OECD Digital Government Studies

Digital Government Review of Panama

ENHANCING THE DIGITAL TRANSFORMATION OF THE PUBLIC SECTOR

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Foreword

Rapid digital developments pose a challenge to governments seeking to use new technologies and data to provide more effective services to citizens and businesses. The OECD Digital Government Review assesses the opportunities and challenges linked to Panama's digital agenda.

In recent years, the Government of Panama has invested in the digitalisation of the public sector for improved efficiency and responsiveness. It has laid the foundations for successful digital government by improving the operational effectiveness of the National Authority for Government Innovation (*Autoridad Nacional para la Innovación Gubernamental, AIG*). Panama should now focus on developing expertise and shared capabilities throughout the public sector. This review suggests a number of actions to support Panama's efforts to improve social well-being and suitable economic growth. These include measures to enhance the strategic use of digital tools and data to create a competitive, inclusive and cohesive economic environment; support productivity; and foster citizens' and business' trust in government institutions.

This review was prepared at the request of the Republic of Panama. The importance of this policy area for the government is demonstrated by Panama's voluntary adherence to the *OECD Recommendation of the Council on Digital Government Strategies* in 2017. The review builds upon the analytical framework provided by the Recommendation and on the experience of the OECD developed through similar projects over the last 15 years. The review also brought together experts and policy practitioners from several countries to provide peer insights.

This review and Panama's experiences also contribute to the global policy debate on the digitalisation challenges and opportunities across different policy areas, including digital government. This work is part of the Going Digital Project, which is the OECD flagship initiative designed to address this policy issue.

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Executive summary

Panama has long championed the value of digital government, demonstrating a broad national consensus on seizing the opportunities brought by new technologies to make the public sector more efficient, responsive and sustainable. The country has laid strong foundations for equipping the public sector as a whole to tackle broader strategic goals for Panama's digital economy and society. Working towards these goals requires not only sustaining existing efforts, but also exploring data-driven activity, open-by-default approaches, collaborative design and delivery of services, and digital skills development for public servants as well as citizens and businesses.

Panama's current digital government strategy (Digital Strategy 2014-19 PANAMA 4.0) provides a collective vision for the future of the country's public sector and recognises the critical role of digital technologies in supporting a government driven by users' needs, building a competitive and inclusive economy and encouraging sustainable societal well-being. Further development of this vision requires taking the digital agenda beyond technical implementation to pursue more strategic objectives such as adopting a digital-by-design approach and protecting and enhancing citizens' digital rights.

While the National Authority for Government Innovation (*Autoridad Nacional para la Innovación Gubernamental*, AIG) has clearly demonstrated the effectiveness of strong leadership providing a clear vision and setting a strategy for implementation, this is not sufficient for the digital transformation of the public sector. The transformation depends on other critical variables such as permanent political support, a clear and solid institutional mandate, necessary co-ordination mechanisms, and strategic policy levers. The capacity to mobilise the required financial and human resources across public sector organisations is also necessary for the digital government strategy to achieve its government-wide ambitions.

Success across government relies on cohesion and horizontal co-operation. One of the critical enablers of this is data. Panama has developed an important focus on open government data, but has made less progress on using data to improve policymaking, design services and monitor performance. The country can now develop a broader strategy for improving the management, sharing, use and reuse of data within the public sector. Recognising the importance of improving the accessibility and reuse of openly published data, as well as internal data governance, will support Panama's digital government evolution towards a public sector that leverages data to be more open and innovative.

Finally, and in line with most governments from OECD member countries, Panama needs to meet rising expectations from service users. Understanding the entirety of a user's journey from end to end across multiple channels, as well as the experience of public servants in meeting those needs, is crucial for effective service provision and user satisfaction. AIG has shown strong central leadership in adjusting and re-designing processes and developing shared infrastructure, but Panama should now seek to adopt a more strategic approach that defines common standards and embeds a user-centred culture throughout the public sector.

