OECD Digital Government Studies

Digital Government in Chile

STRENGTHENING THE INSTITUTIONAL AND GOVERNANCE FRAMEWORK



OECD

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Foreword

Digital government can be pivotal in enhancing the efficiency and effectiveness of policy design and implementation. However, sound governance frameworks and adequate institutional arrangements are required to reap the full benefits of digital technologies, promote systemic change and make the government digital by design. As the use of digital technologies becomes mainstreamed in all policy areas, effective implementation requires the participation of a variety of actors. This entails strong leadership; alignment between planning, policy formulation and implementation; as well as desirable levels of continuity and coherence in the digital government agenda. Therefore, the institutional set-up in charge of digital government should be able to count on a clear mandate and be supported by the necessary governance framework providing powers, institutional mechanisms, policy levers and resources, to be able to lead the definition of a vision, steer and co-ordinate actions in line with the strategic objectives, and hold the various actors accountable for results. These conditions can facilitate the integration of digital government in broader public sector reform agendas and synergies with other cross-cutting policy areas, such as public sector innovation, open government and administrative simplification.

This OECD review was requested by the government of Chile to be assisted in the establishment of a solid governance framework for digital government. It is based on the conceptual framework provided by the OECD *Recommendation of the Council on Digital Government Strategies* – particularly its second pillar focused on governance and co-ordination for implementation – and on the benchmarking of the institutional and governance frameworks of nine OECD countries and Uruguay, all of which are widely recognised for the maturity in the use of digital technologies and robust digital government organisational arrangements.

The main message of this review is that Chile needs an adequate governance of digital government providing a solid and stable institutional set-up that is suitable for ensuring continuity of leadership in support of the achievement of strategic policy objectives over a period of time, which may cut across several administrations (governments/presidencies). To provide

Chile with such a framework, this review proposes two institutional alternatives. Entitled *Digital Government in Chile: Strengthening the Institutional and Governance Framework*, this is the first OECD review looking in depth at the governance framework and organisational arrangements for digital government. It provides relevant insights contributing to the international peer learning and debate on the governance of digital technologies in the public sector and on designing institutional settings that deliver impact.

Acknowledgements

This review was prepared by the Public Governance and Territorial Development (GOV) Directorate of the OECD. The mission of the Directorate is to help governments at all levels design and implement strategic, evidence-based and innovative policies to strengthen public governance; respond effectively to diverse and disruptive challenges; and deliver on government's commitments to citizens.

The *Digital Government Review of Chile* was written by Barbara-Chiara Ubaldi, who leads the OECD's work on Digital Government, and Rodrigo Mejía-Ricart, junior policy analyst. Strategic guidance was provided by Luiz de Mello, Deputy Director of the Public Governance and Territorial Development Directorate, and Edwin Lau, Head of the Division for the Reform of the Public Sector. Lynda Hawe, Kate Lancaster and Catherine Roch provided support with the production process and Jennifer Allain edited the manuscript.

This review benefited from the precious experience and collaboration of ten peer countries: Australia, Canada, Denmark, Estonia, New Zealand, Portugal, Spain, the United Kingdom, the United States and Uruguay. While they are too many to list, the active support and contributions by each one of the peer reviewers involved was crucial to the elaboration of this review.

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Executive summary

Budgetary constraints and rising citizens' expectations are leading the government of Chile to seek ways to become more productive, efficient and effective. Digital technologies can have a substantial impact on government's capacity to effectively design and implement policies, and to be transparent and accountable in delivering outcomes and outputs. Not only can they enhance civil servants' productivity, but they can significantly change how governments plan and deliver services, making them more user-driven, more convenient to access and tailored to needs, e.g. designed according to users' needs. Through the improvement of data management and processing, digital technologies can help turn data into opportunities producing knowledge for evidence-based policy making, effective monitoring of implementation and scaling up of "what works". However, reaping the full benefits of digital technologies requires a solid governance framework to spur a coherent approach across the public sector, the capacity to be rigorous and clear in taking up new opportunities, and effective co-ordination to avoid the duplication of efforts, achieve systemic change and build a government that is digital by design.

This review suggests that the Chilean institutional set-up for digital government, and the underlying legal and regulatory framework, should be strengthened to ensure effective leadership, continuity of efforts and coherence of approaches across time and administrations. Chile should be able to count on an institution/entity/body responsible for digital government with a clear mandate and the policy levers, powers, resources and mechanisms necessary to steer decisions on information and communication technology (ICT) initiatives and investments in the public sector in line with the government's strategic objectives, and to co-ordinate the different actors. In the current context, the Modernisation and Digital Government Unit (Unidad de Modernización y Gobierno Digital) of the Ministry General Secretariat of the Presidency (SEGPRES), which is expected to lead the digitalisation of the government and to improve the management of data and information to promote a real digital transformation of the public sector for more efficient service delivery and evidence-based decision making, does not meet these criteria.

Two alternatives are recommended as models that could help the government of Chile to better achieve policy objectives by strengthening the governance framework of digital government : 1) the creation of an agency dedicated to public sector digitalisation and attached to a ministry – such as the SEGPRES that was tasked by Decree 01, 2016 with designing a digital government action plan; 2) the creation of a Sub-Secretaría de Gobierno Digital (Undersecretary for Digital Government) in a same ministry. Yet, the implementation of the selected option will have to be gradual, taking into account the budgetary and institutional growth constraints faced by Chile.

Agencies tend to have greater independence from the political cycle and hence provide more continuity, are more inclined to adopt value-driven decisions and can more easily facilitate co-ordination. However, the institutional design should balance operational autonomy with the need for strong and clear political support and commitment, as well as accountability. Similarly, agencies should have a sound equilibrium between regulatory powers and the role as service provider (e.g. if the agency invoices public institutions for specific services), in order to avoid abuses linked to conflict of interests. This type of institutional design usually requires a more sophisticated, and perhaps less intelligible, legal framework. Option 2 would allow for a more agile establishment of the authority, with simpler legal and regulatory frameworks and more unequivocal political support. However, such an authority could be more vulnerable to political cycles and politically motivated decisions. This situation could undermine the solidity and stability of the authority and increase the uncertainty of digital government policies.

Both alternatives suggest that the existing legal basis, policy levers and areas of responsibility should be strengthened and expanded. A stronger legal basis is expected to provide a clear and strong mandate, greater institutional stability and certainty. This can help establish a "business environment" within the public sector adequate to leverage the opportunities brought about by the new digital environment and be accountable in delivering results. The new digital government authority should:

- Be responsible for designing a specific digital government strategy in line with the overall national Digital Agenda for Chile.
- Have regulatory powers in key horizontal areas of responsibility, e.g. setting standards for the use of technological platforms and data, as well as for digital services design and delivery.
- Be responsible for ICT projects that have a government-wide scope and impact, e.g. digital identification giving access to public services or the citizen portal.

- Establish ICT project governance tools that support coherent project design, monitoring and evaluation across the public sector in line with the government's objectives; avoid duplication of efforts; and promote the efficiency of ICT investments and accountability of actions.
- Manage a dedicated digital government fund, providing financial support to strategic projects in line with the digital government strategy, standards and government objectives.
- Develop, in collaboration with the relevant stakeholders, an overall ICT procurement strategy for the public sector. This would enable the government to leverage the innovative talent and technologies available outside the public sector, providing a "level playing field" while ensuring desirable levels of coherence and efficiencies for the public sector.
- Develop a strategy for the provision of ICT shared services to help the government reap the benefits of economies of scale for basic ICT infrastructure and services.
- Develop a strategy for a data-driven public sector, i.e. providing simple guidance for a robust management of government data and information to improve standardisation, use, flow and sharing of public sector data within and across levels of government to better meet the needs of citizens.

Introduction

The government of Chile faces rising citizen expectations of government performance in a context of increasing budgetary pressures. This context should lead public authorities to find smarter organisational arrangements and better use of technology as a driver of efficient and effective policy design and implementation. The strategic use of digital technologies provides governments with the opportunity to enhance the productivity, efficiency and effectiveness of government operations and improve public sector intelligence while opening up decision-making processes, bringing in the "voice" of the users – with the ultimate objective of leading to more inclusive and satisfactory policies and public services for citizens and businesses. This requires a solid governance framework and institutional arrangements. This *Digital Government Review of Chile* seeks to make policy recommendations aimed to strengthen the governance of digital government in Chile, which will increase the government's ability to steer and use information and communication technologies (ICTs) strategically to boost public sector performance and improve public service delivery. These recommendations will be developed after careful examination of experiences across OECD countries in addressing key ICT governance issues required to accelerate the digital transformation of the public sector and a thorough assessment of Chile's digital government ecosystem.

Reaping the full benefits of ICTs in the public sector requires a clear vision for digital government supported by broad ownership and political support. In its recently launched Digital Agenda 2020, the government of Chile states its ambition to evolve from electronic government, driven by operational efficiencies and internal priorities of individual agencies, to digital government, enabling more integrated and citizen-driven approaches for the use of technology to the benefit of its constituency. Achieving such a shift, however, is challenging. As organisations become more mature in the use of ICTs they increasingly need to share processes, systems and data, and to work with a number of actors from within the public sector and in the society as whole. This situation is leading to increasing pressure for solid co-ordination capacities, that can ensure coherent implementation – with the

main policy objectives – and new forms of partnership, while preserving the expected levels of security, accountability and service quality.

To ensure the coherent use of technologies across the public sector, the government of Chile requires, in addition to a common vision, a solid system of checks and balances with clear roles and responsibilities, strong co-ordination mechanisms at strategic and operational levels, as well as across levels of government. It will also need a clear view of how to develop adequate capacities and policy levers to steer the digital transformation and make the government digital by design. In a nutshell, Chile needs a clearly defined mandate, the institutional set-up to go with it, along with all the necessary tools to exert such mandates (e.g. policy levers, regulatory power).

Today, the institutional framework of digital government in Chile does not meet these criteria. The risks of inadequate organisational and governance frameworks include inefficient spending, data flows and collaboration across the public sector, uneven preparedness to use ICTs across levels of government and policy areas, and increasing public sector fragmentation (OECD, 2015). A coherent and strategic use of ICTs necessitates institutional capabilities and regulatory frameworks that are in line with government ambitions and not only based on the technological solutions available. The World Bank has dubbed these the "analog complements" of the digital transformation (World Bank, 2016).

In general terms, governments have been slow to adapt to the digital era, but are facing growing pressure from more connected and informed citizens and businesses to deliver better and more tailored services and to design and implement more inclusive and effective policies. As public sectors try to adapt to the new digital context, the number and complexity of ICT projects increases in terms of the number of actors involved, budget size, available technologies and the multi-disciplinary skills required to appropriately manage and assess these projects. Sound governance frameworks must also take into account the daily operational and political risks associated with these projects, helping to manage these risks, improve performance and enhance accountability.

The OECD Council adopted on 15 July 2014 the *Recommendation of the Council on Digital Government Strategies* setting out 12 guiding principles to support governments to steer the digital transformation. Some of these principles deal with the need of leadership and political support for digital government, the coherent use of digital technologies, and the organisational and governance frameworks required to co-ordinate the implementation of digital government strategies. The above-mentioned Recommendation will serve as the analytical and conceptual framework guiding this Digital Government Review focused on governance.

Box 0.1. OECD Recommendation of the Council on Digital Government Strategies

Adopted on 15 July 2014, the OECD Recommendation is a structuring element for decision makers and stakeholders that need to navigate government objectives and resources in an increasingly complex policy-making environment. Digital technologies create both opportunities and challenges for successful government reforms in any policy domain, e.g. welfare, economic development, administrative services efficiency. A set of 12 principles, grouped under 3 pillars, guide decision makers.

I. Engage citizens and open up government to maintain public trust.

1. Ensure greater transparency, openness and inclusiveness of government processes and operations.
2. Encourage engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery.
3. Create a data-driven culture in the public sector.
4. Reflect a risk management approach to addressing digital security and privacy issues, and include the adoption of effective and appropriate security measures.

II. Adopt cohesive approaches to deliver public value throughout government.

5. Secure leadership and political commitment to the strategy.
6. Ensure coherent use of digital technologies across policy areas and levels of government.
7. Establish effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government.
8. Strengthen international co-operation with other governments.

III. Strengthen government capabilities to ensure returns on IT investments.

9. Develop clear business cases to sustain the funding and focused implementation of digital technologies projects.
10. Reinforce institutional capacities to manage and monitor projects' implementation.
11. Procure digital technologies based on assessment of existing assets.
12. Ensure that general and sector-specific legal and regulatory frameworks allow digital opportunities to be seized.

Source: OECD (2014), *Recommendation of the Council on Digital Government Strategies*, OECD, Paris, available at: www.oecd.org/gov/digital-government/Recommendation-digital-government-strategies.pdf.

This review first provides an analysis benchmarking the governance frameworks and institutional arrangements of some of the most advanced countries in the field of digital government, highlighting the strengths and weaknesses of their governance models to foster the digital transformation. These countries are Australia, Canada, Denmark, Estonia, New Zealand, Portugal, Spain, the United Kingdom, the United States and Uruguay. The aforementioned governance models were chosen in order to provide a diversity of examples and options chosen by governments to establish a stable institutional framework and to strengthen co-ordination, with the final intent to strategically use technology to improve the achievement of policy objectives and steer a real change across the administration. The selected countries, all OECD members except Uruguay, have been chosen for this comparative analysis as they have all adopted models of governance that focus on aligning strategic actions through co-ordination rather than centralisation. Several have opted for the establishment of agencies, or departments, supported by a solid legal basis, that facilitate joined-up decisions and ensure a coherent use of digital technologies across policy areas and levels of government. For example, these countries have tried to strategically link digital government to major public sector reforms as well as to specific policies such as those addressing innovation, open government, cybersecurity, service delivery and administrative simplification. In line with what is endorsed by the OECD in the *Recommendation of the Council on Digital Government Strategies*, the chosen approaches, adapted to each specific administrative culture and tradition, have been capable to "secure across time "leadership and political commitment to the definition and implementation of the digital government strategy, through a combination of efforts aimed to promote inter-ministerial co-ordination and collaboration, set priorities, and facilitate the engagement of the relevant agencies across levels of government in pursuing the digital government agenda" (OECD, 2014a).

The United Kingdom developed the digital transformation model to promote rapid and coherent change across the central government. The intention was to break down silo approaches to the deployment of technology, as well as to foster the uptake of common systems and components in order to ensure the delivery of a "single and consistent" image and service quality to service users. Australia, New Zealand and the United States are adapting their governance model, creating digital transformation units to create digital services that are digital by design, while maintaining their traditional chief information officer (CIO) structures focusing on the efficiency and effectiveness of public sector information systems. Canada, Denmark, Portugal and Spain provide strong examples of incremental efforts in developing stability and capacity in the governance and use of digital technologies in the public sector through the establishment of public entities (e.g. agencies or directions supported by strong legal basis)

that co-ordinate IT policies and deployment from the centre in a context of decentralised responsibilities for implementation. Finally, the case of Uruguay provides a solid example of a country progressively developing institutional capacity and stability of the digital government agenda in a context of non-consecutive presidential terms.

Chapter 1 will use a SWOT methodology to identify the internal and external strengths and weaknesses of different alternatives. Chapter 2 of the review will analyse the current organisational framework for digital government in Chile, and based on its identified challenges and objectives will deduce the most appropriate alternatives for Chile's new institutional set-up.

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Chapter 1.

Digital government governance frameworks in selected OECD countries and Uruguay

Based on the OECD Recommendation of the Council on Digital Government Strategies*, this chapter assesses the governance framework and institutional arrangements of digital government across ten governments considered to be advanced in the implementation of digital government. The assessment delves into issues such as the role of the digital government strategy, the institutional arrangements, the policy levers, the co-ordination mechanisms and the legal framework for digital services, strategies for public sector data and ICT procurement. Likewise, the chapter explores how these ten countries articulate and exploit synergies with other cross-cutting public sector agendas, such as open government, public sector innovation and administrative simplification. Furthermore, it describes how digital government units are financed and discusses existing funding mechanisms for strategic digital government projects and how they can serve as drivers of change. Finally, the chapter briefly covers mechanisms and tools for monitoring and assessing the impact of digital government activities.*

Addressing the challenges associated with the use of information and communication technologies (ICTs) and seizing the opportunities provided by digital technologies requires a clear mandate and the setting up of institutional arrangements and a governance framework in line with the government's ambitions, enabling it to use technologies coherently across policy areas and levels of government and to link the use of ICTs to broader public sector modernisation agendas and national policy objectives. To achieve these goals, almost all OECD countries (96.3%) have identified units, bodies or functions responsible for co-ordinating the deployment of ICTs in government with the mandate to steer change; ensure interoperability of information systems, applications and data; develop policies and standards; and facilitate synergies, sharing of resources, lessons and knowledge across the public sector.

OECD countries are facing similar challenges and requirements to complete the digital transformation. As governments seek to steer change, new trends and distinct models in governance and organisational frameworks are emerging. Previous OECD work has identified three different approaches in the governance of ICTs in the public sector (OECD, 2015b). These approaches are not necessarily mutually exclusive and appear frequently combined to some extent.

1. The "Digital Transformation Office Approach", initiated by the Government Digital Service of the United Kingdom. This approach creates a new organisation, office or delivery unit with the mandate to oversee and co-ordinate the use of technology to radically transform service delivery for citizens and businesses, as well as the public administration's functioning. These units have put a strong emphasis on bringing in highly skilled technical individuals from the tech private sector, with demonstrated expertise in using digital technologies, tools and methods, trying to compensate for the generally inadequate ICT skills within most civil services. This model's strategy has been focused on identifying "quick wins" on service quality improvement in order to secure the required level of political support. However, their frequently disruptive approach may run into difficulties with longer term structural and cultural change across government given their outsider status and culture.
2. The "Central Co-ordination Approach" seeks to establish a strong government-wide leadership with the capacity to enforce policies and standards and to control the approval of large ICT projects. This model is structured around a central co-ordination unit with a clear mandate, such as a chief information officer (CIO). This approach is characterised by its ability to impose common standards across government, potentially leveraging economies of scale. However, its

focus on big-ticket items can make it slower to react and limit agility in initiating pilot projects and experimenting with new technologies or approaches given the emphasis on acting at a government-wide scale.

3. The "Decentralised Co-ordination Approach", which provides greater flexibility for individual institutions to pursue projects and test different approaches in using ICT for modernisation. In most cases there is still a central co-ordination body and a national strategy to guide digital government activities. However, co-ordination is based on less coercive levers, with fewer mandated requirements on departments and no unifying senior official with ultimate responsibility for the digital government agenda. While this approach provides more opportunities for experimentation and to engage with local governments, it carries the risk of uneven implementation and potential challenges in ensuring the transmission and operationalisation of lessons learnt across government organisations.

