions	How can the co-funding mechanisms be better designed to ensure that the management and financing responsibilities are fairly shared based on good relations among the relevant stakeholders such that the projects and programmes are sustainable?	Is there a good set of guidelines for the funding processes from design to involvement of other stakeholders in co-funding and approval by lead public sector organisations? Are the principles of transparency and accountability incorporated in the funding processes?	What is the lead public sector organisation that takes charge of the funding processes? How extensive is its powers and duties in involving various stakeholders to participate in the process? Is there a proper set of guidelines for the funding processes? What could be the role of the public sector organisation leading the digital government policy
Recommendations	Focus on strengthening relations with stakeholders and developing a culture of sharing responsibilities, empowering and encouraging innovating for digital government initiatives towards the long-term sustainability of digitalisation.	Involve the relevant stakeholders openly in the funding processes. Ensure that there is transparency of data and information in order to instil financial and management accountability and that the initiatives are financially optimised.	Appoint a lead public sector organisation to oversee the funding process of initiatives, deeply considering the attribution of this role to the public sector organisation leading the digital government policy, and ensure close alignment and co-ordination with the strategy, action and investment plans through governance measures and mechanisms.
Practices	• **Portugal**'s Administrative Modernisation Agency (AMA) manages the administration modernisation funding programme, which is composed of European Union structural funds and national resources It serves as an attractive source of funding for public sector organisations to develop new ICT and digital projects. It also provides important institutional leverage to the AMA in approving the funding for digital government projects, conditioned on compliance with existing guidelines.		

Dimension 3.4 Regulation and Standards

Dimension 3.4 Regulations and Standards covers regulatory frameworks, standards, principles, guidelines and regulatory co-operation as a crucial set of policy instruments that serve as the backbone of the policies, measures, governance arrangements and mechanisms for digital government that were presented in the other dimensions and sub-dimensions. They establish the binding and non-binding rules that guide the planning, implementation and monitoring of digital government strategies, enabling changes in behaviour and processes in order to fulfil policy objectives.

Sub-Dimension 3.4.1 Regulatory Frameworks specifies the system taken to establish binding regulations around the enablers that support digitalisation. *Sub-Dimension 3.4.2 Standards, Principles and Guidelines* specifies the non-binding normative standards that guide the system-wide operationalisation of the digital government strategy. *Sub-Dimension 3.4.3 Regulatory Co-operation with Industry Players* specifies a method of creating, managing and implementing the regulations among two or more entities between the private and the private sector.

Sub-Dimension 3.4.1 Regulatory Frameworks

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.4.1 Regulatory Frameworks** refers to a diverse set of policy instruments by which governments set requirements on citizens and businesses, which include all laws, formal and informal orders, subordinate rules, administrative formalities and rules issued by bodies with regulatory powers (OECD, 2018[83]). In the context of digital government, regulatory frameworks provide a crucial foundation for promoting and enabling the digital transformation of the public sector. The 12th principle of the Recommendation of the Council on Digital Government Strategies (2014) calls for "general and sector-specific legal and regulatory frameworks [that] allow digital opportunities to be seized by reviewing them as appropriate; and including assessment of the implications of new legislations on governments' digital needs as part of the regulatory impact assessment process" (OECD, 2014[2]). Some regulatory practices fit for the digital age include broad public and stakeholder engagement; consideration of the international innovation ecosystem; stronger co-ordination and collaboration across policy making and regulatory units in the government; collaboration with external stakeholders on research, monitoring and advice; regulatory sandboxes under supervision and observation; and a "wait-and-see" approach with continuous assessments and reviews (OECD, 2019[84]). Regulatory frameworks provide the grounds and boundaries for experimentation and adoption of digital technologies and data. They express the government's leadership, commitment and willingness to seize the potential of digital technologies and data to improve socio-economic conditions for its citizens and businesses. Creating a regulatory environment that supports innovation and the use of digital tools in line with human-centred principles is, therefore, key for attaining digital maturity. The domains for digital and data legislation and regulation can be classified into three broad categories: (i) digital rights of citizens and businesses (e.g. once-only, access to public sector information and base registries, transparent and ethical use of data, privacy and personal data protection, cyber security); (ii) digital enablers and infrastructure (e.g. digital documents, digital signatures, digital identification, interoperability, ICT/digital procurement) (OECD, 2019[13]); and (iii) digital principles including the six dimensions of the OECD Digital Government Policy Framework (i.e. digital by design, data-driven, government as a platform, open by default, user-driven, proactiveness) (OECD, 2020[12]). Finally, the pace of innovation raises a need for governments to develop more agile approaches to regulatory governance. In this context, digital governments can also help to capitalise on technological solutions to improve the quality of evidence and enhance regulatory delivery. Through the draft Recommendation of the Council for Agile Regulatory Governance to Harness Innovation, the OECD provides principles to help governments develop agile approaches in regulatory policy and governance