Key policy recommendations

Strengthening Governance

- Prioritise a strategic shift in the digital government framework towards efforts that reinforce the country's digital maturity and encourage greater involvement from the ecosystem of stakeholders for better policy alignment and value creation.
- Continue supporting the relevance and mandate of AIG as the national public sector organisation responsible for leading and coordinating the development of digital government, prioritising the evolution of some of its responsibilities.
- Strengthen coordination mechanisms inter-departmentally to secure coherent and sustainable policy implementation, shared ownership and responsibility for the development of a digitally-enabled state.
- Continue efforts to keep the legal and regulatory frameworks updated that can allow Panama to enhance the digital transformation.

Building Institutional Capacities

- Reinforce the level of priority attributed to the development of digital skills in the public sector that can properly sustain the country's efforts and ambitions towards a digitally-enabled state.
- Amplify the use of policy levers such as business cases for ICT investment and budget thresholds that reinforce the coordinating role of AIG in planning for investments in digital technologies across the public sector.
- Prioritise the development of a specific ICT procurement policy for the Panamanian public sector to strengthen the country's permanent efforts towards a coherent and sustainable digital government.

Data-driven Public Sector

- Increase the strength and visibility of leadership for the data agenda at both the central level and within each institution in order to build a data-driven public sector culture in Panama.
- Consider how civil society actors and private sector entrepreneurs can work with public servants to explore how Panamanian government data can improve lives whether through government policy, voluntary activities or commercial solutions to everyday problems.

Service Design and Delivery

- Establish a service design and delivery culture driven by citizens' needs within its institutions as well as at AIG to help Panama develop a joined up, channel agnostic approach to delivering services.
- Prioritise the design of a seamless experience for businesses, citizens and visitors and clearly identify how services and technologies already in use, as well as those planned for the future, will interact.
- Develop an understanding of the needs of citizens that allows the Panamanian government to focus proactively on the most important user problems to maximise public value as services are being designed.

- Support experimentation with emerging and disruptive technologies by encouraging an innovative approach to the delivery of public services in Panama.
- Commit to government investment in Panama's digital infrastructure and industries and encourage inward investment and collaboration across borders to sustain and develop Panama as a "digital hub".

Assessments and Recommendations

Strengthening governance

Driving the digital transformation of the public sector

Digital government strategies are critical artefacts in guiding policy action in work streams that are constantly and rapidly evolving. Strategies are able to align goals, objectives and initiatives, but are also fundamental in building consensus and contributing to the necessary cross-government co-ordination for efficient and effective policy implementation. Additionally, their public availability and regular monitoring positively contribute to improved transparency and accountability from the ecosystem of digital government stakeholders (OECD, 2016[1]). Aware of the importance of this policy instrument, all OECD countries that completed the OECD Digital Government Performance survey (2014[2]) and 73% of the Latin American and Caribbean countries that participated in the OECD Government at a Glance survey (2016[3]) have a digital government strategy.

Following a first version made available in 2014, an updated version of the Digital Agenda 2014-19 Panama 4.0 was launched in January 2016 containing the initiatives of digital government and connectivity for the modernisation of public sector organisations (AIG, 2016[4]). The strategy incorporated the demands expressed in several meetings organised with digital government stakeholders about their expectations for the period 2014-19. Questions on transparency, digital government services, planning, capacity building, interoperability and adequate legal and regulatory frameworks were considered as priorities to be integrated into the new policy document. The result was a detailed and comprehensive strategy, structured around important strategic lines and values, as well as key actions and goals considering the 2016, 2019 and 2024 timeframe.

Evidence collected demonstrates that the role of the Agenda was widely acknowledged among the stakeholders as the central strategy that guides the government's cross-cutting digitalisation efforts. The common recognition of this central policy instrument reflects a positive alignment of views and expectations by the ecosystem of digital government stakeholders.

The OECD peer review team observed that institutional legacy determines that transparency and accountability are still considered as main drivers for digitalisation efforts resulting from social expectations. While those dimensions should remain as critical, the Panamanian context for the digital transformation of the public sector seems to have matured to allow for the uptake of more strategic approaches focused on priorities such as higher agility, performance, user-driven approaches and citizens' well-being. For instance, the Panamanian government could better prioritise the development of a data-driven public sector culture, including open government data approaches and reinforcing interoperability between public digital systems for an advanced robust transformation of the public sector and public value creation (see Chapter 3 and 4).