While this conceptualisation is useful to give a general idea of existing governance models across the OECD, formulating concrete recommendations for the governance of digital technologies' use in the government of Chile calls for an in-depth analysis of the key governance variables that determine outputs and outcomes. In order to formulate these recommendations, the analysis looks in detail at the role of the strategy in the governance process, the general characteristics of the units or institutions (e.g. location, type of institution, selection of the head of the unit or body, its mandate and legal basis), the levers at its disposal (e.g. political, financial, control over ICT procurement, role in the governance of ICT projects, regulatory powers), the effectiveness of its co-ordination mechanisms and its oversight tools. This first part of the *Digital Government Review of Chile* looks also at the scope of responsibilities of the unit or body responsible for digital government. In addition, this chapter discusses how this unit or body interacts with other synergetic public sector agendas, policies and programmes, such as open government, public sector innovation and administrative simplification.

The institutional foundations of digital government

This section discusses the institutional design of leading digital government units and structures across the reference countries, highlighting the strengths and weaknesses of each model. More specifically, this section will describe in detail the use of the digital government strategy as a governance tool, the organisational frameworks of digital government, the policy levers available to steer change and the use of co-ordination

mechanisms. For each of these themes, the section will emphasise the overall objectives and principles of institutional design in the development of digital government governance frameworks.

The digital government strategy as a tool for sound governance

Experiences across the OECD highlight the crucial role of strategic prioritisation of digital government in achieving a shared vision of public sector modernisation. While all OECD countries that responded to the 2014 OECD Survey on Digital Government Performance declared having a national strategy for digital government, the mechanisms, units and institutions in place for their implementation and their levels vary across countries. Securing political support for the digital transformation agenda is a critical factor of success. The objective of this section is to analyse the role of the digital government strategy as a governance tool supporting the digital transformation.

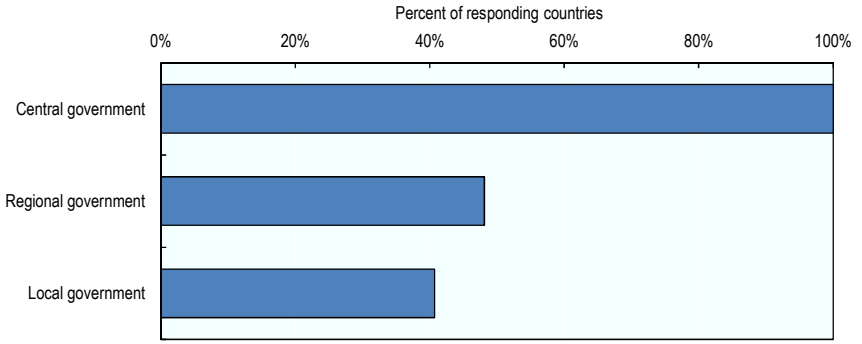
The development of the digital government strategy provides the opportunity for embedding a vision and its rationale and for the validation of digital government as an enabling tool for broader policy outcomes by all relevant stakeholders. This stage is a unique opportunity to build a shared vision of how ICTs can be used to improve societal well-being and the role of digital technologies in a modern public sector. Integrating the views and interests of the different stakeholders in this process allows the government to build a strong consensus, ownership and support for the digital transformation agenda across the public sector and the society as a whole. Moreover, experience shows that the best results come when the vision statement embedded in the strategy is linked to higher level public sector reform agendas, helping secure the commitment of the political leadership.

Moreover, the development of the strategy and the legal framework in place determine the scope and the levels of government that will be concerned by the strategy and the enforcement mechanisms, which may be coercive or consensual. While national digital government strategies in OECD member countries systematically include the central/federal government, they seldom include subnational levels of government (Figure 1.1). Cross-jurisdictional and legal limits often keep these strategies from being legally binding to subnational governments. However, adhesion to the strategy can also be achieved through engagement and more consensual approaches, ensuring coherence across levels of government. Broad consensus and coherence should be equally ensured across policy areas (Figure 1.2).

The development and implementation of the digital government strategy should be supported at all stages by an adequate communication strategy that helps ensure ownership and political support by the society as a whole and limit resistance to change inside of the administration.

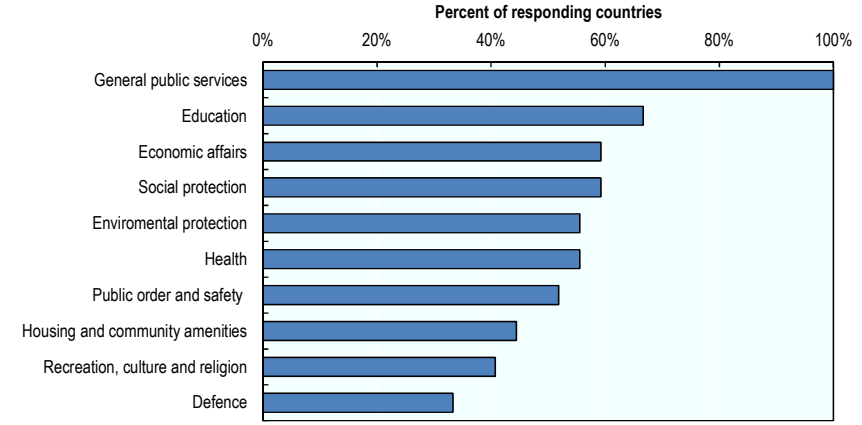
Figure 1.1. **Digital government strategies may apply differently across levels of government**

To what levels of government does the digital government strategy applies?



Source: OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

Figure 1.2. **Policy areas covered by the national digital strategies of OECD countries**



Source: OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

A specific and self-standing digital government strategy can play a key role as a governance tool. It can indeed provide a clear roadmap and action plan and facilitate the identification and/or selection of key strategic projects

in relation to the main targeted goals. Its progress can be measured and monitored, thus improving the accountability of government action and capacity to achieve results.

In order to capture the value of the strategy as a governance tool it should be appropriately articulated and should be sufficiently visible and distinctive to all the relevant actors of its ecosystem, regardless whether the given government chose to embed it in a broader national digital agenda or not. This is critical in order to ensure the feasibility of its use as a tool to support and implement efficient and effective digital government. Mexico is a good example of an OECD country that has achieved the necessary articulation of the digital government strategy with the national digital agenda while preserving the role of the digital government strategy as a governance tool by making it clearly identifiable by all key stakeholders.

The digital government strategy can also become an important instrument to plan and guide investments and decisions on the use of technology across the public sector in line with the overall national objectives. Depending on its level of precision, it can also enhance monitoring of the implementation of initiatives by making them visible and providing clear objectives, describing the theory of change, and outlining the roadmap towards the expected results. This is why it is important to have a specific digital government agenda aligned with the broader digital agenda and public sector modernisation objectives.

In certain cases, the priorities established by the strategy may condition the types of projects that may receive funding. While this approach can help channel required funds and efforts to the implementation of the strategy, inflexible use of this type of resource allocation may lead to overspending in certain areas or diminish the innovative potential of ICTs by limiting the experimentation space of public institutions. The central government needs to be able to set government priorities and provide regulations, standards and guidelines for ICT investment and steer change, ideally based on a broad social consensus. However, these should still allow public institutions to determine and attend to their own needs and mandates, and provide incentives and resources for innovators in the public sector. There is no fixed rule in determining the best funding model for digital government.

This means that the discussion goes beyond the simple choice of a "single centralised budget for ICTs" *vs* "decentralised budgets assigned to the individual policy areas". Often a mix of funding sources and models coexist, which may include a budget assigned to the co-ordinating agency/body, a specific fund for digital government/ICT projects managed by such an agency for the financing of specific initiatives in substantive policy areas that also have their own budget for ICTs. Countries like

Portugal and Uruguay, for example, have established centralised funds for ICT. This ICT funds option can be an alternative source of funding to finance specific digital government projects, or can complement the national yearly budget for ICT. In this second instance, the funds become a way to prioritise specific investments and initiatives towards the achievement of objectives foreseen by the strategy (e.g. fostering digital innovation, interoperability, uptake of common elements/systems, data-driven approaches, open data), which often cut across the administration and are aimed to spur a real digital transformation in line with the idea of digital government as opposed to e-government. A combination of financing mechanisms including, for example, an ICT dedicated fund combined with the generic budget for ICT would not prejudice the existence and use of resources by individual institutions to develop their own ICT earmarked projects in line with sector policies, but would still leave room for more strategic cross-cutting initiatives to grow.

In general terms, in order to support the achievement of the strategic objectives set by the overall digital government policy/strategy, it is an efficient practice to envisage the co-ordination between the body in charge of setting the digital government agenda and of overseeing its implementation across the public sector, and the Ministry of Finance, which assigns the yearly ICT budget to the different entities.

Roles and responsibilities in the definition of the digital government strategy also vary across the selected countries and the following approaches can be observed:

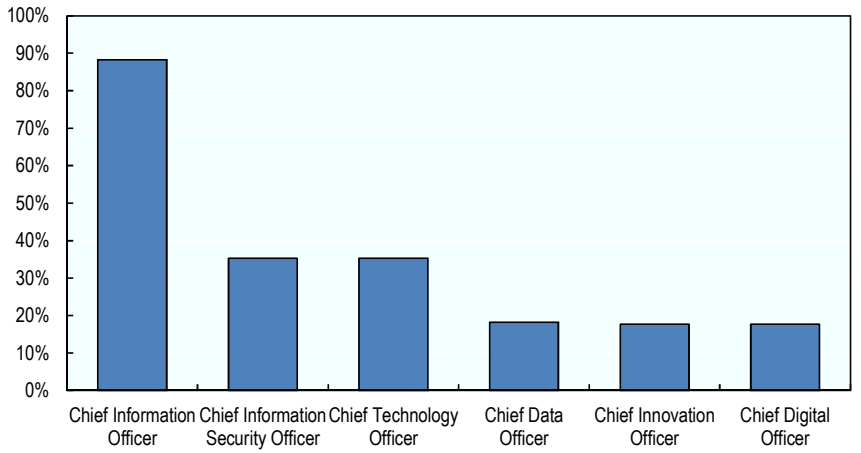
- Units or bodies responsible for co-ordinating the implementation of digital government are also responsible for the elaboration of the strategy and digital government policies and regulation. This is the case of Estonia, the United States and Uruguay. However, in these countries co-ordination and consultation mechanisms exist through both formal and/or informal channels, ensuring required levels of consensus around these policies and strategies.
- Strategic steering committees for digital government are in charge of drafting the strategy that is later adopted by a higher political governance body, giving legitimacy to the strategy as a governance tool. Such is the case in Denmark, Portugal and Spain.

Successful organisational and governance frameworks for digital government

Governing digitalisation and the transformational effects of digital technologies is a challenging task. Managing such changes appropriately

may provide public authorities with considerable returns in terms of citizen and business satisfaction due to the improved quality of public services, increased transparency, accountability and public sector productivity, as well as more effective and inclusive policies, which may ultimately contribute to rising trust in government. However, failure of ICT projects, privacy and security breaches, inefficient spending and poorly performing services may considerably undermine trust in the government's ability to achieve the digital government stage of development. Governments' attempts to manage the digital transformation and its demanding requirements have led to the proliferation of different governance units and structures across the OECD. The figure of the central/federal government CIO or equivalent position has become the most common form of co-ordinating unit or body for digital government activities. In some cases, the CIO's role is complemented by more experimental institutions or units depending on governments' priorities and efforts.

Figure 1.3. **ICT governance structures in the OECD**



Source: Author's own work based on OECD (2014c), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519; OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796; OECD (2016a), "OECD Questionnaire on Governance of Digital Government" (unpublished dataset), OECD, Paris; and desk research.

The traditional role of the CIO has been focused on supporting the strategic use of technology by government in order to achieve its goals, frequently driven by efficiency gains and the administration's own priorities.

However, following recent trends, these governing bodies have increasingly moved towards more user-centred and, in fewer instances, user-driven approaches. CIO structures across the OECD have developed units with the mission to improve user engagement, service design and delivery and, in many cases, data management as governments seek to improve public sector intelligence.

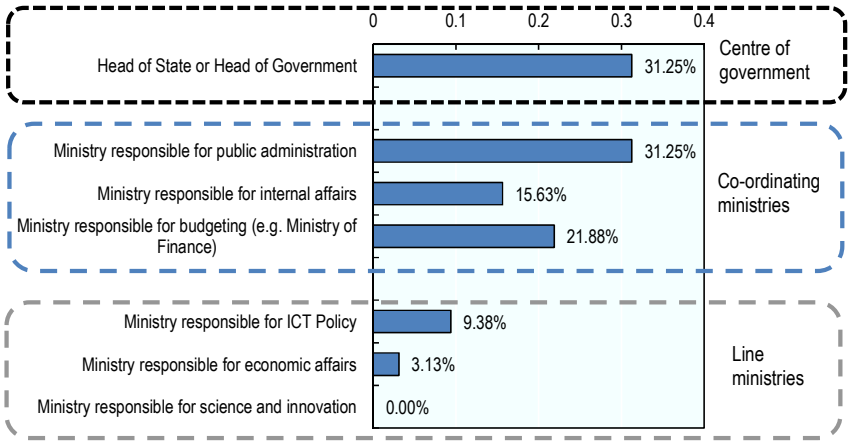
Some countries have opted for a model that includes a chief digital officer, either reporting to the CIO (as is the case in New Zealand or the United States),[1] as a separate structure (as in Australia) or accumulating the functions of the CIO (as in the United Kingdom). These digital transformation officers have until now been more disruptive in nature than the traditional CIO, introducing ways of working that parallel start-ups (such as agile methodologies) and a strong focus on service delivery and citizen participation. These units are responsible for developing public services that are digital by design. Having a unit dedicated to user-friendly service delivery and citizen engagement is increasingly seen as a good practice as it may help governments break down silos and push forward the digital transformation of the public sector.

While the idea of a required existence of a CIO, or equivalent position, for the central government is almost unanimous across OECD countries, the level of the CIO in the organisational structure of the government, to whom it reports, its mandate and policy levers are strong explanatory factors of its effectiveness in steering change in the public administration. Its location (Figure 1.4) and to whom it reports (Figure 1.5) may considerably influence the structure's political or financial leverage to foster change across the central government as well as the approach and focus of digital government implementation. The cross-cutting nature of digital government policy has lead most OECD countries to establish this unit under co-ordinating ministries or at the centre of government, thus creating enabling arrangements to create linkages between digital government and the broader public sector reform agenda and political objectives. In a number of cases, this unit or body is attached to a line ministry, such as the ministry responsible for economic affairs or in charge of information and communications technologies in a broad sense (e.g. information society). (Figure 1.4; see Annex A).

Countries like Australia, Japan, Portugal, the United Kingdom, the United States and Uruguay have placed their co-ordinating unit at the centre of government (Office of the Head of Government or the Head of the State). These governance arrangements usually reflect the commitment to the digital government agenda by the highest political level, benefiting from the political authority irradiating from the centre of government and greater leverage to embed its vision into the broader public sector modernisation agenda. A strong case can be made in favour of placing the digital government

co-ordination unit or function at the centre of government as experience shows that in most Latin American presidential systems the President represents the highest political authority. The organisational structures that gravitate around the Head of State provide the political authority to push forward important reforms. This arrangement, however, may be more prone than others to political considerations and tend to experience pressures for results and political capitalisation of the outcomes. Furthermore, changing administration priorities in such contexts may lead to inconsistent implementation of the digital government agenda, to the revision of the strategic objectives at each change in government, which can turn into unsatisfactory results. This is why it is essential to ensure the institutional stability of these governance arrangements, to balance the political support and commitment with the long-term sustainability of the decisions.

Figure 1.4. **Location of the central/federal government Chief Information Officer in OECD countries**



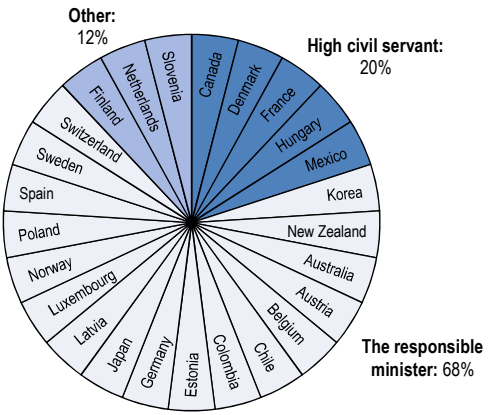
Notes: See Table A.1 in Annex A for the methodology.

Source: Author's own work based on OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796; OECD (2016a), "OECD Questionnaire on Governance of Digital Government" (unpublished dataset), OECD, Paris.

The political systems of Chile and Uruguay, in South America, do not allow for consecutive presidential terms, which may exacerbate the lack of consistency and continuity in the long run in the use of technologies. Uruguay, however, by establishing the Agency for Electronic Government and Knowledge and Information Society (AGESIC) has been able to

develop a governance framework and institutional arrangements that reap the benefits of being located at the centre of government while providing stability and continuity to its leadership, resulting in a consistent approach to its digital government policies.

Figure 1.5. **To whom does the head of the unit/function responsible for leading and co-ordinating ICT use report to?**



Source: OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

Another frequent institutional set-up consists of placing the digital government unit, or co-ordinating function, under a co-ordinating ministry that can help drive uptake of digital technologies across the public sector and support their cross-cutting nature. Countries like Canada (Treasury Board of Canada Secretariat), Denmark (Ministry of Finance) and Spain (Ministry of Finance and Public Administration) have followed this approach. The nature of these ministries is able to link digital government with broader public sector reform agendas. The key question is, however, whether the leading ministry has the political capacity to become a driver of change within the administration.

After reviewing a selected sample of the most successful cases of digital government, only Estonia has its co-ordinating function at a line ministry. However, in the case of Estonia, the practical reality is that this unit works in strong collaboration with the ICT policy advisor of the Government Office (Office of the Prime Minister) and operates in a very favourable context, characterised by great social awareness of the importance of the digital transformation, political support and strong informal co-ordination mechanisms

(OECD, 2015a). In the case of Chile, in the absence of a line ministry with the appropriate institutional capacity and political power, the size of the territory and the population suggest that this model would not be the most advisable.

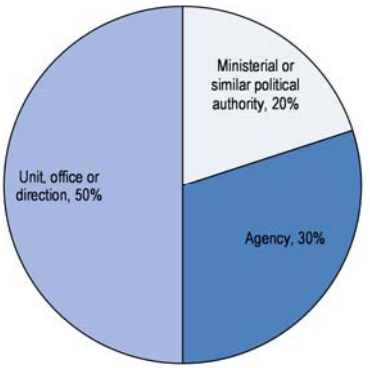
The hierarchical level of the unit, body or function in the central government will greatly influence its ability to secure the required leadership to use technology to drive change in the public sector. In this regard, we were able to observe the following types of institution effectively co-ordinating the deployment of ICTs in the public sector in the selected group of countries.