	to realise the benefits of innovation (beyond the public sector) while addressing its risks. These principles include adjusting regulatory management tools to be fit for the future, laying institutional foundations to enable co-operation and joined-up approaches within and across jurisdictions, developing governance frameworks to enable the development of agile and future-proof regulation, and adapting regulatory enforcement strategies and activities to promote compliance, help innovators navigate the regulatory environment and uphold public protection including across jurisdictions (OECD, 2021[85]). For further details on harnessing innovation through agile regulatory governance (beyond the scope of digital government), see the draft Recommendation of the Council for Agile Regulatory Governance to Harness Innovation (OECD, 2021[85]) as well as the accompanying Practical Guidance on Agile Regulatory Governance to Harness Innovation (OECD, 2021[86]).		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The regulatory frameworks are updated and comprehensive in covering all digital government and data domains, involving relevant stakeholders among the regulators and regulated such that the public benefits are maximised equitably. Regulatory and policy officials actively ensure that regulations are up to date and assessed in terms of impact on digital government needs.	The regulatory frameworks are quite comprehensive in covering most of digital government areas and initiatives, involving relevant stakeholders among the regulators and regulated such that the public benefits are maximised equitably. Updates and impact assessments on digital government needs are conducted occasionally in specific areas.	The regulatory frameworks are less than comprehensive in covering all digital government areas and initiatives, involving relevant stakeholders among the regulators and regulated such that the public benefits are maximised equitably. The lack of updates in critical areas and impact assessments on digital government needs is blocking further digital government development in the country.
Policy Questions	Are the regulatory frameworks for supporting digital government resilient, flexible and adaptable to contextual changes and the evolving complexities of new technological developments? Are there arrangements and mechanisms among regulatory authorities on the monitoring and compliance of the regulatory frameworks for supporting digital government?	Is there sufficient regulatory coherence and co-ordination among different sectors and across different levels of government on cross-cutting digital government regulatory issues, such that there is minimal duplication or conflict of regulations? How to accelerate the required update in specific areas?	How can the regulatory frameworks be further integrated into the digital government strategy? What is blocking the update and review of some key regulatory frameworks? How should the regulatory management capacity and performance at various sectors and levels of government be improved?
Recommendations	Incorporate a continuous and consistent policy cycle and process in the regulatory frameworks for supporting digital government, from identifying policy objectives to design and evaluation, such	Strengthen the regulatory frameworks in line with the objectives of digital government policies and initiatives through co-ordinated ex ante impact assessment and ex post evaluation across the	Ensure that the regulatory frameworks for supporting digital government are consulted by a wide variety of digital government stakeholders, secures the necessary political support and

	that there is clarity, agility, transparency and responsiveness in identifying and seizing digitalisation opportunities. Put in place independent bodies and impact assessment tools to monitor and ensure compliance of the laws and regulations.	government (OECD, 2012[87]). Build on the involvement of different stakeholders to secure political and administrative support for the regulatory framework updates.	covers existing initiatives by ensuring the costs of regulation do not compromise the objectives of digital government policies and initiatives.
Practices	• The **European Union**'s recent legislations and regulations that address digital and data governance include the Services Directive (Directive 2006/123/EC) to establish a single market for services, simplify administrative procedures and create points of single contact (EUR-Lex, 2006[88]); the eIDAS Regulation (Regulation (EU) 910/2014) on electronic identification and trust services for electronic transactions in the internal market (EUR-Lex, 2014[89]); the General Data Protection Regulation (Regulation (EU) 2016/679) on the processing of personal data through new legal obligations on the storage and usage of personal data for its citizens (EUR-Lex, 2016[90]); the Cybersecurity Act (Regulation (EU) 2019/881) on the European Union Agency for Cybersecurity and related certification (EUR-Lex, 2019[91]). • **Australia**'s Trusted Digital Identity Framework (TDIF) delineates rules and standards for providers and services in Australia's digital identity system to meet in order to receive accreditation. It also provides guidance material and templates on meeting TDIF requirements, for instance in the areas of accessibility, usability, privacy protection, security and fraud control, risk management, technical integrity (Australian Government, n.d.[92]).		