In addition, there appears to be room for manoeuvring beyond Panama's good positioning in international indexes, offering incentives to strengthen the maturity of digital governance towards concrete internal drivers to build a commitment from the public sector to embrace the opportunities and tackle the challenges of the digital transformation based on the national agenda's priorities.

A reinforced vision for the future of Panama and the role of digital government to support a digital economy and society would bring considerable value to the efforts and commitments already underway across different sectors and levels of government.

Leadership and co-ordination

The existence of a public sector organisation with a clear leadership role on digital government policies is critical for the coherence and sustainability of national efforts, namely in a disruptive context of rapid and constant technological evolution. In line with the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[5]) and relevant experiences observed in OECD member and non-member countries, the challenge is to provide such an entity with the proper mandate, political support and adequate resources that can enable co-ordinated and synergetic policy action across the different sectors and levels of government (OECD, 2016[1]).

In Panama, the National Authority for Government Innovation (*Autoridad Nacional para la Innovación Gubernamental*, AIG) is mandated across the three branches of government (executive, judicial and legislative, including local governments) to "plan, co-ordinate, issue guidelines, supervise, collaborate, support and promote the optimal use of information and communication technologies (ICT) in the government sector for the modernisation of public management, as well as recommend the adoption of national policies, plans and strategic actions" (AIG, 2019[6]).

The work developed by AIG on different fronts, co-ordinated across the government but also involving the private sector and civil society, is highly acknowledged by the ecosystem of digital government stakeholders in Panama. Since its foundation, the Authority was able to leverage political support, institutional mandate and availability of resources to strengthen the digitalisation of the country's public sector and improve the relationship of the government with its constituents through digital technologies.

During the fact-finding mission in Panama in November 2018, the OECD peer review team identified some critical expectations that can help AIG strengthen its role and simultaneously better respond to the needs of the country's digital landscape. AIG operational leadership for the digital transformation of government has allowed Panama to rapidly progress in several work streams (e.g. standards and guidelines, multichannel service delivery and the provision of interoperable cloud-based platforms through its data network), but also determined incipient efforts dedicated to the strategic and sustainable planning role of the digital transformation in the Panamanian public sector. A more strategic role could allow the Authority to be less absorbed by operational tasks and the technical delivery of projects and more focused on promoting a digital transformational culture and capacities across the public sector.

The abovementioned repositioning of AIG could allow renewed efforts in the development of a systems thinking vision that identifies and operationalises synergies across the public sector and fosters horizontal integration, thereby overcoming siloed and fragmented digitalisation approaches. Such an approach could also renew efforts in improving the relationship with civil society, businesses and academia as well as reinforcing the ecosystem of digital government stakeholders and better enabling collaborative policy approaches and joint ownership. It could allow simultaneously an improved focus on communication and on the creation of a digital transformation culture across the public sector workforce.

Compliance and mandates

Reflecting the Panamanian government's commitment in the last decade to the digitalisation of the country's economy, society and public sector, AIG benefits from a context with high political support and cross-cutting acknowledgement and recognition of its mandate and activities. The Authority counts on a very positive institutional environment that favours its co-ordination role across the public sector to promote digital transformation approaches with possible impacts on the efficiency of the administration, on the levels of trust of the citizens in the government and on the social well-being of the population.

The OECD peer review team assessed an opportunity for reinforced mobilisation of different levels of government, building on several already initiated efforts. The political support, resources and high acknowledgement that AIG benefits from (and contributes to) within the ecosystem of digital government stakeholders could be leveraged to build higher preparedness, engagement and empowerment of the municipalities, in the pursuit of their individual digital transformation agendas. The Government of Panama should consider improved communication and reinforce collaborative efforts with local government as a priority for to ensure local stakeholders understand the needs of the digital transformation of the public sector as a whole, and a common sense of shared responsibility that would help addressing them in a sustainable, informed, co-ordinated and possibly collaborative manner

Additionally, the OECD peer review mission found room for improvement on the level of compliance concerning existing key digital guidelines and standards (e.g. the once-only principle, data exchange in the public sector). Therefore additional policy action seems to be needed to increase awareness and ensure enforcement of the digital government policies. Reinforced communication efforts that provide adequate guidance to different sectors and levels of government could play a fundamental role in expanding awareness of the benefits of the digital transformation of the public sector and the need for co-ordinated efforts and systems thinking approaches.