- **Internal unit, office or directorate:** units, offices or directorate in the centre of government or strong co-ordinating ministries usually have good co-ordinating capacity and knowledge of the political agenda of government (Barros, 2015). Experiences across OECD countries show differing levels of budget given to the unit responsible for co-ordinating digital government (as a percent of public expenditure). Certainly, political support and adequate financial resources need to be allocated to the unit/directorate for this organisational framework to be able to achieve substantial change in the administration, as was the case in the United Kingdom. In 2015, the Government Digital Service of the United Kingdom received over GBP 58 million, for a total of 0.01% of public expenditure. However, this type of structure tends to be very sensitive to political cycles and changing priorities of its supervising minister.

- **Agency:** agencies in the domain of digital government are characterised by the stability of their personnel and leadership, better funding, and greater independence from political cycles and priorities. They can be either simply executive or include strong policy-making and regulatory powers. In the cases where the agency has not been assigned regulatory powers, being attached to a strong ministry and good working relations at the top management level can compensate for this lack of power, as the ministry may be prone to adopt regulations proposed by the agency. The agency's capacity to enforce these regulations and its political support and legitimacy are essential to guarantee the effectiveness of its work. This institutional set-up raises the trade-off between political control and autonomy of the executive agency. Despite its greater independence from the political cycle, radical inobservance of political considerations *vis-à-vis* the existing ecosystem may translate into loss of political support, which would greatly diminish its ability to steer the digital transformation.

- **Ministerial or similar ranking political authority:** in this categorisation, countries with ministers, secretaries of state, vice-ministers or undersecretaries exercising the functions of government CIOs are taken into consideration. For simplification purposes, this review will refer to these cases as ministerial or similar ranking political authorities. These structures provide the digital government agenda with strong visibility and funding, as well as reinforced political and policy-making powers of the institution in charge for this agenda. This institutional set-up, however, faces the risk of instability in its leadership and lack of continuity in its agenda and goals. Furthermore, political considerations may bias evidence-based priorities in favour of more visible goals.

Figure 1.6. **Types of institution in selected countries with effective governance frameworks**



Notes: The countries studied include: Australia, Canada, Denmark, Estonia, New Zealand, Portugal, Spain, the United Kingdom, the United States and Uruguay.

Source: Author's own work based on the OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796; OECD (2016a), "OECD Questionnaire on Governance of Digital Government" (unpublished dataset), OECD, Paris; see Annex A.

The choice of governance structure does not seem to be directly related to the level of maturity in the use of digital technologies in governments, or to the public sector's capacity. Countries like Australia, Canada, Spain, the United Kingdom and the United States have opted for internal units, offices of directions to steer change across the public sector. On the other hand, Denmark and Uruguay have chosen to set up an agency model, whereas Estonia and New Zealand have both appointed high-level political

authorities responsible for digital government. Rather, it seems like the true question is what governance model – given the political system in place, the legal and administrative context, and the evolution of the governance of digital government in a specific country – will support a clear vision of digital government and its' stewardship, and will be able to develop strategic capacity to steer change by achieving a coherent use of technologies across the public sector over time supporting effective and efficient policy making. In the case of Chile, the institutional design should take into account previous experiences and the need to establish a governance framework capable of providing continuity in the design and implementation of the digital government agenda and of investments, in a political system that does not allow consecutive presidential terms.

In a large majority of cases, the government CIO is a political appointee, with some notable exceptions. In Denmark, for instance, the role of the CIO is played by a senior civil servant selected through pre-determined procedures. While civil servants tend to provide more stability and continuity to the digital government agenda, in certain contexts they may lack the legitimacy or political power to push forward the agenda. Where leadership comes from a political appointee, its associated authority may provide a stronger push in favour of the digital transformation and a higher level representative to lead talks with different agencies and ministries. However, the political considerations or instability of such a leadership may risk the continuity of the institutional agenda and the pursuit of longer term strategic goals. Portugal has developed an intermediate system for the governing boards and presidents of executive agencies such as the Agency for Administrative Modernisation (AMA), which includes an open call and competitive process in which a selection panel prepares a shortlist, with a final selection by the political leadership, exactly as in the Chilean *Sistema de Alta Dirección Pública*, a central senior civil service system.

The legal basis for the governing units or bodies of digital government also varies, with countries such as the United States and Uruguay creating their digital government units or bodies through the enactment of a law and others such as Australia,[2] Denmark, Portugal and Spain proceeding by decree. While these choices are also based on legal tradition, they also have policy consequences (Table 1.1).

While this document often talks about agencies in general terms, drawing conclusions from general trends, it is very important to keep in mind that the term refers to a great variety of institutional arrangements and designs that classify agency types. While in most countries the creation of agencies requires a law, in certain countries or for certain agency types that is not the case (e.g. they are set up initially with decrees). The legal design of agencies is highly dependent on national legal systems. Agencies usually

have a separate legal identity, may be characterised by alternative sources of funding and staffing procedures.

Table 1.1. **SWOT analysis of the legal basis of the government chief information officer**

	Internal factors		External factors	
	Strengths	Weaknesses	Opportunities	Threats
Law	Provides the institution with more stability and continuity of its work.	Less flexible arrangement.	Strengthening the institutional basis of digital government, enabling long-term planning.	It may limit the ability of the Head of Government to organise the administration in a way that reflects his/her programme's priorities.
Decree	A more flexible legal framework, allowing the executive to review the existing institutional set-up to determine the best governance arrangement for the context and for the implementation of its programme.	The existence of the unit or body is vulnerable to changing political priorities of the executive.	Greater flexibility allows for experimentation and innovative approaches in the governance of digital technologies in the central government.	The stability and continuity of the digital government agenda may be compromised by political considerations.

The proliferation of agencies across public administrations was greatly based on the idea of making policy and service delivery independent from the political cycle. However, experience over the last decades shows that these agencies function in an ecosystem. For instance, unless the agency is financially autonomous, it will take part in the political bargaining for budget allocation, bringing the institution back to the political cycle. Moreover, governments are ultimately accountable for public sector performance. In that sense, there are important risks associated with loosening too much the political control over executive and regulatory agencies. There is a balance to be found between stability and technical credibility that may have a somewhat independent public agency and the need for political legitimacy. This means that the design of an agency requires careful assessment of the existing context and a solid business case.

Policy levers to steer the digital transformation

The mandate and responsibilities of the units or bodies leading the digital transformation vary greatly across the OECD as do the policy levers at their disposal to ensure compliance with digital government rules and regulations. Certain successful countries, such as New Zealand, have opted for more coercive levers while others rely mostly on soft levers, such as

Denmark and Sweden, suggesting that there is no one-size-fits all model. Governments should, however, ensure that the tools provided are coherent with the overall public governance ecosystem and consistent with existing co-ordination mechanisms, institutional capacities, legal and regulatory frameworks, and the political and administrative cultures in the public sector.

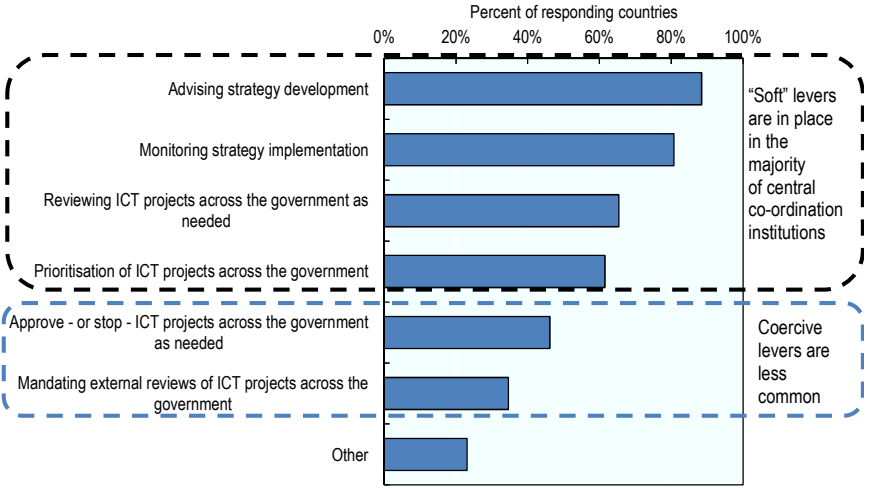
Table 1.2. **Classification of agency types**

Attribute	Departmental agencies	Public law administrations	Private law bodies
Institutional and legal foundations	Part of ministries. No separate legal identity from the state. Function under public law.	Function mostly under public law, but can be partially separate or fully separate legal bodies.	Quasi-corporations and non-commercial private law bodies.
Governance structure and control	No governing board (although might have advisory boards). Director-general (or chief executive) is directly appointed by the minister. Minister has a formal (but less direct) control while the director-general is responsible for management of the organisation.	May either have a governing board or single person authority, possibly with advisory board. Top governance has management responsibility, minister has indirect control.	Usually have a governing board, and minister has indirect control.
Financial management and personnel rules	Staff employed under general civil service rules for appointment, promotion and removal. Input controls on the price and quantity of labour are generally relaxed. Most funded through allocations from the state budget and budget is annually reviewed through the annual state budget process. Some are partially financed by user fees.	Staff rules vary between full civil service controls, differentiated controls and outside civil service but subject to a general framework for state servants. Most project labour agreements are financed by tax revenue, and their budget is part of the general budget law, although they often can carry forward surpluses.	Staff usually employed under general labour laws, with no (or limited) external controls on inputs. Usually mostly financed by sales revenue and can carry forward surpluses, borrow and lend. Budgets are separate from those of ministries.
Function	Usually delivery of non-commercial services to citizens and support services to other state sector bodies.	Created for a differentiated governance structure (governing board), allowing more management autonomy or policy independence in some cases, for a differentiated control environment or for managerial autonomy. Specific functions vary tremendously, from service delivery to regulatory and quasi-judicial functions.	Might have a full profit objective or mainly a service objective function.

Source: Laking, R. (2005), "Agencies: Their benefits and risks", *OECD Journal on Budgeting*, Vol. 4, No. 4, OECD Publishing, Paris, http://dx.doi.org/10.1787/budget-v4-art19-en, based on OECD (2002), *Distributed Public Governance: Agencies, Authorities and Other Government Bodies*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264177420-en.

Figure 1.7. **Levers of ICT governance in OECD countries**

What are the main responsibilities of the unit/function leading and co-ordinating ICT deployment in the central government?



Notes: The detail by country can be found in Table A.3 in Annex A.

Source: OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

Given the complexity and the disruptive potential of the digitalisation and redesigning of government functioning and operations, to achieve its goals the unit or function in charge must count on strong political support and commitment. The political support for this agenda may materialise in different ways, but it can be identified by the proximity to powerful government institutions (e.g. centre of government, Ministry of Finance), the resources and tools made available for the unit or body, the hierarchical level of its head in the government organisational chart. For instance, the Portuguese AMA, an executive agency, is located at the Presidency of the Council of Ministers and has substantive powers in terms of allocation of financial resources and approval of ICT projects. The AMA manages the administrative modernisation financing programme which is composed of

EU structural funds and national resources. This gives the agency important leverage to ensure the implementation as the approval of funding for digital government projects through this programme is conditioned on compliance with existing guidelines. Similarly, every ICT project of EUR 10 000 or more must be approved by the operational e-government network that is chaired by the AMA, which verifies compliance with guidelines, the non-duplication of efforts, and compares the prices and budgets with previous projects in order to ensure the best value for money. This operational board also includes the Agency of Shared Services for the Public Administration (eSPap) and other relevant ministries for the project in question.

Similarly, in Uruguay, the AGESIC is located at the Office of the President and reports directly to the President through the Pro-Secretary of the Presidency. This agency is the governing body of digital government in the country with both executive and regulatory powers. The agency issues regulations and administrative decisions in the field of its competence and has a dedicated fund to provide technical and financial support for ICT projects in the public sector. These funds are allocated through a competitive process and in function of their relevance or potential impact. While having the power to impose sanctions, this tool is rarely used as it is perceived as inadequate or harmful in general terms for healthy governance and collaboration dynamics.

In Spain, the government CIO (the director of ICT) reports both to the Ministry of the Presidency and the Ministry of Finance and Public Administration and holds approval powers over all ICT procurement and provides shared ICT services for the central government. In Denmark, projects meeting certain criteria must comply with certain specific governance processes and arrangements, such as using the ICT Project Model (see Annex A) and having its risks assessed by the National IT Project Council. Furthermore, in order to improve efficiency in ICT procurement, the Shared ICT Service Centre of the Danish Ministry of Finance procures services for public institutions and is complemented by a joint purchasing organisation that procures products and services for central and subnational governments to ensure best prices for public sector institutions.

In countries like Estonia, the United States and Uruguay, the governing body of digital government has been provided with regulatory powers in its area of work, whereas in other countries, like Denmark or Portugal, that is not the case, but this lack of regulatory powers is compensated by close working relationships with their respective ministries that are able to adopt regulations. In these cases, agencies are actively involved in the drafting of regulations or make specific proposals to regulations that may relevantly affect their area of work.

Institutional arrangements should take into consideration the needs and eventual trade-offs that revolve around control, efficiency, even the quality of public services across the administration and space for innovation. As previously mentioned, over-centralisation may tend to concentrate on economies of scale while making innovation and reactiveness more challenging because of rigid regulation and encumbering amounts of work. Using thresholds and strategic relevance to structure governance processes may be an efficient way, while ensuring space for experimentation with new technologies. The centralisation of procurement processes and the establishment of ICT shared services may help government make important economies if these are appropriately designed to ensure the adequate agility of delivery for projects that are time sensitive and with steady follow up of ICT procurement in a government or public sector-wide scale.

Co-ordination mechanisms

Co-ordination and governance frameworks for digital government should have at least two levels of articulation to ensure adequate performance and coherent use of digital technologies across government. The first one concerns high-level strategic co-ordination, serving as the living political governance mechanism. This co-ordination level should include relevant stakeholders for decision making, such as the highest level of responsibility for digital government, as well as key relevant stakeholders responsible for the reform of the public sector (centre of government or co-ordinating ministry), finance, ICT infrastructure and subnational governments normally in charge of a large part of public services. The second level concerns operational co-ordination and should deal with implementation challenges and bottlenecks and involve all relevant actors for the specific ICT projects and be chaired by the digital government authorities and the CIOs of the different central government institutions.

Beyond public sector reform and modernisation efforts, the digitalisation imperative has lead most governments to develop national digital agendas. These national agendas are intended to serve as a roadmap guiding government action as public authorities seek to enable their constituencies to reap the benefits of the digital economy. These agendas often include areas such as connectivity, digital literacy, digital economy and, in many cases, digital government. Whether the digital government strategy is structurally integrated into the digital agenda (as it is in Chile) or not (as in Portugal), there should be formal articulation mechanisms to ensure the coherence of both instruments. In Uruguay, for instance, this co-ordination is ensured by the AGESIC, which is responsible for the development of the digital government strategy and the co-ordination of the digital agenda with all of the relevant stakeholders.

Table 1.3. **SWOT analysis of policy levers**

	Internal factors		External factors	
	Strengths	Weaknesses	Opportunities	Threats
Located at the centre of government	In agreement with the cross-cutting nature of digital government and may be perceived as a reflection of strong political support.	Greater political exposure.	Creation of synergies with broader public sector reform agendas.	The digitalisation agenda may be more exposed to political considerations, pressures and cycles.
Located at the Ministry of Finance	Strong ministry with a lot of political and financial leverage.	The reform agenda of the ministry may be too focused on efficiency.	Receive political and financial support from the ministry to move the agenda forward.	Neglecting broader aspects of digital government such as service quality improvement, and more politically driven objectives of public sector reform, such as openness and public participation.
Funds to financially support ICT projects	Provides the co-ordinating unit or function with the ability to offer significant positive incentives and strong leverage over compliance	Requires a centralised and potentially reductionist view of what a high-impact project is.	Increase compliance with digitalisation guidelines and regulations from institutions looking to access funding for ICT projects.	Promoting an over-centralised view of digitalisation; decrease ICT investment by public institutions. Central funding of ICT projects may also slow down the implementation of ICT projects.
Regulatory powers	Ability to independently establish and regularly update the regulatory framework and standards setting for digital government.	If exercised by excessively autonomous structure, it limits the policy space of legitimately elected political authorities.	Developing an enabling regulatory framework for digital government.	There is a risk of excessively relying on coercive levers, neglecting other sources of incentives (e.g. financial, social). Reducing space for innovation.
Approval or stopping of ICT projects	Powerful lever to ensure compliance with ICT guidelines, regulations and strategic priorities.	May sacrifice agility and innovation space.	Attaining a satisfactory level of coherence in the use of digital technologies in the public sector. Avoiding duplications and inefficiencies.	Risk of encumbering the unit's or function's work due to over-centralisation. Slow reaction.
Control of ICT procurement	Well positioned to bargain better deals for the public administration and have a good visibility of existing ICT assets and procurement contracts.	Sacrifice agility and innovation space.	Efficiencies.	Risk of encumbering the unit's or function's work due to over-centralisation. Slow reaction.

Source: Author's own work.

Box 1.1. Co-ordination mechanisms in selected countries

Australia

In Australia, there is a strategic-level committee, the Digital Transformation Committee of Cabinet, which sits under the Cabinet and is chaired by the Prime Minister.

The Service Delivery Leaders is a steering committee comprised of senior public servants from major government departments. The Service Delivery Leaders is an early consultation point for Digital Transformation Office activities with a whole-of-government impact, including advice on strategy and co-ordinated service delivery activities across government. The Service Delivery Leaders may also create subordinate boards, working groups or other bodies to undertake specific work.

Denmark

Denmark has found an original and sustainable mechanism for achieving co-ordination and commitment to the national strategy across the public sector. The Steering Committee for Cross Government Co-operation (Styregruppen for Tværoffentlige Samarbejder, STS) was set up as a result of an agreement between the government, Danish regions and local government Denmark in 2005.

The STS is a cross-government co-ordination body aiming at creating a common ground in the work on digital government. The overall framework for the co-ordination is confirmed in the annual negotiations on the next year's budget between the government and the representatives for the regions as well as for the municipalities. The STS consists of high-level representatives (at the level of permanent secretaries/managing directors) from the five most important ministries for digital government implementation from the central government and the associations representing the municipalities and the regions. The STS is responsible for determining overarching principles and coherent framework conditions for digital government, co-ordinating initiatives across the public resources in order to better use resources, deciding on resource allocation, and determining models for digital government operations and maintenance of projects.