Sub-Dimension 3.4.2 Standards, Principles and Guidelines

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.4.2 Standards, Principles and Guidelines** focuses on the normative non-binding frameworks that provide common guidance on implementation approaches to the adoption of digital technologies and data in the public sector and support digital government. In other words, they are soft mechanisms such as voluntary standards, codes and principles of practice and guidelines to navigate the regulatory landscape. Digital government and data standards, principles and guidelines can cover a wide range of legal and regulatory domains (presented in *Sub-Dimension 3.4.1 Regulatory Frameworks*) where establishing shared rules, models and criteria is critical for a coherent transformation. They offer greater flexibility in the implementation process, which is needed for a regulatory environment that is conducive for innovation. They also ensure that there is a fair and level playing field for all stakeholders in the ecosystem (OECD, 2021[85]).		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**
Characteristics	The standards, principles and guidelines are comprehensive and complementary to the	The standards, principles and guidelines are quite comprehensive and	The standards, principles and guidelines are not comprehensive and

	underlying regulatory frameworks, and are underpinned by the relevant liability laws and provisions. Regulatory and policy officers work with agility and flexibility in designing these standards, principles and guidelines in tune with the development of the digital government agenda, technological developments and innovations.	complementary to the underlying regulatory frameworks, and are underpinned by the relevant liability laws and provisions. Regulatory and policy officers work with some agility and flexibility in designing these standards, principles and guidelines in tune with the development of the digital government agenda, technological developments and innovations.	complementary to the underlying regulatory frameworks, and are not underpinned by the relevant liability laws and provisions. Regulatory and policy officers work with little agility and flexibility in designing these standards, principles and guidelines in tune with the development of the digital government agenda, technological developments and innovations.
Policy Questions	Does the government ensure that the standards, principles and guidelines respond to the needs and interests of stakeholders in the public sector and the broader digital government ecosystem? Does the government engage extensively with public and private sector players that are driving innovation and promoting open standards to support the development of digital government?	Is the government able to monitor and evaluate the effectiveness of the standards, principles and guidelines with the target stakeholders? Do the standards, principles and guidelines contribute to the overall collection of shared tools and resources in the digital government ecosystem for the government to operate well as a platform?	Is the reason for regulatory uncertainty and lack of innovation and collaboration due to insufficient standards, principles and guidelines or insufficient engagement with stakeholders in the digital government ecosystem? How can regulatory and policy officers better engage in the design of standards, principles and guidelines?
Recommendations	Establish open and regular standard, principle and guideline development processes with the digital government ecosystem to foster exchange on regulatory needs, gaps and collaboration on innovation. Promote the creation and sharing of open standards. Conduct regular reviews on these standards, principles and guidelines openly and inclusively with the ecosystem to adapt to recent technological advancements.	Ensure that the design and publication process of the standards, principles and guidelines for digital government is well communicated to and understood by the stakeholders. Embed data and feedback collection processes in the design and publication process such that regulatory and policy officers are able to collect the necessary information for monitoring and evaluation.	Develop guidance on the current regulatory landscape through standards, principles and guidelines to support regulatory compliance. Create an attractive incentive system to foster adoption of standards, principles and guidelines.
Practices	• **Argentina**'s Decálogo Tecnológico (Tech Decalogue) principles set out standardised guidelines for public sector organisations to follow in developing ICT and digital project proposal for certification by the National Office of Information Technologies (ONTI) (OECD, 2019[93]). The principles include: 1) develop a solid knowledge base in terms of internal capabilities and user needs; 2) comply with government regulations and guidelines for the		