Enabling legislation and digital rights

An updated legal and regulatory framework is an essential piece of sound governance for digital government policies (2014[5]). To seize the opportunities and tackle the challenges of the digital transformation in economies, societies and governments, the legal and regulatory framework needs to positively respond to the pace of rapid technological change. This requisite is particularly relevant in the public sector context, where actions and activities tend to be framed by laws and regulation.

For several years, Panama has had critical laws and regulations in place that enabled the progressive adoption of digital technologies in different sectors of activity, namely in the public sector. For instance, Law No. 51 of 22 July 2008 regulates the use of electronic documents and digital signatures (Asamblea Nacional, 2008[7]) and Executive Decree 275 of 11 May 2018 regulates digitalisation and digital documents procedures in government (Ministerio de la Presidencia, 2018[8]). Law No. 83 of 9 November 2012 is a cross-cutting legislation on the use of digital technologies in the public sector covering topics such as the value of digital communication and digital signatures, the once-only principle and the exchange of data in the public sector, accessibility for citizens with special needs and interoperability in the public sector (Asamblea Nacional, 2012[9]).

A consensus seems to exist among all the public sector organisations interviewed during the OECD fact-finding mission in Panama City in November 2018 that the legislative and regulatory framework needs to be updated, in particular reflecting the potential application of recent and disruptive technologies such as artificial intelligence (AI), blockchain or data analytics. A consensus was also found on the need to update the law on public procurement (Asamblea Nacional, 2006[10]), in order to better enable the development of e-procurement and contribute to more efficient digital technology investments in the public sector (see Chapter 2: Towards digital commissioning) although the existing legislation already considers a mechanism available only for ICT procurement through AIG oversight. The development of a law of personal data protection was also flagged as an urgent necessity and during the drafting of the current report, an executive bill approved in October 2018 by the Legislative Assembly is pending its sanction by the President of the Republic of Panama.

A digital by design approach, embedding digital technologies in the Panamanian legal and regulatory framework from the start, seems to be required to secure the continuous growth and development of a digital economy, society and government. In order to fully embrace a digitally transformative approach with the necessary outreach capacity, the Government of Panama should consider enhancing the citizens digital (and data-related) rights angle. This approach would raise relevant issues such as personal data

protection, personal data ownership and transparency on its management, but also the more advanced discussions about the right of citizens to accept or not decisions based on AI algorithms (a kind of opting out right on AI). The ethical use of data is also increasingly relevant in this discussion given that technologies increasingly rely on data.

Strengthening governance

Proposals for action
In light of the key assessments exposed above, which draw on the main findings and analysis included in Chapter 1 of this review, the Panamanian government could consider implementing the following policy recommendations:
1. Prioritise a shift in the policy framework for digital government to more strategic drivers that can reinforce the country's digital maturity, enabling improved involvement of the ecosystem of stakeholders for better policy alignment and value creation. The following priorities should be considered: a Strengthen the role of data as a key public asset for improved monitoring, forecasting and delivery of services. b Enhance user-driven approaches for simpler, efficient and convenient service delivery. c Build on national and local social and economic drivers, such as improved citizens' wellbeing, a competitive economic environment and a more open and citizen-driven public sector to mobilise the different sectors and levels of government. d Move beyond an AIG centric strategy towards a more distributed model of digital government mandate and responsibilities.
2. Continue supporting the relevance and mandate of AIG as the national public sector organisation responsible for leading and co-ordinating the development of digital government, prioritising the evolution of some of its responsibilities and framework of policy action. The following should be considered: a Evolve the role of AIG to reinforce its strategic mandate and competencies and alleviate some of its operational responsibilities. b Increase the shared implementation of projects and initiatives, promoting the development of capacities across the different sectors and levels of government and supporting a culture of shared ownership and responsibility. c Develop and allocate to AIG additional policy levers (see Recommendations 6 and 7) that can reinforce its strategic co-ordination role and allow the improved implementation of digital government projects and initiatives.
3. Strengthen co-ordination mechanisms to secure coherent and sustainable policy implementation, and shared ownership and responsibility for the development of a digitally-enabled state. The following should be considered: a Increase the regularity of the meetings of Chief Information Officers (CIOs), using them to highlight the relevance and improve the uptake of specific standards and guidelines (e.g. interoperability, the once-only principle). b Create operational communities, bringing together public sector information technology (IT) professionals from different sectors of government focused on critical standards and guidelines (e.g. open data, digital identity) who can share information and meet to allow streamlined development and implementation across the government. c Organise regular meetings of local level CIOs, that can support increased alignment with the Digital Agenda 2014-19 Panama 4.0 and also with AIG initiatives and projects.
4. Continue the efforts of keeping the legal and regulatory framework updated, as a critical enabler that can allow Panama to enhance the digital transformation. The following action lines should be prioritised: a Develop a legal and regulatory framework in critical areas identified during the review such as digital identity, citizens' participation and collaboration, e-procurement, ICT procurement, data-driven public sector, data ownership and transparency and use of emerging technologies in the public sector. b Reduce or move away from the strong legalistic culture across the administration through the promotion campaigns and capacity building actions that can further promote innovative, experimentation-based, iterative and agile approaches to service design and delivery. c Promote digital by design approaches in policy-making processes, developing capacity building/training programmes to sensitise legislators and raise their understanding and awareness on the use of digital technology by the public sector and the implications of new legislation in the digital government landscape. d Invest in the development of a digital rights culture in the different sectors and levels of government, supporting raising awareness and capacity building across the public workforce.