At the operational level, the inter-ministerial project office sits at the Agency for Digitalisation that serves as the secretariat for the Danish Council of IT Projects. It also develops and maintains IT project models, business cases and programme models. It serves as the Consultancy Secretariat for IT operations assisting the central government with the management and procurement of outsourced IT operations. Members of the council are ICT managers: half from the public sector, half from the private sector. The focus is on ensuring the presence of really experienced managers in the council. Each of the members is obliged to inform about potential conflicts of interest, and abstain themselves from participating in specific decisions or performing an assessment whenever a conflict may arise. All members are nominated by the Minister of Finance.

Box 1.1. **Co-ordination mechanisms in selected countries** (*continued*)

Portugal

The Agency for Administrative Modernisation (AMA) is responsible for the approval of ICT projects over EUR 10 000 in observance of the norms and guidelines defined by the e-Government Network. The e-Government Network is chaired by the AMA and gathers other relevant stakeholders, such as the ICT Shared Service Centre, and meets at both the high political level to determine strategic orientation and at the operational level.

Moreover, the AMA follows a Programme Management Officer (PMO) structure led by the Director of e-Government. This team is in continuous contact with focal points at institutions relevant for the implementation of digital government projects to monitor project roll out. The e-Government Network organises meetings and specific workshops to discuss trending topics or issues in the area of e-government.

Spain

The ICT Strategy Commission (CETIC), an inter-ministerial body at the highest political level comprising senior officials from all ministries, defines the strategy that once approved goes to the Council of Ministries. The CETIC also defines the services to be shared, and determines the priorities for the investments, reports on draft laws, regulations and other general standards with the purpose to regulate ICT matters for the general state administration. Furthermore, the CETIC promotes collaboration with the autonomous regions and local authorities for the implementation of integrated inter-administrative services.

The Committee of the Directorate for Information Technologies and Communication includes 25 chief information officers (CIOs) of the different ministries (13) and agencies (12), and the deputy directors for ICTs of all ministries and units. This committee leads the co-ordination of the implementation of ICT projects.

Uruguay

The Honorary Directive Board is a distinctive governance board in the regularity of its meetings (once a week), in its decision-making powers and the composition of its board. The Honorary Directive Board takes virtually all high-level decisions of the Agency for Electronic Government and Knowledge and Information Society (AGESIC). It is composed of five members, including the delegate of the President (formally the Pro-Secretary of the Presidency – in practice it is often the Director-General of the Presidency by delegation) – the CEO of the agency and three representatives appointed by the presidency. At the moment these include one representative from the private sector, one from academia and one from the technical community. A complementary advisory board includes the CIOs of the different public institutions.

Box 1.1. **Co-ordination mechanisms in selected countries** (*continued*)

The AGESIC has an area dedicated to bodies and processes ("*organismos y procesos*") which is in charge of managing relationships with other public institutions and seeks to monitor and support the implementation of digital government policies, co-ordinate cross-cutting projects and perform change management. The AGESIC also has a strong PMO structure, providing a centralised follow-up and support mechanism for digital government project implementation.

Source: OECD (2016a), "OECD Questionnaire on Governance of Digital Government" (unpublished dataset), OECD, Paris; OECD (2010a), *Denmark: Efficient e-Government for Smarter Public Service Delivery*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264087118-en; OECD (2010b), *Good Governance for Digital Policies: How to Get the Most Out of ICT: The Case of Spain's Plan Avanza, OECD Publishing, Paris*, http://dx.doi.org/10.1787/9789264031104-en; author's own work.

Another common scenario is one where the digital agenda is jointly developed through the work of a high-level council or committee. Such councils or committees often include relevant actors of the digital economy ecosystem, such as the Ministry of the Economy, the institution responsible for the regulation of telecommunications and the connectivity agenda, telecom service providers, the Ministry of Education and the centre of government. In this case, it is critical that the body or unit responsible for digital government (e.g. the government CIO) participates in such a co-ordination body, helping align objectives and efforts.

The governance of digital public services

More connected, informed and mobile constituencies have increased democratic pressures for more participatory decision-making processes and more tailored services, leading OECD governments to change their approach to digital public service delivery. To meet citizens' growing expectations, governments have shifted from government-centred (focused on increasing cost reduction, efficiency and productivity in service delivery) to user-centred (focused on anticipating users' needs to improve administrative and personal services) and finally moving to user-driven approaches (focused on fostering the digital transformation to enable governments to create increased public value). User-driven approaches build on the value of digital technologies to spur broad public modernisation through the integration of technology in service design and delivery and in the shaping of public policy outcomes. This means, for example, being open to achieving efficiency and productivity gains through new forms of partnerships with the

private and the third sectors, or crowdsourcing ideas from within the administration and the society at large.

As the leading governing structure for the use of ICT in the public sector, government CIOs are generally responsible for co-ordinating strategic design and implementation, developing standards, and supporting online service delivery. As such, nine out of the ten government CIOs of the countries selected for the comparative analysis in this Review are responsible for the co-ordination of digital service delivery. However, their traditionally greater focus on efficiency and the internal priorities of the administration leads many governments to put services online without substantial transformation of administrative procedures and processes. This realisation has prompted some OECD governments to develop governance frameworks that seek to break with this approach, and complete the digital transformation of public services.

The Government Digital Service of the United Kingdom helped rethink digital public services within and across levels of government, making the public sector's digital presence more user-friendly and intuitive, thus supporting uptake, while making progress in interoperability of public systems and sharing of resources to redesign processes.

Inspired by United Kingsom's experience, the United States established 18F inside the General Services Administration, an independent agency, and the US Digital Service under the federal government CIO. 18F works as an internal consultancy firm, charging for services, helping public institutions deliver high-quality digital services. The US Digital Service, on the other hand, provides strategic support to high-impact public-facing programmes in line with presidential priorities to simplify and improve digital services. Similarly, New Zealand has established a digital transformation officer that reports to the government CIO.

Australia followed this trend establishing in 2015 a Digital Transformation Office reporting directly to the Prime Minister and responsible for whole-of-government service delivery transformation. However, its experience has been unique as this office was conceived as a separate body from the government CIO – whose objective is using technologies to make government more efficient – whereas the objective of these kind of digital transformation units is to make services digital by design, helping governments make the transition from e-government to digital government.

This trend in the governance of digital service delivery comes from a clearly identified need: making services simpler, more accessible and digital by design. The CIO and the digital transformation officer roles may have a number of overlaps and as such hierarchical linkages or strong co-ordination

between the two is required, which explains why these roles have either been combined or assigned to the same organisation. Separating these two functions should be supported by a clear business case and neatly identified priorities and objectives, and should be endowed with means to ensure the alignment of their work.

Governing data as a strategic asset for public sector intelligence

The use of ICT can have a substantial impact on public sector performance through enhanced ability to take decisions based on data, improving public sector intelligence, and supporting better policies and services. This has lead governments to increasingly recognise data as a strategic asset and adopt organisational frameworks that help maximise the impact of data in the public administration, i.e. improving policy-making capacity, public sector productivity and public service delivery. Achieving such an outcome requires building a data-driven public sector (Principle 3 of the OECD Recommendation) which implies: 1) better exploiting digital technologies and data analysis to understand societal problems; 2) embedding data use throughout the policy cycle (i.e. voice, design, delivery, accountability); and 3) putting in place governance arrangements to ensure responsible and coherent use of data that benefits citizens and strengthens public trust.

The creation of data-driven public sectors is largely enabled by the governance frameworks in place to foster the use of data for modernisation and public sector innovation. In September 2014, France appointed its first government-wide Chief Data Officer, a trend that has been followed by the United States (February 2015) and the United Kingdom (March 2015). These new roles are charged with helping public agencies improve their organisational arrangements to better manage data as an asset. Chief data officers are expected to make a measurable impact upon how public institutions create, store, manage, use and share data and to strengthen evidence-based policy making (OECD, 2015c).

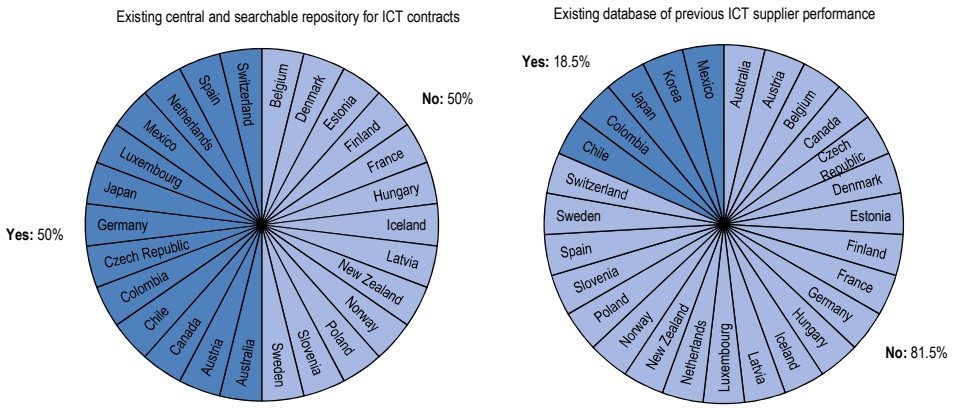
These new data governance arrangements vary in their form and articulation with ICT governance arrangements. While the United States' federal government Chief Data Scientist is attached to the White House Office of Science and Technology Policy, in the United Kingdom the Chief Data Officer accumulates the roles of CIO and Chief Digital Officer. Similarly, France's Chief Data Officer recently became the government CIO, accumulating both functions. Denmark, Estonia, New Zealand and Uruguay have all adopted an alternative model for data governance, in which data policy, standards, guidelines and interoperability frameworks and platforms fall under the responsibility of the government CIO or

equivalent position. Similarly, Australia is looking into the development of some form of data governance.

In addition, government CIOs have traditionally played a key role in ensuring data privacy and security. In six of the ten reference countries, the leading unit on digital government is responsible for data privacy and/or security.[3] In other countries, some forms of data privacy or security enforcement authority exists independently from the CIO, in which case responsibilities should be clearly divided and co-ordination mechanisms formally put in place to ensure coherent approaches.

Data management strategies, policies and governance should be part of an overall vision and be in tune with digital government policies to ensure coherent objectives and practices across government. As with the digital transformation of services, whenever responsibilities do not fall under the leading digital government unit or body, data management policies should be strongly co-ordinated with digital government authorities to ensure coherent approaches and exploiting potential synergies.

Figure 1.8. **Tools to support a strategic approach to ICT procurement**



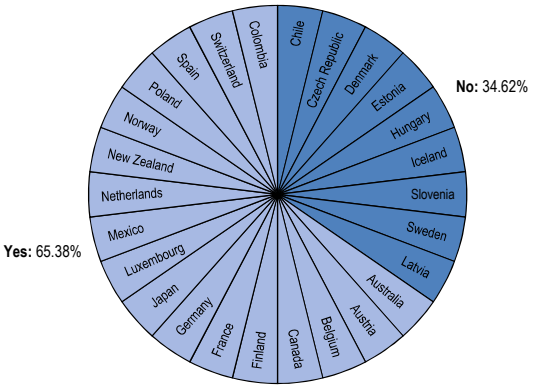
Source: OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

Procuring digital technologies

Governance frameworks should enable governments to develop a strategic approach to procuring technologies (Principle 11 of the OECD Recommendation). Achieving a strategic approach requires a clear visibility of existing contracts and assets, inter-agency agreements, the age of existing assets to help plan investment, and the historical performance of ICT providers. Despite having developed some of the required tools to support

strategic procurement of ICTs (Figure 1.8), Chile has yet to develop a strategy covering ICT procurement specifically (Figure 1.9).

Figure 1.9. **Countries with a strategy covering ICT procurement specifically**



Notes: For the detail of countries, see Table A.4 in Annex A.

Source: OECD (2014b), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

In the need to develop a structured approach to ICT procurement and investment, governments have established centralised units or bodies in charge of ICT procurement policy, in most cases under the CIO. To improve the procurement of digital technologies, governments have opted for different solutions such as shared IT service centres, concentrated responsibility for certain types of data or government process management in one ministry or agency (e.g. identity, authentication, registration, licensing) and cloud computing – which enables the distributed sharing of resources, software, data and/or processing capacity to users and computers on demand.

While all reference countries offer some form of shared IT services, shared services arrangements and models vary significantly. For instance, Estonia, New Zealand, Spain, the United Kingdom and Uruguay provide shared IT services under the direct or indirect responsibility of the government CIO, whereas in the rest of the countries shared services are provided by a separate entity, even if in some cases the government CIO may participate in its governance bodies.

Shared services and technical support business models vary across countries. For instance, Government IT, Denmark's IT shared services agency, has as a strategic objective to contribute to the public sectors'

efficiency. As such, one of its objectives is to provide competitive IT services to public agencies and ministries. It declares the intention of providing its client ministries or agencies IT services below market prices without making losses. To achieve this, it uses market prices benchmarks. In the United States, 18F, at the General Services Agency, works as a consultancy. It deploys implementers to code or manage ICT projects and it runs on a cost recovery model where client agencies reimburse the digital agency for its work, operating on a model that is closer to a traditional business than to a government organisation.

Institutional set-ups must reflect government priorities. While sharing resources is a potential source of economies of scale and scope, empirical research shows that these results largely depend on the motives for establishing a shared service centre, change management, the governance and funding mechanisms put in place, as well as the scope of the activities. Reaping the full benefits of shared procurement mechanisms for basic ICT infrastructure requires clear procedures and monitoring mechanisms to identify drivers of efficiency and factors hindering procurement performance, and provide a clear view of the progress and savings made and allowing the shared service centre to set clear and concrete expectations with its partners in the provision of ICT services. ICT procurement rules and mechanisms must also be in tune with new forms of technology deployment (e.g. agile delivery methods), foster competition (giving opportunities to small specialised players) and be enforceable. The government of New Zealand, for instance, has developed a strategy that sets a clear vision for how ICT investment and capability will be managed over the period covered and requires agencies to submit their strategic plans for review by the government CIO. Agencies are also required to inform the government CIO of investment intentions through existing government planning processes. In addition, the government CIO, as the functional leader of government ICT, has a mandate to direct government departments to adopt all-of-government initiatives where it is advantageous to do so. Agencies considering procurement of cloud computing solutions must comply with the ICT assurance framework, in particular the Cloud Computing Information Security and Privacy Considerations.

However, too much centralisation should be avoided, otherwise risking making digitalisation slow, rigid and inefficient. Using budget thresholds to structure governance processes of ICT projects and procurement should be seen as a good practice allowing government to manage risks while providing space for innovation, and higher agility of small projects.

Co-ordinating digital government with other public sector reform agendas

The cross-cutting nature of the digital government agenda makes it inherently synergetic with a broad diversity of policy areas and public sector reform agendas. This section will discuss how the digital government co-ordinating unit across reference countries relates to the policy areas and public sector modernisation efforts most frequently associated with digital government, namely, public sector innovation, administrative simplification and open government.

Using technology and data to foster innovative governments

Public sector innovation refers to new solutions or organisational arrangements that help public administrations to be more efficient or deliver better services. The digital transformation and data policy have significant synergies with the public sector innovation agenda. Countries like Norway, Poland, Portugal and Uruguay have developed their public sector innovation efforts under the oversight of the government CIO.[4] In other cases, as in the United Kingdom or the United States, the co-ordinating unit for digital government leads the work on digitally enabled and data-driven innovation. This kind of arrangement helps maximise the impact of both agendas and to create bridges between the two.

Other OECD countries, like Korea, have turned the question around, putting the digital government unit under the head of public sector innovation. Finally, a third group of countries has put both agendas on an equal step under public sector modernisation structures, as in Portugal, or simply as separate structures in government. These arrangements will depend on how governments define innovation and its scope as well as how the public administration is structured. For instance, while the digitally-enabled falls under the responsibility of the United States federal government CIO, broader work on public sector innovation is carried out at the General Services Administration, an independent agency. In the case of the United Kingdom, the broader work on government innovation is led by a different unit, the Government Innovation Group in the Cabinet Office, at the same hierarchical level as the Government Digital Service.

Ideally, the governance arrangements should help governments reap the benefits from existing synergies while recognising the differences in scope between both digital government and public sector innovation agendas, as not to limit the potential of their conceptual framework and practical tools for improving public sector performance. This can be achieved by putting these two agendas under the same institution on similar hierarchical levels

or by establishing robust co-ordination mechanisms between the two separate structures.

Digital government and administrative simplification

Another area of potential synergies with digital government is the work on administrative simplification. User-friendly and easy to use digital services play a key role in reducing administrative burdens. Units and structures responsible for digital service delivery have moved towards user-centred and user-driven approaches to service delivery, improving user experience and simplifying access to services, thus becoming increasingly involved in the administrative simplification and economic competitiveness agendas. In Estonia, for instance, the Undersecretary of Communications and State Information Systems (government CIO) played a leading role in setting the broader government-wide administrative simplification agenda, that due to its scope fell under the responsibility of a different ministry.

However, few cases have institutionally linked these efforts with a clear mandate. Among the countries selected for comparative analysis, Portugal and Uruguay have experienced a clear institutional link of administrative simplification, public innovation and digital government. These three agendas share a vast field of potential synergies that should be maximised by institutional design and co-ordination mechanisms. Denmark gathers both agendas – administrative simplification and digital government – under the same agency in recognition of the importance of ICT to simplify administrative procedures.

To reap the full benefits of using ICTs to simplify and make interactions with public institutions more agile, governments require strong co-ordination between digital government and administrative simplification programmes. Furthermore, efforts should increasingly move away from programmes that settle for putting services and procedures online and towards the development of public services that are digital by design.

Steering the use of ICT to foster open government

The use of ICT provides the opportunity to promote openness, transparency and inclusiveness in governments' processes and operations, ultimately supporting public institutions in maintaining or regaining trust (Principle 1 of the OECD Recommendation). The strategic and coherent use of technologies can also support public participation and engagement, the crowdsourcing of ideas and data, as well as new forms of collaboration between the public, private and third sectors (Principle 2 of the OECD Recommendation). The Open Government Partnership, through its founding document the Open Government Declaration, recognises the value of ICT to support more open, participatory, accountable and effective governments.

To ensure consistency in the use of technologies as an enabler for open government, public institutions have increasingly associated the digital and open government agendas.

Among the cases studied for the comparative analysis of this work, Canada, Denmark, Portugal and Uruguay have charged the unit or structure leading digital government with the responsibility for co-ordinating and leading action on open government. The most common scenario among the reference countries is one where, despite being similarly cross-cutting in nature, the open government agenda is piloted by a different unit or task force, often at the centre of government, that in co-ordination with relevant stakeholders, including businesses and civil society organisations, develops open government action plans and oversees its implementation.