	project to be sustainable; 3) opt for solutions that use cloud computing to reduce operating costs and drive internal efficiencies; 4) use open standards and interoperable solutions; 5) select shared government platforms and solutions to avoid the duplication of efforts; 6) develop re-usable and shared solutions; 7) ensure accessibility of solutions for inclusiveness; 8) protect systems and users to safeguard confidentiality, integrity and privacy; 9) consider a sustainable solution from the initial stages of the design; 10) secure convenient contracting, avoid dependence on suppliers (Argentina.gob.ar, 2019[94]). • The **United Kingdom** published the technology code of practice (TCoP) in 2016 to set a cross-government common standard for designing, building and buying technology in the public sector. The TcoP criteria is currently used for the Cabinet Office spend control process and the Local Digital Declaration. By aligning funding and governance mechanisms with technology standards, the government can ensure that digital tools and public services are designed in ways that best meet the needs of citizens while keeping to the standards (GOV.UK, n.d.[95]). Another instance is the Government Cloud (G-Cloud) that was established in 2013 to ensure standardisation in procurement of cloud services on the Digital Marketplace and promote government-wide adoption of cloud computing. It is a framework that contains specifications for review, compliance and verification for cloud service providers (GOV.UK, n.d.[96]). • The Treasury Board of **Canada** Secretariat has a Digital Standards Playbook to support the public sector teams in designing and delivering public services for the digital age that are agile, open, user-focused, simple to use and trustworthy. The Playbook contains living standards that were co-created with a variety of stakeholder groups but will continue to evolve with the context. Some of the standards include designing with users, iterating frequently, being open by default, using open standards and solutions, and having privacy and security measures (Canada.ca, n.d.[97]).

Sub-Dimension 3.4.3 Regulatory Co-operation with Industry Players

Importance and Implications of the Governance of Digital Government	**Sub-Dimension 3.4.3 Regulatory Co-operation with Industry Players** is a collaborative arrangement between the government and an entity from the industry in forming regulations and enforcing compliance. The government offers legislative support to allow the agreement to be implemented and followed through. It reduces the use of government resources, allows public participation, encourage higher accountability from the regulated and enable adaptability to contextual factors that call for updates in the regulatory framework. The private sector is a key partner of the government in the implementation of digital government strategies and the uptake of digital tools like digital identity and standards. To build a strong digital government ecosystem, it is good to establish policy dialogue and collaboration with private sector organisations like chambers of commerce. To facilitate this collaboration, the private sector should also be able to understand and embed regulatory practices in their operations and services. Regulatory co-operation offers a way for governments to increase the legitimacy and adoption of regulatory frameworks, and mobilise, align with and foster compliance within the digital government ecosystem. It also ensures that the digital government related regulatory frameworks reflect the reality and context of private sector.		
Stages of Governance	**Advanced**	**Intermediate**	**Basic**

Characteristics	Regulatory co-operation is conducted in a way where the regulator and regulated have a strong, dynamic, responsive relationship and information is exchanged efficiently such that the regulations supporting the digital government agenda can be updated often according to the needs and context of the private sector.	Regulatory co-operation in specific areas is conducted in a way where the regulator and regulated have a fairly dynamic, responsive relationship and information is exchanged quite efficiently such that the regulations supporting the digital government agenda are able to be updated occasionally according to the needs and context of the private sector.	The lack of a regulatory co-operation institutional culture determines that the regulator and regulated have a limited relationship and information is exchanged often such that the regulations supporting the digital government agenda are able to be updated once in a while according to the needs and context of the private sector but still facing much resistance
Policy Questions	How can the collaborative regulation approach be conducted in order to increase awareness, participation and accountability from private sector stakeholders inclusively and improve feedback loops for the regulations supporting the digital government agenda to be improved?	In what way can the regulator improve its practice to deepen the engagement with the regulated in the private sector towards innovating flexible and adaptable regulations: crowdsourcing approaches, public consultations, institutionalising open government data?	What is lacking in order to build a collaborative regulation institutional culture that can achieve better efficiency and effectiveness: regulatory framework, understanding the needs and context of digital government, relationship with the regulated?
Recommendations	Consider adopting delegated and self-regulatory practices by involving having the regulated take a bigger role in the creation and implementation of the regulations supporting the digital government agenda. Enhance strategic foresight and agility through smart analytical practices.	Endeavour to involve the regulated and other relevant regulatory stakeholders early in the start of the creation, followed by management and implementation of the regulation in support of promoting changes and delivering value in the digital government agenda?	Evaluate the legal environment and institutions to support the mandate and engagement of the lead digital government regulators to design regulations based on the needs of the regulated and context.
Practices	• **Germany** widely practises collaborative regulation or delegated regulation to command and control regulation for search engines. Germany delegates the regulation of search engine results is intended to reduce the harm that results from unadulterated content, which is a new form of self-regulation for search engines that was developed since 2005.		

References

AMA (n.d.), *Administrative Modernization Agency*, https://www.ama.gov.pt/web/english. [33]

AMA (n.d.), *Citizen Spot*, https://www.ama.gov.pt/web/english/citizen-spot. [45]

APEC (2019), *APEC Framework for Securing the Digital Economy*, https://www.apec.org/Publications/2019/11/APEC-Framework-for-Securing-the-Digital-Economy. [25]

apolitical (2019), *Scaling digtial: How Brazil is rewiring government*, https://apolitical.co/solution-articles/en/scaling-digital-how-brazil-is-rewiring-government. [59]

Argentina.gob.ar (2019), *Decálogo Tecnológico ONTI*, https://www.argentina.gob.ar/jefatura/innovacion-publica/ssetic/onti/decalogo-tecnologico. [94]

Australian Government (n.d.), *Digital Transformation Strategy*, https://www.dta.gov.au/digital-transformation-strategy. [69]

Australian Government (n.d.), *Trusted Digital Identity*, https://www.digitalidentity.gov.au/privacy-and-security/trusted-digital-identity-framework. [92]

Canada.ca (n.d.), *Government of Canada Digital Standards: Playbook*, https://www.canada.ca/en/government/system/digital-government/government-canada-digital-standards.html. [97]

CIO.gov (n.d.), *CIO Handbook*, https://www.cio.gov/cio-handbook/. [61]

Commission of the European Communities (2001), "European governance: A white paper", *Governance: An International Journal Of Policy And Administration*, https://ec.europa.eu/commission/presscorner/detail/en/DOC_01_10. [7]

CTIE (n.d.), *Stratégie Gouvernance électronique 2021-2025*, https://ctie.gouvernement.lu/dam-assets/documents/Strategie-gouvernance-electronique-2021-2025-vfin.pdf. [56]

datastore.brussels (n.d.), *About*, https://datastore.brussels/web/about. [46]

Digital Agency (n.d.), *Mission & Vision*, https://www.digital.go.jp/about/organization. [21]

Digital Austria (n.d.), *Digital Austria*, https://www.digitalaustria.gv.at/. [18]

Digital Strategy and Transformation (n.d.), *Victorian Government IT Dashboard*, https://itdashboard.digital.vic.gov.au/#!/. [70]

DTA (n.d.), *Digital Transformation Agency - Developing better business cases*, https://businesscaseplaybook.service.gov.au/. [73]

e-Estonia (2021), *Estonia's digital ecosystem is creating a seamless society*, https://e-estonia.com/estonias-digital-ecosystem-is-creating-a-seamless-society/. [54]

e-Estonia.com (n.d.), *e-Estonia guide*, https://e-estonia.com/wp-content/uploads/eas-eestonia-vihik-a5-180404-view.pdf. [22]

egovernment.ch (n.d.), *eGovernment Strategy Switzerland*, https://www.egovernment.ch/en/umsetzung/e-government-strategie/. [27]

EUR-Lex (2019), *Regulation (EU) 2019/881 of the European Parliament and of the Council of 17 April 2019 on ENISA and on information and communications technology cybersecurity certification and repealing Regulation (EU) No. 526/2013 (Cybersecurity Act)*, https://eur-lex.europa.eu/eli/reg/2019/881/oj. [91]

EUR-Lex (2016), *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (GDPR)*, https://eur-lex.europa.eu/eli/reg/2016/679/oj. [90]

EUR-Lex (2015), *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: A Digital Single Market Strategy for Europe*, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52015DC0192. [23]