However, digital government structures remain heavily involved in the open government agenda across the reference countries even if they do not lead or co-ordinate its work. Eight of the reference group countries are responsible for the strategies for opening up government data, i.e. the Open Government Data Strategy and implementation. This shows the relevance of government use of ICT for driving open government in today's society and the need for a co-ordinated approach with shared basic principles, such as free access to information and "open by default" standards for government data.

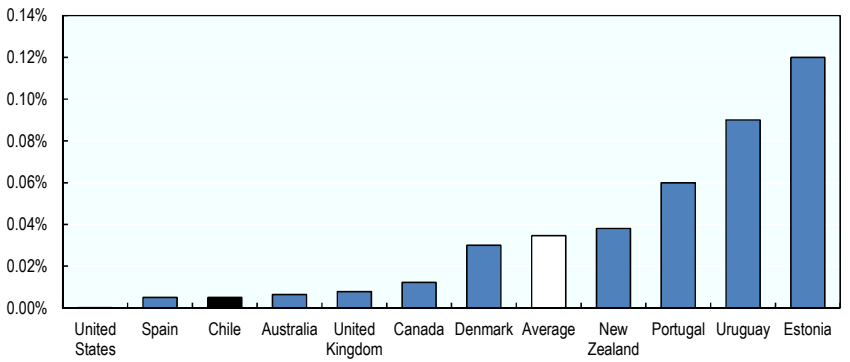
Funding the digital transformation

It is important to highlight that funding models of digital government units or structures vary from one country to the other. Sources of revenue may include budgetary appropriations and special funds dedicated to strategic digitalisation projects. The United States, for instance, has the Information Technology Oversight and Reform Funds to drive value in IT investments "by making smarter investment decisions and reducing waste, duplication, and inefficient uses of IT through data-driven investment management, deliver digital services to 25 federal agencies, and protect IT assets and information by improving oversight of federal cybersecurity practices" (US Senate, 2016). Similarly, Portugal's AMA is responsible for the structural funds dedicated to ICT, which include national and European funds dedicated to public sector digitalisation. Several other European countries benefit from the EU structural funds dedicated to public sector modernisation and digitalisation. Among the reference countries for this review, Estonia also benefits from such a mechanism. Moreover, in certain countries digital government units or bodies are allowed to charge public institutions for certain shared or tailored technical support services, representing an additional – yet marginal – source of revenue.

On average, the budget of the leading digital government unit or structure in the countries of reference represents 0.035% of total public expenditure. However, budgets may vary depending on infrastructural needs, the type of institution, the scope of the unit's responsibilities, the structure and scope of activities of the public sector (dictating the magnitude of government spending).

Figure 1.10 suggests that digital government units in federal systems[5] tend to have smaller budgets relative to public expenditure. While unitary systems spend 0.05% of public expenditure through their digital government units on average, federal systems have an average relative expenditure that is ten times less (0.005%). Several factors may be at play, including more distributed government responsibilities and implementation of digital government policy. Chile's State Modernisation and Digital Government Unit (Unidad de Modernización del Estado y Gobierno Digital) counts one of the smallest relative budgets among unitary systems, second only to the Spanish Direction of ICT.

Figure 1.10. **Budget of the unit or structure leading/co-ordinating digital government as a share of total public expenditure, 2014**



Notes: The Direction of ICT of Spain was created in 2014. Data for Spain correspond to fiscal year 2015. Data for the United Kingdom correspond to fiscal year 2015. For the other countries, data from fiscal year 2014 are used. For more details, see Table A.5 in Annex A.

Source: National budgets, national budget execution reports; OECD (2016a), "OECD Questionnaire on Governance of Digital Government" (unpublished dataset), OECD, Paris.

Significant differences in budget size can also be appreciated if sorted by type of institutional structure. Units, offices or directions average budgets of 0.006% of total public expenditure, with the Government Digital Service – the United Kingdom's digital government delivery unit – enjoying

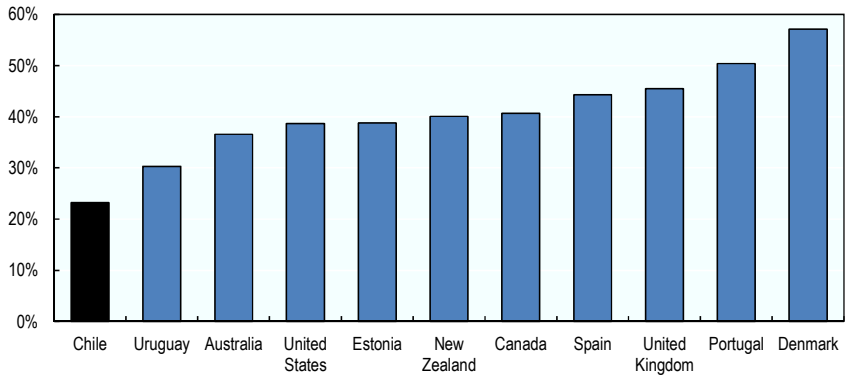
the largest relative budget at 0.01% of public expenditure. Executive agencies show, on average, larger relative budgets (0.08% of public expenditure on average), followed by countries where the lead for digital government falls under the responsibility of a political authority (0.04% of public expenditure). However, as it can be appreciated in Figure 1.12, this difference is also very much linked to the scope of responsibilities. For instance, Uruguay, which has a more centralised operative model, enjoys one of the largest relative budgets. Yet, when the scope of responsibilities is taken into consideration, it becomes evident that its budget size is relatively low. Indeed, the mandate of the AGESIC goes beyond ICT policy and includes the provision of shared services, managing the open government agenda, a centralised review of projects and a strong Project Management Office structure, a fund for digital government initiatives, a social-digital innovation lab, monitoring the implementation of the information society agenda, among others.

Due to institutional design and typology of funding sources, the case of Estonia should be seen as an anomaly that is hard to compare to the rest due to its specificities. While the Undersecretary of Communications and State Information Systems at the Ministry of Economic Affairs and Communications acts as the government CIO in terms of policy making, the Information System Authority (RIA) works as an executive authority reporting to the same ministry, through the government CIO. The RIA is responsible for the implementation of centralised digital government activities and investments. The budget of the government CIO for 2014 represented 0.008% of public expenditure, while the RIA spent 0.11% for the same year. However, the funding for digital government investments in Estonia is almost entirely dependent on EU structural funds. For the period 2007-13, EU structural funds to Estonia totalled EUR 62.6 million, equivalent to 0.83% of Estonian public expenditure for 2014. Such levels of investments are tied to specific projects or activities, and depend on EU policy, not solely on government efforts.

The budget of Chile's Modernisation and Digital Government Unit as a share of the country's total public expenditure is six times less than the average for the countries of reference. This context is aggravated by a level public expenditure that is substantially lower than that in the referenced countries (measured as a percent of GDP), limiting the pool of resources available (Figure 1.11). This situation further constrains the public sector's capacity to fund highly strategic digital government initiatives or put in place incentives that can yield demand from public institutions to digitise their activities (e.g. dedicated funds to support high-impact digital government initiatives).

The lack of adequate levels of funding can critically endanger the unit's capacity to steer change and drive the digital transformation. The unit's budget should be in tune with its mandate and responsibilities and the expected results (Figure 1.12). Governments must recognise that digitalisation is not an option but a necessity that should not be unnecessarily delayed if they want to avoid missing out on the opportunities of the digital age. However, it is important that accountability mechanisms are in place to ensure the performance of the digital government unit or structure and the efficient use of resources.

Figure 1.11. **Public expenditure as percent of GDP, 2013**



Source: OECD National Accounts.

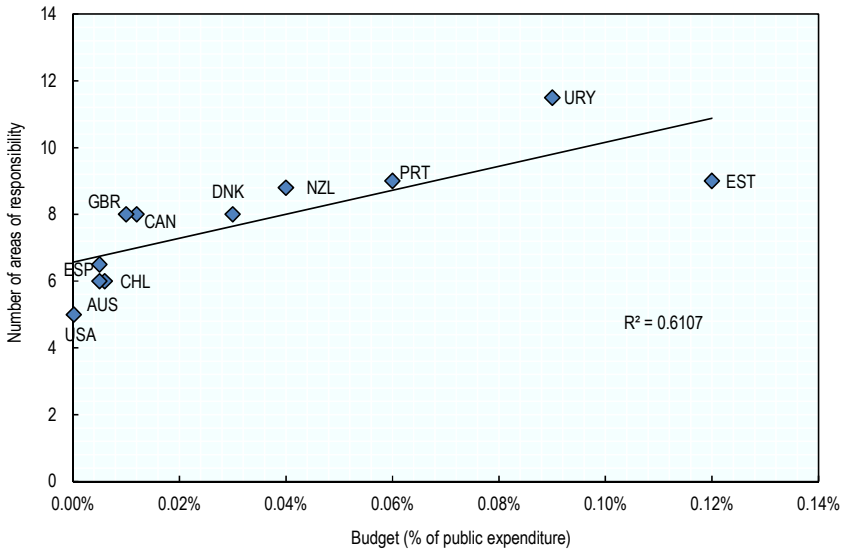
Mechanisms and tools for monitoring and assessing impact

Governments require mechanisms and tools for monitoring and assessing impact. These mechanisms can be very heterogeneous. In all of the selected countries, the co-ordinating unit or function is in charge of overseeing the implementation of the strategy. To do so, these units use a wide range of indicators to measure progress towards a full-fledged digital transformation, including fully functional end-to-end digital services. Moreover, these structures include follow up mechanisms on a continuous basis. For instance, as indicated in Box 1.1, Uruguay uses its area of "bodies and processes" to follow up on the implementation of key projects while Portugal uses its Project Management Office structure to be continuously informed of developments in the implementation of digital government projects.

Other countries use budget thresholds and the strategic value of projects to structure their monitoring and assessment systems. In Denmark, for instance, in addition to having a mandatory ICT project management model

for all ICT projects, ICT projects over a pre-determined budget threshold must be submitted to the Danish ICT Project Council for a risk assessment. High-risk projects are closely monitored by the council and will be forced to budget with an additional risk reserve, centrally managed by the Ministry of Finance. All risk-assessed IT projects have to submit biannual progress reports to the council on expectations regarding schedule, project economy and realisation of benefits. If the project exceeds DKK 60 million, the project must be submitted to the Finance Committee of the Danish parliament for approval.

Figure 1.12. **Budget size compared to number of areas of responsibility**



Notes: The areas of responsibility considered are: digital service delivery, setting standards for digital government, provision of shared services, ICT procurement, review of ICT projects, public sector innovation, co-ordination of open government initiatives, open government data programme, data privacy and/or security, policies for data management and exchange, administrative simplification, and information society.

If a country is only responsible for digital innovation but not public sector innovation as a whole it is considered as half a point (0.5) instead of a full area of work (1.0). Similarly, if the entity is only responsible for security and not privacy, or vice versa, it is considered as half a point (0.5). In the case of administrative simplification, the Government Chief Information Officer of New Zealand is one of three chief executives co-ordinating and leading the agenda. 0.3 points were granted on this area.

Source: Authors' own calculations based on digital government units' and bodies' budget data and predetermined areas of responsibility.

The Agency for Digitisation has also developed standardised business case models for ICT projects helping public institutions present, justify and set objectives for their ICT investments that can then be monitored and assessed (Principles 9 and 10 of the OECD Recommendation). The use of such business cases is part of the governance mechanisms for ICT projects and determines what is the value or benefit being pursued with the investment based on two scenarios, one with implementation and the second without it. This methodology allows monitoring the realisation of expected benefits and achievement of pre-established objectives. Based on the objectives established by the business case, the ICT project management model helps follow and assess the implementation, identify shortcomings and make quick adjustments. Thanks to the different reporting stages in the management process, these tools are an important source of comparative data, allowing the Agency for Digitisation to spot drivers of success and failures of government ICT projects, thus continuously improving the public sector's capacity to manage projects that are increasingly complex.

The use of business case methodologies, or similar value propositions, in the governance of ICT projects has been identified in other OECD countries, such as Canada, New Zealand and Sweden. These experiences confirm the benefits of such tools in promoting a performance-based culture in ICT project management and supporting the realisation of efficiencies of ICT projects.

Notes

1. In this case, "Chief Digital Officer" makes reference to the Administrator of the US Digital Service, responsible for the digital transformation of strategic services or government operations. The United States has a position titled "Chief Digital Officer" in the White House's Communications Offices exclusively responsible for digital engagement and communications.
2. Specifically, this refers to the Digital Transformation Office.
3. This is the case for Canada, Denmark, Estonia, New Zealand, the United Kingdom and Uruguay.

4. The AGESIC, in Uruguay, leads a social digital innovation lab. However, the broader innovation agenda falls under the responsibility of the Agencia Nacional de Investigación e Innovación (ANII).

5. Australia, Canada and the United States.

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Chapter 2.

Aligning Chile's digital government framework with national ambitions and objectives

This chapter provides an in-depth look at the institutional context and governance framework of digital government in Chile, mapping the existing roles and responsibilities, the existing policy levers, co-ordination mechanisms and legal framework. Based on this analysis and drawing on the conclusions of the benchmarking exercise developed in Chapter 1, it provides specific policy recommendations to strengthen the government of Chile's ability to steer the digital transformation of the public sector through reinforced governance of digital government. The chapter suggests two alternative options for a reinforced digital government institutional set-up to achieve more sustainable results in the long term. The chapter lays out the potential strengths and weaknesses of each scenario and outlines an implementation roadmap for these recommendations.

Strengthening leadership and co-ordination for improved policy implementation

The fast diffusion and adoption of new technologies (e.g. cloud computing, social media, mobile technology) and the new trends they enable (e.g. open data and big data) are changing expectations on governments' ability and modalities to deliver public value. Governments can no longer afford to separate efficiency from societal policy objectives in the governing and managing of digital technologies to support policies' design, implementation and evaluation. The economic and financial crisis that hit the world in recent years has shown that improved quality of service delivery and access to it, as well as internal public sector efficiency, go hand-in-hand with economic growth, societal equality and good governance objectives, such as greater transparency, integrity and citizen engagement. This applies also to the Chilean context, which is characterised by increased public spending and falling incomes, which create an urgent need to raise the public sector's productivity. Today, Chile has a -1.9% central government net debt in comparison with -16.5% in 2008.[1]

Nevertheless, this new digital context and the multiplication of technological options raise societal expectations, challenges and risks for which governments must prepare. The OECD *Recommendation of the Council on Digital Government Strategies* adopted in July 2014 – meant to help governments adopt more strategic approaches for a use of technology that spurs more open, participatory and innovative governments and enables more effective and efficient public sector reforms – underlines the need for governments to re-examine their governance framework, institutional settings and strategies to adapt to this changing reality. Failure to do so could mean a less efficient use of public resources, an accelerated loss of public trust in government and a perception that government is out of touch with societal needs and not capable of leveraging technological trends to promote policies and implement actions that maximise social and economic welfare. This key message was at the core of the conclusion of the OECD Public Governance Ministerial Meeting held on 28 October 2015 in Helsinki (Finland) on "Public Governance for Inclusive Growth".

In the new digital context the main challenge is not to introduce or use digital technologies into the public sector to improve its operations (i.e. e-government), but to integrate their use into public sector reform and modernisation efforts (i.e. digital government). This shift of focus on using technology to shape public governance outcomes, and not simply to spur efficiency of government processes, requires coherent and strategic planning and implementation of policies for the use of digital technologies in all areas and at all levels of the administration. Digital government strategies need to

become firmly embedded in mainstream modernisation policies and service design so that the relevant stakeholders inside and outside government are included and take ownership of the final outcomes of major policy reforms.

This requires a new business model for the public sector with capacities, workflows, processes, operations, methodologies and governance frameworks adapted to the rapidly evolving dynamics and relations between the government and the stakeholders that are already enabled – and in many instances empowered – by the digital environment. To enact this evolution, governments need to re-organise the governance of digital government to shape actions around policy outcomes, user expectations and needs and the associated requirements, rather than around their own internal logic, which demands a high level of co-ordination and collaboration within and across levels of governments. This implies, in concrete terms, the need for institutional and governance arrangements enabling the government to demonstrate its capacity to use digital technologies to design and implement policies that increase the efficiency, effectiveness and quality of internal process and actions within the public sector, as well as of public service delivery. The governance framework needs to be flexible enough to allow for the adaptations required to keep up with the rapid pace of technological changes, while envisaging the participation of the users of public service and the incorporation of their inputs along the entire policy making cycle.

However, it is observed across OECD countries that in many instances, governments still remain organised around units somehow responsible for the use of technology, often several in different ministries, each with distinct responsibilities and processes, and with problems to integrate their ways of working. This is a major challenge for creating broad political commitment and ownership for integration of digital government into overall public sector reform strategies and for spurring the required capacity of intuitions to interoperate and share at various levels and from different perspectives. Governments need to ensure that their own capacities, norms, structures and risk management models are aligned with their strategic digital government vision, and vice versa.

The OECD *Recommendation of the Council on Digital Government Strategies* underlines how successful digital government policies – especially when linked to broader reforms – require political commitment, legal support, resources (e.g. human capital, budget, commonly used tools such as business case methodologies) and leadership. This requires a functional and effective governance system with the potential to improve the efficiency and effectiveness of digital government policy design and implementation by strengthening the capacity of the state to develop and guide a vision, supporting more robust strategic planning linked to the budget and improving the co-ordination of the main actors across of the

policy process within and across levels of government. This is why the adequate governance framework entails a clearly identifiable authority/entity/ institution with assigned formal responsibilities, a sufficiently high level to exert political and policy influence, regulatory powers and resources. For this to happen, it is crucial to provide the institution formally responsible for digital government co-ordination with the power, tools and mechanisms to align overall strategic choices on investments in digital technologies with technological deployment in various policy areas. Stronger and more effective governance can also support more efficient and results-oriented implementation of digital government projects.

The relevant principles included in the aforementioned Recommendation have been applied to review the governance framework in a number of selected countries (see Chapter 1). Based on the comparative analysis of alternative governance structures and arrangements – including also their strengths, weaknesses and requirements for success – this chapter proposes two alternative options for a new digital governance framework for Chile. The new digital government governance model for Chile should enable the strategic planning and decision making relevant to ICT investments and use in the public sector, ensuring their quality and the cost-effectiveness of decisions in addition to their coherence with overall strategic objectives. This would secure also the efficient co-ordination of the implementation, the monitoring of advancements and the adoption of corrective measures, or priorities adaptation, in case of necessity. The new model should also define clear roles and responsibilities in relation to the execution of the various projects and initiatives.