EUR-Lex (2014), *Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC*, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0073.01.ENG. [89]

EUR-Lex (2006), *Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market*, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006L0123. [88]

European Commission (2021), *Commission proposes a trusted and secure Digital Identity for all Europeans*, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2663. [49]

European Commission (2003), *Guidelines for Successful Public-Private Partnership*, https://ec.europa.eu/regional_policy/sources/docgener/guides/ppp_en.pdf. [67]

European Commission (n.d.), *European eGovernment Action Plan 2016-2020*, https://ec.europa.eu/digital-single-market/en/european-egovernment-action-plan-2016-2020. [24]

European Commission (n.d.), *Finland in the Digital Economy and Society Index*, https://digital-strategy.ec.europa.eu/en/policies/desi-finland. [53]

European Commission (n.d.), *Recovery and Resilience Facility*, https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en. [58]

European Court of Auditors (2017), *The Commission's intervention in the Greek financial crisis*, https://op.europa.eu/webpub/eca/special-reports/greek-crisis-17-2017/en/. [34]

Federal Ministry of Digital and Economic Affairs (n.d.), *Digital Austria*, https://www.bmdw.gv.at/en/Topics/Digitalisation/Strategy/Digital-Austria.html. [17]

Foreign Policy (2020), *Greece: A Remarkable Economic Recovery*, https://foreignpolicy.com/sponsored/greece-a-remarkable-economic-recovery/. [35]

G20/OECD (2021), *G20 Compendium on the use of digital tools for public service continuity*, https://assets.innovazione.gov.it/1628073696-g20detfoecdcompendiumdigitaltools.pdf. [1]

Garner, J. (1924), "French Administrative Law", *The Yale Law Journal*, Vol. 33/6, https://doi.org/10.2307/787920. [30]

GDS (n.d.), *ICT Commissioning Playbook*, https://playbook-ict-procurement.herokuapp.com/plays. [81]

gov.br (n.d.), *Estratégia de Governo Digital 2020-2022*, https://www.gov.br/governodigital/pt-br/EGD2020/. [68]

GOV.SI (2021), *The Strategic Council for Digitalisation will operate as six working groups*, https://www.gov.si/en/news/2021-04-23-the-strategic-council-for-digitalisation-will-operate-as-six-working-groups/. [63]

GOV.UK (n.d.), *Applying to the G-Cloud framework*, https://www.gov.uk/guidance/g-cloud-suppliers-guide. [96]

GOV.UK (n.d.), *Blog - Government Digital Service: Government as a Platform*, https://gds.blog.gov.uk/category/government-as-a-platform/. [41]

GOV.UK (n.d.), *Digital Marketplace*, https://www.digitalmarketplace.service.gov.uk/. [79]

GOV.UK (n.d.), *Digital, Data and Technology Profession Capability Framework*, https://www.gov.uk/government/collections/digital-data-and-technology-profession-capability-framework. [43]

GOV.UK (n.d.), *GDS Academy course*, https://www.gov.uk/government/collections/gds-academy-course-descriptions. [44]

GOV.UK (n.d.), *The technology code of practice*, https://www.gov.uk/guidance/the-technology-code-of-practice. [95]

Grant Thornton (2021), *Summary: Budget 2021*, https://www.grantthornton.co.nz/insights/budget-2021-summary/. [38]

Ísland.is (n.d.), *All of Iceland's public services in one place*, https://island.is/en. [51]

Martin, C. and A. Downs (1969), "Inside Bureaucracy", *The Western Political Quarterly*, http://dx.doi.org/10.2307/447012. [8]

Mergel, I. (2021), *Digital Transformation of the German State*, Palgrave Macmillan, Cham, https://doi.org/10.1007/978-3-030-53697-8_19. [15]

Ministry of Digital Governance (n.d.), *Mission*, https://mindigital.gr/to-ypourgeio/apostoli. [36]

Nielsen, M. and M. Yasuoka (2014), *An analysis of the Danish approach to eGovernment benefit realisation*, https://www.researchgate.net/publication/281774408_An_analysis_of_the_Danish_approach_to_eGovernment_benefit_realisation. [72]