The rationale used to propose the renewed governance framework is to help the government of Chile secure adequate and continuous leadership in the foresight, planning, management and co-ordination relevant to the design and implementation of digital government strategic decisions and initiatives. This should lead to stronger strategic use of ICTs in support of the design and implementation of broader policies, and to a co-ordinated execution of individual initiatives in line with the overall digital government strategic goals. As a result of better co-ordination and improved quality and cost-effectiveness of investments, higher efficiency and optimisation in the use of available resources could be expected, e.g. through a co-ordinated, and more effective, ICT procurement across the administration to eliminate redundant expenditures and duplicated efforts, interoperability of systems and data, clear prioritisation of ICT projects/investments.

The establishment of the new governance model will require a mix of organisational/institutional, legal and technical measures that will have to be taken in a gradual manner and based on a phased approach.

Analysis of Chile's current situation

Overall strategic policy directions and standards: Integrating digital government in public sector reforms

The development and adoption of a digital government strategy should engage all key actors and count on wide political support. Effective strategies should help set strategic priorities (which are normally long-term policy outcomes), guide planning of actions and establish clear accountability mechanisms so that they become instruments for strategic planning, for aligning decisions on projects across the public sector with the government's overarching priorities, for collaboration across institutions, for supporting budgetary negotiations/ensuring funding, and for monitoring progress on implementation and assessing results.

In order to become such strategic instruments they should:

- set overall priorities and associated measures
- list concrete goals and actions (with a roadmap inclusive of intermediate milestones and final targets deliverables/objectives)
- include budget estimates associated with the various actions
- identify responsible actors for the various measures
- include monitoring tools (e.g. targets, quantitative goals, indicators).

Finally, in order to ensure ownership and relevance, the strategy should be developed through an inclusive process involving the different actors across the administration (i.e. ministries, agencies, public bodies) that will be involved somehow and at some point in its implementation, as well as representatives from the civil society and the private sector – who should benefit as a result of its implementation. The implementation of any digital government strategy aimed to increase opportunities for social and economic welfare across the society implies being able to count on the availability of adequately skilled civil servants. These should be equipped not only with purely technical skills, but also with the capacity to use technology – and technology enabled approaches – to increase accessibility and availability of opportunities to all policy areas and to the entire society (e.g. civil servants capable of conducting data analytics for stronger public sector intelligence which can support better policy making and implementation). Similarly, the political leadership across the government should show the required level of digital awareness and support recognising the existence of new opportunities for all policy areas considering the cross-cutting nature of many digital government projects. This is why it is

important to align public sector and recruitment and training strategies with the design of the digital government strategy to raise awareness on all of the skills needed across the public sector to avoid creating digital divides within the administration and bring the non-purely IT skills into the debate.

The new "Digital Agenda" for Chile (Agenda Digital 2020) was launched on 27 November 2015. This agenda follows the previous one adopted in 2013. The achievement of some of the set objectives require medium- and long-term timeframes, which makes it extremely relevant to set up a governance framework that secures the stability necessary to ensure continuity of implementation across administrations.

The Digital Agenda for Chile[2] covers all the relevant overarching topics which appear as high priorities on the information society agendas of many OECD countries, including increasing the uptake of online services, supporting the development of sector policies through the use of ICTs, strengthening a more open and transparent state, and promoting public sector innovation. The agenda sets out a roadmap to foster the digital development of the country. It defines medium-term objectives, lines of action and concrete measures which are being developed by various ministries and public institutions to achieve their specific goals. The government considers the agenda as a tool to disseminate, give coherence, and facilitate monitoring and measuring progress of committed action. The process of adoption of the national Digital Agenda envisages the responsibility for its planning under the Ministry of Economy and for budgeting related issues under the Ministry of Finance. This process may turn out quite cumbersome.

The agenda is articulated around 60 priorities, and includes a chapter on digital government with 4 main action lines with a total of 18 measures. This is quite comprehensive although some of the action lines seem to be missing more concrete and measurable actions and the equivalent of a "roadmap" setting intermediate goals (i.e. short- and medium-term objectives). Similarly, the digital governance chapter does not have a strong accountability system and does not clarify a full map of the responsible authorities. The inclusion of the strategic objectives for digital government in a specific chapter within the national Digital Agenda is in line with the approach set by the OECD *Recommendation of the Council on Digital Government Strategies* (2014) – i.e. see Principle 6 on the coherent use of digital technology across policy areas – and ensures co-ordination between the broad agenda and the strategic digital government objectives. Nonetheless, having a digital government strategy easily identifiable and usable as a stand-alone policy is helpful to support its instrumental value as a mechanism for guiding cost-effective decisions on investments and co-ordinated implementation. This could complement the design of an

Action Plan for Digital Government, which the Ministry General Secretariat of the Presidency (Ministerio Secretaría General de la Presidencia, SEGPRES) has the responsibility to define.

A self-standing digital government strategy can support the entity in charge of co-ordinating digital government implementation in exercising more effectively its role for strategic planning, foresight, *ex ante* and *ex post* evaluation based on evidence. This can generate better results linked to the strategy and the capacity to follow up on their achievement in line with the overall goals.

A digital strategy can in this sense be useful to obtain endorsement and commitment across the administration and the political leadership, to help define key performance indicators to monitor implementation and ensure accountability, and to deliver the expected results. As highlighted in the first section of this chapter, the new context for digital government implies co-ordination rather than the traditional approach of centralisation vs. decentralisation of decisions and actions. This is why a solid governance framework assigning clear co-ordinating powers and responsibilities is essential to follow up on the effective implementation of a strategy – e.g. through the implementation of the Action Plan.

Last but not least, a dedicated strategy can help link and align digital government with relevant policy areas such as public sector innovation, administrative simplification and open government, to achieve better synergies, as well as with overall skills strategies for the public sector. At the moment, the Laboratorio de Gobierno (part of the Economic Development Agency at the Ministry of Economy) is responsible for improving and accelerating the public sector modernisation process through innovation. As for administrative simplification, there is no single administrative simplification strategy in Chile for the central administration. The SEGPRES, through the State Modernisation and Digital Government Unit, responsible for digital government, has taken the lead in introducing a number of public digitalisation initiatives meant to contribute to simplifying the administration, reducing the burdens for citizens and businesses, and improving the delivery of services. The SEGPRES is part of the Strategic Board of the Laboratorio in charge of defining the strategic orientation of the Laboratorio. On the contrary, there is no single administrative simplification strategy in Chile for the central administration. The SEGPRES, through the State Modernisation and Digital Government Unit, responsible for digital government, has taken the lead in introducing a number of public digitalisation initiatives meant to also contribute to simplifying the administration, reducing the burdens for citizens and businesses, and improving the delivery of services.

The institutional set-up for digital government implementation

The governance framework needs to provide a stable institutional set-up suitable to ensure continuity of leadership in support of the implementation of the digital government strategy over a period of time which may cut across several administrations (governments/presidencies). This is particularly relevant in contexts like Chile where the presidential term is four years and is non-renewable. These changes could *a piori* be achieved through the creation of a new institution, or by strengthening the roles within the existing institutional mechanism.

Taking some action in this regard is quite important particularly in consideration of the fact that in Chile the presidential terms last four years without possibility for re-election. There is therefore a real need to avoid politicisation of digital government initiatives, and to protect the continuity in the implementation of digital government projects associated with key digital government objectives. The life cycle of some digital government projects often covers a period of time that goes beyond the duration of a presidential term, and some projects (particularly those requiring a cultural change within the administration – as in the case of open data) bear their fruits over a period of several years. It is therefore important to avoid the typical cost-ineffective situation in which a project is discontinued for political reasons.

From an organisational/institutional perspective, a stable governance framework foresees an entity (e.g. ministry, directorate, agency) with a clear institutional location and with policy levers at its disposal (such as its own budget, control power over the ICT funding mechanisms). The governance framework normally also requires someone with a clear mandate that gives him/her the authority and the responsibility to lead and co-ordinate where necessary the digital government related decisions, e.g. the equivalent of the Chief Information Officer's role in many Anglo-Saxon administrations. The institutionalisation of such a role would give stability to the position.

At the moment the State Modernisation and Digital Government Unit part of the Ministry General Secretariat of the Presidency is responsible for taking initiatives relevant to spur ICT use within the public sector with the purpose of improving relations between the state and its citizenry and overall efficiency (see Presidential Instruction No. 001, of 15 March 2012). Additionally, according to the Presidential Instruction No. 005/2001 of 11 May 2001 providing instructions on the development of e-government, the SEGPRES is responsible for the co-ordination and follow up of the implementation of the instructions affecting the development of digital government set in the above-mentioned presidential instruction, and all future ones.

Even though at the moment the State Modernization and Digital Government Unit is acting as the main actor responsible for setting priorities for digital government and co-ordinating implementation of key relevant actions, it does not have a solid legal basis, i.e. no law or decree sets its role, mandate and responsibilities. The unit is not incorporated as part of the Ministry General Secretariat of the Presidency foreseen in the organic law establishing the Ministry General Secretariat of the Presidency (for more details on the legal and regulatory framework of digital government, see Box A.1 in Annex A). As a result, the law does not identify the functions and powers of the unit, nor assign objectives to it. This unit is only recognised as a programme in the budget corresponding to a line of the budget allocated to the SEGPRES through the annual budget law. As a result, at the moment the head of the unit does not appear to be sufficiently influential to lead the development of digital government policies across the administration and to promote the necessary normative changes.

A policy domain like digital government presents the peculiarity of requiring cross-cutting implementation across the administration to deliver the expected value. This demands a high level of co-ordination supported by the right kind of leadership to steward the actions of the various actors in line with the overall objectives. To this end, the head of digital government needs to be at a high hierarchical level, or to have a stable position within the civil service – hence the duration of this position should not be subject to political changes. Additionally, it should have a solid legal basis to ensure its strategic relevance, powers and capacities. Such legal ground is what ensures stability and relevance in playing a co-ordinating role across ministries, and secures the necessary resources to guarantee technical, financial and operational capabilities, as well as the availability of strong budgetary mechanisms and clear regulatory powers.

According to Decree 14 of 27/02/2014 (of the Minister of Economy, Development and Reconstruction), the SEGPRES has the power to establish technical regulations/standards; this includes proposing to the President the need for new regulations to foster interoperability, standardise service delivery to citizens and ensure security in the use of e-documents. It is important to highlight how Principle 4 of the 2014 OECD *Recommendation of the Council on Digital Government Strategies* indicating that governments should "Reflect a risk management approach to addressing digital security and privacy issues, and include the adoption of effective and appropriate security measures", and the 2015 OECD *Recommendation of the Council on Digital Security Risk Management*, stress the relevance of taking a strategic approach to privacy and security in line with the changing context brought about by the digital economy, i.e. opening up of data, "big data", increasing use of digital tools as a reality of public sector operations and

interactions with the society, the "Internet of Things". This implies, for example, that no institution will be capable of protecting the public sector 100% from risks related to privacy and security bridges which may emerge from the use of technology. This would happen only if the public sector decided not to use technology, which is unrealistic and would impede or hamper many government operations, including service delivery.

Therefore, the key questions governments should focus on is not "what IT system best helps me protect the institutions from privacy and security risks related to the use of ICTs in the public sector", but "where do I strike the balance between a minimum level of risk I am ready to take in order to keep using technology as needed to carry out my institutional mandate". This implies adopting a strategy for "risk management" – including personal data protection for example – designed by the sector-relevant policy makers (familiar with their business operations) and the IT specialists within the administration, and supported by the political leaders. Leaders must take responsibility for the management of privacy risk (i.e. high-level government officials, CEOs, management boards, call for developing national privacy strategies) and decisions on risk management must be integral to an organisation's business decision-making and risk management processes.

This implies:

- looking beyond legal compliance and considering the broader economic and social benefits and risks
- shifting responsibility from legal departments to leaders in charge of achieving economic and social objectives (they own the risk and face the consequences)
- fostering the co-operation of all stakeholders instead of operating in silos, which is a responsibility normally under the mandate of the authority/entity governing digital government.

Decree No. 14/2014 also specifies that whenever the implementation of the new technical norms requires additional funding or co-ordination of various actors, the decree approving the new norm will have to be signed by the Minister of Finance and the Minister of SEGPRES.

Decree No. 1 of 03/02/2016[3] establishes the presidential advisory commission, called the Interministerial Committee for Digital Development (Comité de Ministros de Desarrollo Digital), intended to advise the President in the formulation of the national policy for digital development and in the determination of public policies, plans, programmes and specific actions to generate economic, political and social value, through the use of

information and communication technologies. The committee is composed of the Minister of SEGPRES, who chairs it, as well as by the ministers of: Interior; Finance; Economy, Development and Tourism; Education; Health; and Transport and Telecommunications. The head of the committee can invite other ministries to attend meetings whenever an item on the agenda is relevant to their competencies. The committee meets once every six months, even though extraordinary sessions can be summoned as needed. Decisions are taken by majority and in case of even votes, a decisive vote will be cast by the President of the committee, i.e. the Minister of SEGPRES. In the absence of the head of the committee, he/she will be replaced by the Minister of Economy, Development and Tourism. When the latter is also absent, the committee is headed by the Minister of Transport and Telecommunications.

The committee will count on a permanent Executive Secretariat that will meet monthly, or more frequently as necessary. It is composed of the Undersecretaries of Finance, SEGPRES (the chair), Economy and Small Enterprises, and Telecommunications. The SEGPRES is expected to provide the human, technical and administrative resources required for the functioning of the committee and of the Executive Secretariat.

The Ministries of SEGPRES, of Economy, Development and Tourism, and of Transport and Telecommunications will be responsible for developing action plans, which will be reported to the Executive Secretary and the committee of ministers for their comments, later to be approved by the respective ministry. These plans will make up the Digital Agenda. It will be the responsibility of the Ministry of SEGRPRES to develop and adopt the "Action Plan for the Development of Digital Government", the responsibility of the Ministry of Economy to develop and adopt the "Action Plan for Competitiveness, Innovation and Venture", while the Ministry for Transport and Telecommunications will be responsible for the elaboration and adoption of the "Action Plan of Digital Development for Connectivity, Social Development and Digital Inclusion". The individual plans will indicate the time frame and the responsible actors for the execution of the projects, and the verification methods and initiatives committed by the actors – either public or private – that will contribute to achieving the objectives set in the various areas of work covered by the projects.

The changes introduced by Decree 02/2016 clarify the role played by some key ministries in the development of the national policy and agenda for digital development in Chile. Additionally, it assigns a clear role to the SEGPRES in relation to the design and implementation of the "Action Plan for the Development of Digital Government". Yet, it is very important to underline that the effective and efficient design, adoption and implementation of an action plan for digital government – implemented

through a number of projects and initiatives potentially under the responsibility of different actors, public or private – requires a clear and solid institutional framework with a specific and explicit mandate, powers and obligations recognising its responsibility to formally take over the advances in digital government, formally and legally set up with these clear responsibilities. This implies being capable to define if necessary a specific digital government strategy – emanating from the national Digital Agenda – as well as having the tools and powers to co-ordinate the different actors and initiatives coherently, and in line with, the overall objectives. At the moment, Chile does not have a similar body and/or institution. The State Modernization and Digital Government Unit in the SEGPRES, which acts as the main co-ordinating agent for digital government, does not formally exist in the organic law of the SEGPRES, being only a budget line of SEGPRES stated in the budget law. It has no formal role, functions, powers or obligations for digital government, except as formally required by the Budget Directorate of the Ministry of Finance's running programme budget. This limits the long-term sustainability of decisions and actions, and the capacity to co-ordinate the different actors to ensure a strategic use of ICTs and to maximise the use of public resources while avoiding duplications in the actions of government agencies as well as in the design and development of relevant public policies.

Guiding and monitoring implementation: Delivering impact

Funding mechanisms for ICT projects

Effective and efficient management of the ICT funding mechanisms are essential to support prioritisation, link the strategic objectives of digital government with the yearly budget negotiations and align decisions on ICT expenditures with cross-cutting policy goals (e.g. public sector innovation). At the moment, in Chile each public institution independently submits a budget request, which is presented by the head of service of the Budget Directorate within the Ministry of Finance, which accepts, cuts or rejects the request. From there, a negotiation process is generated for the final proposal, which must be defended by the institution in front of the National Congress, who can also make adjustments to the amounts allocated. The outcome of this process results in the annual budgetary law, the Budget Act. The discussion on the budget approval for ICT-related initiatives is part of the institutional budget formulation, although at the moment there is no integrated category labelled as ICT projects/initiatives and ICT expenditures are listed under separate items, e.g. services, consultants, assets). Some of the reviewed OECD countries have established specific funds to support digital government projects. For example, Uruguay has some competitive

funding (*fondos concursables*) and in Portugal the AMA manages the administrative-modernisation financing programme SAMA (50% EU funds and 50% national budget).

A very innovative example of a fund aimed to spur the digital transformation of the public sector is the US "Information Technology Modernization Fund" (ITMF). The United States CIO's team has put forward a proposal to insert into the President's budget the ITMF that would be initially infused with USD 3.1 billion. If enacted, it would be a revolving fund and the centre of government (CIO office) would be able to retire or modernise at-risk antiquated IT systems in agencies. In cases where many agencies have systems with similar business functions, the systems in agencies would be shut down and their functions migrated to new, centralised cloud-based common infrastructure and platforms. The US government believes that this model could be a fundamental change in how it buys and builds IT systems. All money taken out of the ITMF would need to be repaid.

Procuring and delivering ICT goods and services

Co-ordinating ICT procurement across the administration can help rationalise expenditures to eliminate redundancies and unnecessary purchases, to ensure interoperability (of systems and data), and to clearly prioritise ICT projects.

Currently in Chile, as per Presidential Instruction No. 005 of 11 May 2001, that provides instructions on the development of e-government, each service can autonomously select and use software that better respond to their needs. They are also expected to promote the aggregation of the demand of IT services and goods to obtain better prices and purchase conditions to manage more efficiently the financial resources available. There are also catalogues for IT infrastructure and services in the form of "framework agreements", or *ex ante* price tender process, which aim to facilitate IT procurement, though given the evolving nature of digital technologies they do not always respond to the needs of the agencies. The heads of services are also expected, according to Presidential Instruction No. 005/2001, to adopt open source standards enabling integration and interoperability of different IT systems and platforms.

Within the framework agreements (for example for printers, for the development and maintenance of software, and for data centres and related services that entered into force in 2014) there is a catalogue of IT infrastructures aimed to facilitate IT procurement. Framework agreements can help strike better financial deals with providers, but having a common ICT procurement strategy, especially when complemented by a shared

approach or mechanisms for ICT-related service delivery within the administration, can help go beyond effective and efficient expenditures to support strategic investments and procurement. Having a common ICT procurement strategy for the central administration would enable adapting decisions on IT procurement in line with the rapidly changing and evolving technology environment. This would improve public sector agility.

Monitoring implementation

Adopting a (mandatory) business case methodology (value proposition approach) for ICT projects is important to support strategic planning, and to strengthen the capacities to define return on investment and monitor implementation. The institution responsible for co-ordinating digital government should also capture the information on previous successes and failures on projects' implementation to strengthen institutional knowledge. This can create knowledge on "what works" that can be shared across the administration to best support effective implementation, particularly in the case of projects that require institutional interoperability given their cross-cutting nature.

According to Presidential Instruction No. 005/2001, each head of service should assess the impact that new ICT projects under their responsibility will have on their organisation and personnel, spotting potential effects and challenges. There could be a way to consistently document the implementation of initiatives to provide structured information, enabling projects to be compared and success factors identified. This would be particularly helpful to support the implementation of projects requiring interoperable systems, integration and co-ordination of different actors across different public entities.

An interesting case of this type of project is the Sicex 1, an initiative financed by the Inter-American Development Bank that aims to integrate Chile's foreign trade processes. The goal is to establish a single window for foreign trade, thus facilitating service delivery – G2G or G2B – in Chile. This is a very good example of how changes within the administration brought about by the introduction of a new system have with time been accepted by the various public actors involved, who came to appreciate the impact on their core businesses. Managing effectively the deployment of the new system implied securing specific conditions at three levels:

1. Political commitment (there had been several previous efforts, but they did not led to results), which was solved by the creation of a commission composed by several undersecretaries (*sub-secretarios* also denominated *jefes superiors de servicios* in the Chilean administration, e.g. customs, archives and museums).

2. Institutional commitment (solved with the establishment of a programme under the Ministry of Finance to co-ordinate the project).
3. Financial commitment: the different services presented technological asymmetry so the initiative was assigned a specific budget to provide financial resources to the individual institutions as necessary for them to upgrade the technology or hire consultants to support projects' implementation.

The case of Sicex is quite exemplary with regard to the successful co-ordination of the different actors in relation to the running of a jointly used system.

It is critical to assign and recognise the role of the entity responsible for co-ordinating digital government in capturing and managing knowledge on good practices, such as Sicex, to identify the elements of success and replicate them in the co-ordination of similar inter-institutional projects – likely to increase in the era of digital government. This can support more efficient and effective implementation of projects across policy areas, and create the conditions for producing further synergies and scaling up the adoption of new systems.

A proposal for alternative governance models for digital government in Chile

Based on the above analysis, the need was identified to enact the institutional changes required to establish an institutional/organisational framework adequate to support a strategic use of ICTs that promotes a digital transformation of the Chilean public administration as a whole through effective policy design and implementation. The actions to be taken shall identify clear responsibilities to lead digital government implementation and strengthen the powers of the institution responsible for co-ordinating the strategic use of technology in the central administration. This is a role currently exercised by the Unit for State Modernization and Digital Government at the SEGPRES, but without a legal basis officially assigning this role and in a framework in which a number of responsibilities are also held by the Ministry of Finance; the Ministry of Economy, Development and Tourism; and the Ministry of Transport and Telecommunications.

The first section of this chapter underlined how modern administrations require embedding the use of digital technologies in different policy areas in a way that is aligned with the overall strategic directions of the government. If on one hand this demands an increasing number of decentralised decisions

on execution and implementation to support innovative uses of technology across the administration, the role of the co-ordinating entity is more necessary than ever to ensure strategic alignment and economies of scale. In fact, as digital government is no longer an optional policy tool but a necessary element to deliver policy outcomes, various actors should be held accountable for its implementation; their co-ordination therefore becomes essential. It is thus of utmost importance that the entity in charge of digital government be equipped with the necessary powers and leverages to be able to facilitate effective co-ordination by leading, supervising and deciding as necessary, and to work closely with relevant entities, such as the financial authorities responsible for budgeting (e.g. Dirección de Presupuesto/the Budget Directorate) or public procurement (e.g. Dirección de Compras y Contratación Pública Chilecompra/public Procurement and Contract Directorate). The right level of powers and leadership can, for example, help ensure that ICT funds are used coherently with the established priorities, can support the adoption of a common business case model approach across the administration – as a framework to orient agencies' proposals on digital government projects – and can ensure that the authority responsible for digital government contributes to setting the strategic directions and policies for government-wide services.

The changes to be implemented in Chile would require setting up a new high-level body/entity with the necessary powers, competencies, independence, flexibility and stability to undertake the tasks required to make the public sector digitalisation (or what some OECD governments call the digital transformation) a reality, i.e. moving from e-government to digital government to leverage the use of digital technologies to improve policy making and better respond to the needs of modern and dynamic public administrations and societies.

To frame it around the OECD *Recommendation of the Council on Digital Government Strategies*, the new governance framework would strengthen effective policy implementation by enhancing the government's capacities to:

- develop clear business cases to sustain the funding and focused implementation of digital technologies projects
- reinforce institutional capacities to manage and monitor projects' implementation
- procure digital technologies based on assessment of existing assets
- ensure that general and sector-specific legal and regulatory frameworks allow digital opportunities to be seized.

Shifting from e-government to digital government (see the OECD Recommendation) implies an alignment of sectorial decisions, actions and initiatives, with the overall national strategy/agenda to achieve common goals and government priorities, and to integrate the use of technologies through all stages of the policy cycle, to create synergies and avoid duplications. This implies long-term strategic planning and co-ordination mechanisms among key digital government actors responsible for key digital government projects across the administration, identification and planning of change management, adoption and compliance with common standards and guidelines (e.g. open data, digital signature, cloud computing, technical standards for interoperability, cybersecurity, social media, online procedures, metadata, e-id), streamlining the delivery or procurement of commonly used IT services and supervision/monitoring of IT expenditures. Finally, modern societies entail processes and mechanisms for public consultation in key strategic moments of the digital government policy cycle.

The new entity would have to provide a whole-of-government approach and cover responsibilities inherent to a digital transformation of the public sector. To be effective and act to deliver the necessary leadership as described in this report it would require:

- strategic relevance and sufficient political power
- technical capabilities
- operational capabilities.

This effective leadership can be secured through:

- the existence of an inter-ministerial advisory "committee"
- the establishment of a strong (results-oriented) budgeting mechanism with the Budget Directorate in the Ministry of Finance
- recruitment done through the professional recruitment process
- the assignment of sufficient regulatory powers.

Option 1

- Establishment of an Agency for Public Sector Digitalisation. It would have a holistic (whole-of-government) approach and a global view of the entire administration to go beyond digital government and support strategic use of ICTs across the whole administration to promote a real change in internal operations, in the relations between the society and

the public sector, and in the design and implementation of policies and service delivery to both citizens and businesses.

- The new set-up should foresee a committee (see, for example, countries like Denmark and Portugal with a steering committee, inter-ministerial digital government network, etc.) inclusive of political leadership, representatives of relevant policy areas (e.g. other ministries, public entities), subnational governments, and the participation of private sector and technical experts. The number of participants should be kept restricted to preserve the functionality of this governing body, and selection should be based on the relevance of their experience and following criteria that preserve any potential conflict of interest (in the case of private sector representatives). This would function as a co-ordination mechanism with key actors to support better strategic alignment and stronger implementation, e.g. in the delivery of integrated and interoperable digital services.
- The head should be of high level – i.e. a rank below the minister. In the case of Chile this would mean that the person should belong to the first level of the Sistema de Alta Dirección Publica (Senior Executive Service System) and be selected based on meritocratic criteria through the SADP process, e.g. head of service.
- The agency should have a high level of independence, and in order to have a good base of political power and support, it should be close to the centre of government and report: 1) directly to the President; 2) to the Minister of SEGPRES; or 3) to the Ministers of SEGPRES and Finance. Three examples taken as a reference include: in Denmark the head of the agency reports to a single minister; in Portugal the AMA reports to the Secretary of State of Administrative Modernization and, in some areas, directly to the minister; and in Uruguay the director of the agency reports to the Board (*Consejo Directivo*) named by the President. The oversight of the ICT investments/financial aspect is ensured differently, for instance with specific agreements with the Ministry of Finance (when the agency does not report to such a minister) to ensure the existence of strong budgeting mechanisms linking expenditures to strategic policy objectives.
- The agency should hold both regulatory and executive powers.[4]
- The agency should have the power and staffing/personnel to design and implement directly projects with a strong "whole-of-government" component, such as *ChileAtiende* (see Table A.6 in Annex A). The agency should retain the power to monitor the implementation of some strategic projects – whose execution will remain the responsibility of

individual ministries – to ensure alignment with adopted standards and guidelines.

- The agency should have financial powers related to digital government. This can include for example the power to:
  - grant funding for some projects/initiatives out of dedicated funds (e.g. manage a specific ICT fund, or modernisation financing programmes and issue competitive "calls for tenders") that when newly established would need to be co-ordinated and aligned with exiting funding programmes, such as the one for innovation, the GIP
  - and/or authorise ICT expenditures over a certain threshold.

  The regulatory and financial powers, connected with the existence of a co-ordination mechanism/body (see above), can be used as a "policy tool" to ensure oversight of investments, their alignment with the overall objectives of the Digital Agenda, more efficient ICT expenditures and compliance with adopted policies, standards and guidelines. For example, the agency could use its "financial power" and prioritise authorisation of projects aligned with the Digital Agenda and its goals, or the "Action Plan for Digital Government", or to embrace and implement the guidelines/standards/models they have passed and want to see adopted ("push"). The agency should also have the power to draft "calls for proposals" (for projects to be financed under the "special fund/programme") based on the Digital Agenda's digital government priorities the government wants to promote, so the approval mechanism becomes an additional option to ensure their broad uptake.

  This can become a mechanism to prioritise strategically the ICT investments/projects and ensure compliance with technical standards or regulations issued by the agency (the "stick"). Representatives from ministries could also be asked to sit in the co-ordination body/committee and be engaged in the assessment of proposals/evaluation of funding when ICT project/expenses are submitted for approval by some actors belonging to that ministry, e.g. the representative of the Ministry of Health if a hospital asks to buy some IT equipment for a budget above the threshold requiring the agency's approval. This is a way to ensure the empowerment of sectorial CIOs from other ministries ("the carrot") even when the financial approval is based on a centralised model and to ensure that the newly funded project is not only in line with the overall digital

government agenda but that it is aligned also with the ministry's approach/sector plan, e.g. health strategy.

- The agency should develop a business case methodology and make its use mandatory across the central administration for all projects submitted for financing.
- The agency would have to be staffed with human resources with highly technical profiles as well as non-technical ones.
- The agency should be responsible for the design, planning and implementation of ICT consolidation, including for instance the development of a catalogue of horizontal services and the building blocks for the provision of common services to the central administration, as a whole, streamlining the development of infrastructure and domain-specific services and the promotion of reuse of infrastructure and sector applications, to help promote the standardisation of applications and equipment. In particular:
  - The agency should be responsible for defining a strategy for common ICT procurement across the administration as part of the comprehensive digital government strategy, thus integrating strategic ICT-related decisions into the broader policy development and regulatory reforms. The agency should collaborate with the entity currently responsible for public procurement for proposals related to the procurement policies for computer equipment, infrastructure, etc. and the definition of technical requisites/key requirements in public procurement (e.g.. this is expected to result in the consolidation of infrastructure, services, for example data processing centres, internal communication networks, voice and data communication, as well as procurement that can drive important economies of scale and enable improved management of systems and processes).
  - The agency should define a strategy for the delivery of shared IT services. The establishment of a shared-services context will require the adoption of the legal measures and their operationalisation through a strategy aimed to support the provision of shared services to the whole administration. The design of the strategy could also lead to the establishment of a shared-service centre under the agency that will be responsible for delivering some ICT services to the central administration, except for those cases in which the delivery of other services will remain delocalised (e.g. digital signature). This will help

identify opportunities for streamlining service delivery and thus increasing efficiencies thanks to central co-ordination and leadership in the implementation of the strategy, while maintaining a decentralised approach to the delivery of services. The strategy will be designed in a way to balance the need to focus on the high-level objectives of the state and the priorities of each ministry – each will develop its own action plan to implement the strategy. The goal is to make the strategy relevant to the individual areas and its implementation sustainable across the whole administration.

- The Agency should take strategic decisions on the deployment of common key enablers, service standards and interoperability principles, supporting the progression towards a more data-driven and integrated administration (e.g. promoting the adoption of common methods for electronic identification of service users).

- The agency's functions would include the development, co-ordination and promotion of the digital government strategy and plan of action ("chapter" included in the national Digital Agenda). This should take into account the required linkages between digital government and policies pertinent to administrative simplification and open government.
- The agency should be responsible for co-ordinating all actors in defining a risk management approach/strategy to address digital security and privacy issues, which includes the adoption of effective and appropriate security measures. Several countries and international organisations are creating the figure of the Chief Digital Security and Data Protection Officer/Advisor reporting to the head of the agency.
- The agency should advise public entities in the selection, deployment and use of the technology based solution, in monitoring project implementation and in identifying the best practices of reference given the specific needs of the entity, either within the Chilean administration, or internationally.
- The Agency should be responsible for ensuring co-ordination with relevant entities responsible for the definition and implementation of policies strictly entangled with digital government, such as the one covering public sector innovation.
- The agency should hold a leading advisory role in support of the Ministry of Foreign Affairs in relation to the adoption and implementation of international treaties, conventions, and agreements regarding digital government related issues.

- Considering the importance of digital technologies and data to support the overall transformation of the public sector, it would be advisable to establish under the agency the position of Chief Data Officer (e.g. responsible for data-driven public sector strategy and for open data), a Chief Digital Transformation Officer (e.g. responsible for rethinking digital service design and delivery inside and outside the public sector), and a Chief Technology Officer (e.g. responsible for overseeing current technology aligning technology-related decisions with the organization's goals), all reporting to the head of the agency (i.e. the CIO).
- The establishment of the agency would require the adoption of a specific law – that could be preceded by a decree – clarifying the mandate, responsibilities and powers of the agency.

  Examples of reference include Denmark, Portugal and Uruguay.

Option 2

- Establishment of a vice ministry for public sector digitalisation under the SEGPRES, headed by the equivalent of a CIO (level of a *sub-secretario*) reporting to the Minister of SEGPRES. Modify Presidential Instruction No. 001/2001 and build on Decree No. 01 of 2016 which already grants power to the SEGPRES to design the "Action Plan for the Development of Digital Government".
- Legal steps will have to be taken to clarify the mandate and responsibilities for the *sub-secretaría* ensuring that its head can count on the instruments and the structure necessary to achieve higher coherence and rationalisation of strategic ICT decisions across the central administration.
- The *sub-secretaria* should be responsible to develop and co-ordinate the promotion of the digital government strategy and plan of action ("chapter" included in the national Digital Agenda). This should take into account the required linkages between digital government and policies pertinent to administrative simplification and open government.
- The *sub-secretaría* should be responsible for the design, planning and implementation of ICT consolidation, including for instance the development of a catalogue of horizontal services and the building blocks for the provision of common services to the central administration, as a whole as well as for streamlining the development of infrastructure and domain-specific services. The *sub-secretaría* should take strategic decisions on the deployment of common key

enablers, service standards and interoperability principles, supporting the progression towards a more data-driven and integrated administration (e.g. promoting the adoption of common methods for electronic identification of service users).

- The *sub-secretario* should be responsible for organisational issues, procedures, IT policy, ICT co-ordination, projects' prioritisation, oversight and evaluation (the powers and responsibilities would be the same as those foreseen for the agency and elaborated in the section above). The establishment of this *sub-secretaría* and the introduction of the CIO position (as *sub-secretario*) would be motivated by the need to ensure a sufficiently high-level ranking position with the sufficient political power to foster a co-ordinated approach, identifying and prioritising strategic decisions and investments in ICT across the public sector and policy areas which are linked to the core strategic objectives of the government, supported by the yearly budget for ICT or by dedicated funding. Any specific ICT fund would have to be co-ordinated and aligned with exiting funding programmes, such as the one for innovation, the GIP.
- The *sub-secretario* should advise public entities in the selection, deployment and use of the technology based solution, in monitoring project implementation and in identifying the best practices of reference given the specific needs of the entity, either within the Chilean administration, or internationally.
- The *sub-secretario* should hold a leading advisory role in support of the Ministry of Foreign Affairs in relation to the adoption and implementation of international treaties, conventions, and agreements regarding digital government related issues.
- The *sub-secretaria* should be responsible for ensuring co-ordination with relevant entities responsible for the definition and implementation of policies strictly entangled with digital government, such as the one covering public sector innovation.
- Considering the importance of digital technologies and data to support the overall transformation of the public sector, it would be advisable to establish under the *sub-secretario* the positions of Chief Data Officer (e.g. responsible for data-driven public sector strategy and for open data), a Chief Digital Transformation Officer (e.g. responsible for rethinking digital service design and delivery inside and outside the public sector), and a Chief Technology Officer (e.g. responsible for overseeing current technology aligning technology-related decisions

with the organization's goals) all reporting to the *sub-secretario* (i.e. the CIO).

- It would be advisable also to create the role of Chief Digital Security and Data Protection Officer/Advisor to support and advise the *sub-secretario* in its co-ordinating role to define the risk management approach/strategy to address digital security and privacy issues, which includes the adoption of effective and appropriate security measures.

  An example of reference is Spain.

Table 2.1. **Pros and cons of the different alternatives**

Option	Pros	Cons
Establishment of an agency for public sector digitalisation	More independence from political power and cycles and therefore potentially more stable. More inclined to take decisions based on operational and technical necessities (e.g. efficiency goals, innovation priorities) rather than politically motivated ones. Easier to enact co-ordination across sectors.	The political legitimacy stems from a stronger organisation (e.g. centre of government; inclusive steering committee). There is a balance to be found in the trade-off between political control and autonomy of action, in particular when the agency includes regulatory powers. Its establishment – if in isolation from an overall reorganisation of the central government – requires a strong "case" and needs a solid legal background (for instance to grant it regulatory powers) to ensure its legitimacy and existence across time. The tension between regulatory powers and the provision of services (e.g. invoicing other public institutions for services provided) should be appropriately balanced in the phase of institutional design to avoid the creation of harmful incentives. Its establishment requires a more complex institutional design, hence a longer time frame needs to be foreseen for implementing the change.
Establishment of a *sub-secretaría* for public sector digitalisation	Strong political power. More rapid establishment as less "invasive" in the existing structure. Easier to establish the legal background needed to give it the necessary powers and authority (e.g. the regulatory power can emanate from the *secretario*)	The political cycle may tend to produce instability and lack of continuity in the digital government agenda. Political considerations may bias the implementation of the agenda and resource allocation in favour of more visible projects, even if less strategic. Less certainty on its stability/duration – it is subject to the political cycle/will of the minister.