OECD (2021), *Digital Government Review of Slovenia: Leading the Digital Transformation of the Public Sector*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/954b0e74-en. [62]

OECD (2021), "Good Practice Principles for Data Ethics in the Public Sector", https://www.oecd.org/gov/digital-government/good-practice-principles-for-data-ethics-in-the-public-sector.pdf. [47]

OECD (2021), *Government at a Glance 2021*, OECD Publishing, Paris, https://dx.doi.org/10.1787/1c258f55-en. [75]

OECD (2021), "Practical Guidance on Agile Regulatory Governance to Harness Innovation", https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0464. [86]

OECD (2021), *Recommendation of the Council for Agile Regulatory Governance to Harness Innovation [OECD/LEGAL/0464]*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0464. [85]

OECD (2021), "The OECD Framework for digital talent and skills in the public sector", *OECD Working Papers on Public Governance*, No. 45, OECD Publishing, Paris, https://dx.doi.org/10.1787/4e7c3f58-en. [42]

OECD (2020), *Digital Government in Lebanon: Governance for Coherent and Sustainable Policy Implementation*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/a711b0c1-en. [28]

OECD (2020), "Digital Government Index: 2019 results", *OECD Public Governance Policy Papers*, No. 03, OECD Publishing, Paris, https://dx.doi.org/10.1787/4de9f5bb-en. [14]

OECD (2020), *Innovative Citizen Participation and New Democratic Institutions: Catching the Deliberative Wave*, OECD Publishing, Paris, https://dx.doi.org/10.1787/339306da-en. [65]

OECD (2020), "The OECD Digital Government Policy Framework: Six dimensions of a Digital Government", *OECD Public Governance Policy Papers*, No. 02, OECD Publishing, Paris, https://dx.doi.org/10.1787/f64fed2a-en. [12]

OECD (2019), *Declaration on Public Sector Innovation [OECD/LEGAL/0450]*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0450. [13]

OECD (2019), *Digital Government in Chile – A Strategy to Enable Digital Transformation*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/f77157e4-en. [60]

OECD (2019), *Digital Government in Chile – Digital Identity*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/9ecba35e-en. [39]

OECD (2019), *Digital Government Review of Argentina: Accelerating the Digitalisation of the Public Sector*, OECD Publishing, Paris, https://doi.org/10.1787/354732cc-en. [93]

OECD (2019), *Regulatory effectiveness in the era of digitalisation*, https://www.oecd.org/gov/regulatory-policy/Regulatory-effectiveness-in-the-era-of-digitalisation.pdf. [84]

OECD (2019), *The Path to Becoming a Data-Driven Public Sector*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/059814a7-en. [31]

OECD (2018), *Digital Government Review of Morocco: Laying the Foundations for the Digital Transformation of the Public Sector in Morocco*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264298729-en. [4]

OECD (2018), *Glossary of Key Terms for completing the 2018 OECD Budget Practices and Procedures Survey*, OECD Publishing, Paris, https://www.oecd.org/governance/budgeting/OECD-2018-Budget-Practices-and-Procedures-Glossary-of-key-terms.pdf. [82]

OECD (2018), *OECD Regulatory Policy Outlook 2018*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264303072-en. [83]

OECD (2017), *Preventing Policy Capture: Integrity in Public Decision Making*, OECD Publishing, Paris, https://doi.org/10.1787/9789264065239-en. [66]

OECD (2017), *Public Procurement for Innovation: Good Practices and Strategies*, OECD Public Governance Reviews, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264265820-en. [77]

OECD (2017), *Recommendation of the Council on Open Government [OECD/LEGAL/0438]*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0438. [64]

OECD (2017), *Recommendation of the Council on Public Integrity [OECD/LEGAL/0435]*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0435. [5]

OECD (2016), *Digital Government in Chile: Strengthening the Institutional and Governance Framework*, OECD Digital Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264258013-en. [10]

OECD (2016), *Digital Government Strategies for Transforming Public Services in the Welfare Areas*, OECD Publishing, Paris, https://www.oecd.org/gov/digital-government/Digital-Government-Strategies-Welfare-Service.pdf. [98]

OECD (2015), *OECD Public Governance Reviews: Estonia and Finland: Fostering Strategic Capacity across Governments and Digital Services across Borders*, OECD Public Governance Reviews, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264229334-en. [52]