Recommendations and high-level roadmap supporting a gradual implementation of the governance model suggested

Phase 1: Strategic planning of the implementation

A gradual approach is suggested for the implementation of the selected option. First, considerations based on the work and tasks currently carried out by the Unit for Modernization and Digital Government at the SEGPRES could suggest how to align its functioning to the OECD's policy recommendations in the short term. These initial actions can be adopted while a strategy for the gradual implementation of the recommendation is decided with actions planned for the medium and long terms. This would foresee the policy adjustments or regulatory/legal revisions needed to create the required legal environment for new digital government governance (see Phases 2 and 3).

Phase 2: Establishing the legal and regulatory framework

Action 1: Take the legal steps to create a solid background for the establishment of a stable governance framework, setting a clear mandate and responsibilities, e.g. issuance of a decree and/or law, or a decree followed by a law. This implies: 1) reviewing all the legislation currently in place granting different responsibilities to various actors; 2) approval of the necessary legislation. This will be followed by the creation of the CIO and of the agency/*sub-secretaría* through a presidential instruction, with the top political support of the Minister of SEGPRES and of the Minister of Finance. The CIO will then be tasked with the responsibility to identify and take the concrete measures necessary to set up the new governance model and to consolidate some of the ICT services and procurement across the central administration.

The content of the new legal framework will need to ensure the:

- Creation of the new governance model/structure: agency or *sub-secretaría* with adequate staffing, powers and its own budget.
- Creation of the CIO function/role:
  - CIO responding to the top political level and to the co-ordinating body (e.g. steering committee)
  - CIO with a broad set of competencies relevant to digital government, including responsibilities:
    - for making proposals on human resources – for example to design recruitment mechanisms linked to the priorities established in the national Digital Agenda, to support the

delivery of shared ICT services, open data, social media – and identify possible human resource partnerships with the private sector to rapidly build capacities within the institution)

- ❖ for monitoring ICT expenditures and the ICT assets census (e.g. producing an annual report of the current situation in both areas under the name of the President)
- ❖ for co-ordinating the design of the national digital government and for promoting and monitoring its implementation
- ❖ for adopting a (mandatory) business case methodology (value proposition approach) for ICT projects to support strategic planning, and strengthen the capacities to define return on investment and monitor implementation
- ❖ approve ICT-related expenditures or ICT project funding.

– CIO with co-ordination powers in relation to the authorities responsible for the main IT strategic projects

– law determines its role/powers in relation to the ICT units across the various ministries

– CIO tasked with the responsibility to take the technical and organisational decisions/measures required to establish parts of the governance

– CIO tasked with the responsibility to issue common standards and guidelines in the priority areas identified in the Digital Agenda (e.g. cloud computing, mobile government, social media, open data)

– establishment of the following functions reporting to the CIO/head of the agency: Chief Data Officer (responsible for all initiatives aimed to foster data-driven public sector and open data); Chief Digital Transformation Officer (responsible for the digital transformation of the administration, including the digitalisation and integration of internal operations (setting strategic directions and policies for "shared services in the "back office") and of the delivery of digital services ("front office") covering also the area of new forms of collaboration and public engagement for the delivery of user-driven services; and Chief Technology Officer (responsible, for example, among others, of designing the joint ICT procurement strategy, managing specific

ICT funds, fostering uptake of common enablers in the administration, e.g. cloud computing, interoperability, designing the cybersecurity strategy).

Action 2: establishment of a legal/regulatory framework for the delivery of shared services and for ensuring common ICT procurement and hiring approaches.

Phase 3: Gradual implementation of what is foreseen by the new law(s)

Once the new legal framework has been established:

- Creating a small group of people supporting the CIO in taking the immediate measures for the centralised control of ICT procurement, for the full staffing of the new directorate/agency and for designing/defining the other organisational measures.
- Launching certain technical measures for which staff with previous skills/knowledge are needed to create inter-ministerial working groups with staff from various units, part-time and in sector units with large ICT capacity (such as an ICT project management, data analytics) led and co-ordinated by the agency/*sub-secretaría.*
- Gradual staffing of the *sub-secretaría*/agency to support the implementation of the common measures (for instance concerning the establishment of the shared services) with a priority of assigning new people hired in the IT area. People previously "on loan" from the various ICT departments of the different ministries will be permanently assigned to the *sub-secretaría*/agency to support the implementation of the common measures/centralised decision.

Notes

1. Source: Ministry of Finance, Government of Chile, February 2016.
2. www.agendadigital.gob.cl.

3. www.normativaconstruccion.cl/documentos_sitio/57276_DTO-1_03-FEB-2016.pdf.

4. The assignment of the regulatory powers will have to take into account the powers of the "*superintendencias*", which, as institutions with a high degree of autonomy and their own legal statute and entity are, in many instances, responsible for controlling and supervising the legal framework of specific activities in their sphere of competence, such as pensions, banking, environment, etc.

References

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Government of Chile (2015), *Digital Agenda 2020*, Santiago, www.agendadigital.gob.cl (accessed in December 2015).

Government of Chile (2014), Decree of the Ministry of Economy, Development and Tourism No. 14, 2014.

Government of Chile (2012), Presidential Instruction 002 of 2012, www.guiadigital.gob.cl/articulo/instructivos-presidenciales#ip005.

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OECD (2014), *Recommendation of the Council on Digital Government Strategies*, OECD, Paris, available at: www.oecd.org/gov/digital-government/Recommendation-digital-government-strategies.pdf.

Annex A
Mapping the governance of digital government in Chile and other OECD countries

Table A.1. **Location of the central/federal government Chief Information Officer**

Country	Centre of government	Co-ordinating ministry			Line ministry		
	Head of State or Head of Government	Ministry of Public Administration	Ministry of Internal Affairs	Ministry responsible for budgeting (e.g. Ministry of Finance)	Ministry of ICT	Ministry of Economic Affairs	Ministry of Science and Innovation
Australia				✓			
Austria	✓						
Belgium					✓		
Canada		✓					
Chile	✓						
Czech Republic			✓				
Denmark				✓			
Estonia				✓	✓		
Finland				✓			
France	✓						
Germany			✓				
Greece		✓					
Hungary			✓				
Iceland				✓			
Ireland		✓					
Israel				✓			
Italy	✓						
Japan	✓						
Korea		✓					
Luxembourg		✓					
Mexico	✓	✓					
Netherlands			✓				

Table A.1. **Location of the central/federal government Chief Information Officer** (*continued*)

Country	Centre of government	Co-ordinating ministry			Line ministry		
	Head of State or Head of Government	Ministry of Public Administration	Ministry of Internal Affairs	Ministry responsible for budgeting (e.g. Ministry of Finance)	Ministry of ICT	Ministry of Economic Affairs	Ministry of Science and Innovation
New Zealand			✓				
Norway		✓					
Poland		✓					
Portugal	✓						
Slovak Republic							
Slovenia		✓					
Spain	✓	✓		✓			
Sweden							
Switzerland				✓			
Turkey							
United Kingdom	✓						
United States	✓						
Non-OECD							
Colombia					✓		
Total	10	10	5	7	3	1	0
Percent	31.25%	31.25%	15.63%	21.88%	9.38%	3.13%	0%
Percent by block	31.25%		68.75%			12.50%	

Notes: 1. Percents refer to the number countries having a central/federal government CIO or equivalent position (32) having the lead in the co-ordination of e-government/digital government policy and implementation. The Slovak Republic and Turkey do not have such a position. The leading digital government policy-making function in Sweden is the e-Government Delegation (E-Delegationen), which is a collegiate body that does not work as a classic CIO structure. 2. The sum of percents adds up to more than 100% as in certain cases CIO structures are attached or report to more than one institution.

Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796; desk research.

Table A.2. **Units or bodies leading the work on digital government**

Country	Unit	Location
Australia	First Assistant Secretary in charge of Digital Government	Department of Finance
Canada	Chief Information Officer Branch	Treasury Board of Canada Secretariat
Denmark	Agency for Digitisation	Ministry of Finance
Estonia	Undersecretary of State Information Systems (CIO)	Ministry of Economic Affairs and Communications
New Zealand	Government CIO	Department of Internal Affairs
Portugal	Agency for Administrative Modernisation	Presidency of the Council of Ministers
Spain	Direction of ICT	Ministry of the Presidency
United Kingdom	Government Digital Service	Cabinet Office
United States	Office of E-Government and Information Technology (CIO)	Office of Management and Budget, White House
Uruguay	Agency for Electronic Government and Knowledge and Information Society (AGESIC)	Office of the President

Table A.3. **Responsibilities of the function/unit leading and co-ordinating digital government or e-government**

	Advising strategy development	Monitoring strategy implementation	Prioritisation of ICT projects across the government	Reviewing ICT projects across the government as needed	Mandating external reviews of ICT projects across the government	Approving – or stopping – ICT projects across the government as needed	Other
Australia	✓	✓		✓			
Austria	✓	✓	✓	✓			
Belgium	✓	✓	✓	✓	✓		✓
Canada	✓	✓	✓	✓			
Chile	✓	✓	✓				
Czech Republic							✓
Denmark	✓	✓		✓			
Estonia	✓	✓	✓	✓			
Finland	✓	✓		✓			
France	✓		✓	✓			
Germany	✓						
Hungary	✓	✓	✓	✓			✓
Iceland	..	..	..	..	..	..	..
Japan	✓	✓	✓	✓			
Korea	✓	✓	✓	✓			
Luxembourg	✓	✓	✓	✓		✓	
Mexico	✓	✓	✓	✓			
Netherlands							✓
New Zealand	✓	✓	✓	✓	✓	✓	
Norway	✓	✓					✓
Poland							
Slovenia	✓	✓	✓	✓			✓
Spain	✓	✓	✓				
Sweden	✓	✓					
Switzerland	✓	✓	✓	✓			
OECD25	21	19	15	16	2	2	6
Colombia	✓	✓		✓			
Latvia	✓	✓	✓		✓		

Note: ..: not available.

Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

Standardised ICT project management models: The Danish ICT Project Model

The Danish ICT Project Model provides a standardised way of managing ICT projects across the government administration. With clear reference to the United Kingdom's ICT project model Prince2, it provides guidelines on how to organise and manage ICT projects and delivers concrete templates for all generic products in the process. The overall phases covering all projects are illustrated in Figure A.1.

Figure A.1. **Phases of projects in the Danish ICT Project Model**



The Ministry of Finance has created a unit establishing good practices on e-government projects, including both mandatory and recommended elements. The model has enabled the establishment of a specific governance structure, for example requiring approval 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.

Source: Danish Digitisation Agency; and http://www.digst.dk/Styring/Projektmodel (accessed January 2016).

Denmark: Managing large ICT project risks

In 2010, the Danish government recognised that many government IT projects suffered from structural difficulties and established the need for more professional central review mechanisms. The Council for IT Projects was established in 2011. It reviews any IT project with a budget of more than DKK 10 million (around EUR 2 million) and any government IT programme with a budget of more than DKK 60 million. The council evaluates whether the project or programme has high risks. If it does, a binding and very close monitoring of the project becomes mandatory, including reporting every six months and the option of conducting an external review. The council can also recommend that projects that are already underway be subject to a review if they are delayed, become more costly than planned or face substantial challenges to the realisation of expected benefits. The Danish Council for IT Projects is composed of nine senior managers, primarily from the private sector, but also from semi-public and public IT-intensive organisations. Its members have

experience with large-scale IT projects or projects for change and can contribute solid and competent guidance to governmental IT projects. So far the council has carried out around 50 risk assessments for government IT projects, out of which 9 were found to be of high risk.

Source: Danish Council for IT Projects (n.d.), http://www.digst.dk/Styring/Itprojektraadet

Table A.4. **Countries with a strategy in place covering ICT procurement specifically**

	Within selected line ministries	Across the central government	Across different levels of government	No specific ICT procurement strategy exists
Australia		✓		
Austria		✓		
Belgium	✓	✓	✓	
Canada		✓		
Chile				✓
Czech Republic				✓
Denmark				✓
Estonia				✓
Finland		✓	✓	
France		✓		
Germany	✓	✓	✓	
Hungary				✓
Iceland				✓
Japan		✓		
Korea				
Luxembourg		✓		
Mexico		✓		
Netherlands		✓		
New Zealand	✓			
Norway	✓			
Poland	✓			
Slovenia				✓
Spain		✓		
Sweden				✓
Switzerland		✓		
OECD25	5	13	3	8
Colombia	✓	✓	✓	
Latvia				✓

Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796.

Table A.5. **Budget of the unit or structure leading/co-ordinating digital government as a share of public expenditure**

Country	Institution	Budget (millions)	Year	Total public expenditure (billions)	Budget as % of total public expenditure
Australia	Australian Government Information Management Office (AGIMO; CIO and CTO)	AUD 258.41	2014	AUD 398.3	0.006%
Canada	CIO Branch	CAD 33.9	2014	CAD 276.8	0.012%
Chile	State Modernisation and Digital Government Unit	CLP 1554	2014	CLP 32 766.1	0.005%
Denmark	Agency for Digitisation	DKK 320	2014	DKK 1 078.556	0.03%
Estonia	Estonian Information System Authority (RIA)	EUR 8	2014	EUR 7.59	0.11%
	Undersecretary of State Information Systems (CIO)	EUR 0.6	2014	EUR 7.59	0.008%
New Zealand	Government CIO	NZD 27.2	2014	NZD 71.5	0.04%
Portugal	Agency for the Administrative Modernisation	EUR 19	2014	EUR 30.647	0.06%
Spain	Direction of ICT	EUR 21	2015	EUR 436.372	0.004%
United Kingdom	Government Digital Service	GBP 58.345	2014-15	GBP 743	0.01%
United States	Office of E-Government and Information Technology (CIO)	USD 7	2014	USD 3 500	0.0002%
Uruguay	Agency for Electronic Government and Knowledge and Information Society (AGESIC)	URY 364	2014	URY 391.859	0.09%

Source: National budgets, national budget execution reports.

Box A.1. **Legal and regulatory framework for digital government in Chile**

Law No. 20453, 2010 on the Internet Neutrality Principle

Law No. 19.628, 2012 on Privacy, D.O. 28.08.1999

Law No. 20.500, 2011 on Public Associations and Public Participation in Public Management

Law 19.799, 2002 on Electronic Documents and Digital Signature

Law 19.223, 1993 on Cybercrime-related Disputes Settlement

Law on Intellectual Property, 2003

Law No. 20727, 2014 on the Electronic Invoice

Box A.1. **Legal and regulatory framework for digital government in Chile** (*continued*)

Decree No. 1, 2015 on Websites Run by the Central Administration

Decree No. 271 on Registration Schemes for Documentary Repositories and Metadata Schemes for the Bodies of the State

Decree No. 81 on Interoperability of Electronic Documents

Decree No. 14 2014 on Technical Issues and Standards concerning the Digital Signature, the Interoperability Framework and Open Data

Presidential Instruction No. 030-2000 on Public Participation

Presidential Instruction No. 005-2001 on E-govermnent

Presidential Instruction No. 006-2004 on the Digital Signature

Presidential Instruction No. 008-2006 on Active Transparency

Presidential Instruction No. 002-2011 on Citizen Participation

Presidential Instruction No. 002-2012 on Digitalisation of Public Procedures

Presidential Instruction No. 005-2012 on Open Government

Presidential Instruction No. 007-2014 on Citizens' Participation

Presidential Instruction No. 030-2000 on Public Participation

Presidential Instruction No. 005-2001 on E-govermnent

Presidential Instruction No. 006-2004 on the Digital Signature

Presidential Instruction No. 008-2006 on Active Transparency

Presidential Instruction No. 002-2011 on Citizens' Participation

Presidential Instruction No. 002-2012 on Digitalisation of Public Procedures

Presidential Instruction No. 005-2012 on Open Government

Presidential Instruction No. 007-2014 on Citizens' Participation

Decree of the Ministry of Economy, Development and Tourism No. 14-2014 covering a number of technical issues and standards concerning the digital signature, the interoperability framework and open data.

Sources: www.guiadigital.gob.cl/articulo/instructivos-presidenciales#ip005; and documents provided by the government of Chile.

Table A.6. **Key strategic digital government projects in the government of Chile**

Project	Main ministry/lead actor/ co-ordinator	Focus
SICEX	Ministry of Finance	Aims to provide mechanisms to create a single portal that allows users to electronically complete all the necessary administrative procedures for foreign trade operations. Current projects include integrating the platform with the Port Community Systems (PCS) to facilitate the import/export process for businesses.
Escritorio Empresa	Economic Development Agency (CORFO)	Integrated, focused, interactive and easy to use digital platform that will allow companies to access information and complete all administrative procedures and exchanges with the central government.
Chileatiende	Ministry General Secretariat of the Presidency (Comité de coordinacion with representatives from "Prevision Social", hacienda, IPS, SEGPRES)	Align the multi-channel service delivery strategy with international standards to improve efficiency and user satisfaction.
Ventanilla Unica	Ministry of the Environment	La Ventanilla Única (VÚ) del RETC is an online portal providing access to the different sectorial declaration systems, that will allow for the collection and standardisation of relevant environmental information.
Tu empresa en un día	Economic Development Agency (CORFO)	A platform that serves as a one-stop shop for entrepreneurs that want to create and register their company.
ChileCompra	Ministry of Finance	Enhance competition by creating more equal opportunities for small and medium-sized enterprises to become providers of the state.
Sistema integral de cumplimiento tributario	Tax authority	Integrate service systems in order to create a single desktop system for tax officials and auditors.
Expediente electrónico	Tax authority	Electronic document management for taxpayers and officials.
Sistema de Auditoría	Tax authority	Improvements in the management of audit cases.
Sistema de información estructurada and No estructurada	Tax authority	Receiving, processing and analysis of information provided by external agencies.
Matriz de Riesgo	Tax authority	Tax compliance management, from risk identification to case management.
Sistema de Cumplimientos en Terreno	Tax authority	Support for the management of tax compliance activities in the field using mobile solutions.

Table A.6. **Key strategic digital government projects in the government of Chile** (*continued*)

Project	Main ministry/lead actor/ co-ordinator	Focus
Historia clínica compartida/Registro médico electrónico	Ministry of Health	Development of an electronic medical record in different phases that would include a number of functionalities, including remote follow-up and e-prescriptions, improvement of the FONASA platform, integrated system for citizen information and care, epidemiological oversight and alert system, IS for emergency and disaster management
Clave única	Civil Registry	Seeks to provide citizens with a single electronic identity (ID and password) for conducting online transactions with the state, eliminating the need for multiple registrations in relation to a single service. Planned developments for 2015 included the possibility to obtain a *clave única* online.

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