OECD (2015), *Recommendation of the Council on Public Procurement [OECD/LEGAL/0411]*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0411. [74]

OECD (2014), "India Policy Brief: e-Governance - The Digital Government Imperative", *OECD Better Policies Series*, https://www.oecd.org/india/India-Digital-Government-Imperative.pdf. [48]

OECD (2014), *Recommendation of the Council on Digital Government Strategies [OECD/LEGAL/0406]*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406. [2]

OECD (2013), *Reaping the Benefits of ICTs in Spain: Strategic Study on Communication Infrastructure and Paperless Administration*, OECD e-Government Studies, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264173224-en. [32]

OECD (2012), *Recommendation of the Council on Regulatory Policy and Governance [OECD/LEGAL/0390]*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0390. [87]

OECD (2005), *Modernising Government: The Way Forward*, OECD Publishing, Paris, https://dx.doi.org/10.1787/9789264010505-en. [3]

OECD (n.d.), *Digital Government Toolkit - Digital Government Strategies: Good Practices (Japan)*, https://www.oecd.org/gov/japan-gcio.pdf. [20]

OECD (n.d.), *Going Digital Toolkit: Luxembourg*, http://goingdigital.oecd.org/countries/lux. [55]

OECD (forthcoming), *Towards agile approaches in ICT procurement in the Slovak Republic: Stock-taking report on current practices and recommendations for the way forward*. [76]

OGP.GOV.IE (2019), *Dynamic Purchasing System (DPS)*, https://www.etenders.gov.ie/Media/Default/SiteContent/UserGuides/Dynamic_Purchasing_System_DPS_March2019.pdf. [78]

Prime Minister of Japan & His Cabinet (n.d.), *Establishment of the IT Strategy Headquarters*, https://japan.kantei.go.jp/it/council/establishment_it.html. [19]

Public Procurement Office of Poland (2020), *Public Procurement of Innovation*, https://www.uzp.gov.pl/__data/assets/pdf_file/0017/45503/Zamowienia_publiczne_na_innowacje_EN_WCAG-2021-01-12.pdf. [80]

Red GEALC (n.d.), *What is Red GEALC?*, https://www.redgealc.org/ministerial2020/en/about-red-gealc/. [26]

Republic of Austria Parliament (n.d.), *The Federal Principle*, https://www.parlament.gv.at/ENGL/PERK/BOE/PR/index.shtml. [16]

Robertson, G. (2020), *Budget 2020 - Summary of Initiatives in the COVID-19 Response & Recovery Fund (CRRF) Foundational Package*, http://treasury.govt.nz/publications/summary-intiatives/summaryinitiatives-crrf-budget2020. [37]

Sørensen, E. and J. Torfing (2011), "Enhancing collaborative innovation in the public sector", *Administration and Society*, http://dx.doi.org/10.1177/0095399711418768. [9]

Statista (2021), *Share of households with internet access in rural Iceland from 2011 to 2020*, https://www.statista.com/statistics/1236313/share-rural-households-internet-access-iceland/. [50]

Statista (2019), *Online shopping market size in 25 countries in Europe in 2019*, https://www.statista.com/statistics/1113005/market-size-of-e-commerce-in-europe-by-country/. [40]

The Treasury (n.d.), *Better Business Cases (BBC)*, https://www.treasury.govt.nz/information-and-services/state-sector-leadership/investment-management/better-business-cases-bbc. [71]

Thompson, G. (1931), "Development of the Anglo-American Judicial System", *Cornell Law Review*, Vol. 17/1, http://scholarship.law.cornell.edu/clr/vol17/iss1/1. [29]

United Nations (2000), “United Nations: Millenium Development Goals Declaration”, *General Assembly*, http://www.undp.org/content/undp/en/home/mdgoverview.html. [6]

Vinnova (n.d.), *Testbed Sweden*, https://www.vinnova.se/en/m/testbed-sweden/. [57]

Welby, B. and E. Tan (forthcoming), *Designing and delivering public services in the digital age*. [11]

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PRINT ISBN 978-92-64-37173-6
PDF ISBN 978-92-64-61987-6