Building institutional capacities

Digital culture and skills in the public sector

Given the digitalisation underway across government processes and services, reinforced efforts are required to prepare civil services with the proper skills that can enable them to deliver. Across OECD member and non-member countries, governments are emphasising cross-cutting policy actions to equip their public sectors with different sets of talents and skills in a permanent effort to address change. *Digital user skills* need to be constantly updated to enable efficient use of basic productivity tools (e.g. email, word processor, spreadsheet, workflow applications) and increasing efforts are also necessary to attract, retain and keep updated *digital professional soft and hard skills* in the public sector (e.g. data analysts).

However, other important skillsets are increasingly recognised as critical for addressing the digital transformation of the public sector. *Digital complementary skills* are required for public professions that are today profoundly transformed by the digitalisation of our economy and society (e.g. tax collection, public sector communication, management of citizen services and planning). Digital management and leadership skills are also necessary for equipping civil servant with a digital transformation mind-set that can allow them to better perform their activities whilst acknowledging the opportunities, benefits and risks of using digital technologies in the public sector (OECD, 2017[11]).

In line with the trends observed in most OECD member and non-member countries, the stakeholders in Panama interviewed during the OECD fact-finding mission in November 2018 and responded to the OECD Digital Government Survey of Panama recognised the government's efforts to reinforce digital skills in the public sector through multiple approaches and initiatives. These initiatives for building capacities across the public sector have been part of the general digitalisation process but a consensus was found for reinforcing endeavours to establish a broad and consistent approach that secures the need development of a digitally capable and mature public sector.

The OECD peer review team observed that training still remains mostly focused on the development of the digital and professional skills of information technology (IT) departments, with an emerging but still limited focus on the development of complementary, leadership and management skills. Although many of the stakeholders interviewed did show a digital transformation culture, stronger efforts to promote this culture across different sectors and levels of government, and especially among senior government officials, seem to be needed to reinforce the sustainability of Panamanian digitalisation efforts in the public sector to reach a higher level of digital government maturity.

The clarification of profiles for key roles and subsequent identification of gaps in terms of the needed skills and capacities in the public sector could help Panama to move towards a more strategic approach in terms of agility, performance and efficiency to foster the digital transformation of its public sector. An advanced culture of delivery in a digital transformation context would strengthen the government's ability to respond to citizens' increasing and evolving expectations towards public services. In this sense, in order to reinforce a digital culture and maturity in the Panamanian public sector, the government could consider prioritising the mapping of the skills and roles needed that could lead to the development of an action plan for retaining, building or attracting the needed digital talent and skills across different sectors and levels of government. This could be complemented by a communication and promotion campaign around digital opportunities and challenges in the public sector.

Strengthening capacities across sectors and levels of government

As mentioned above (see Chapter 1), the mandate and capacity of AIG to lead and implement the digital government policy in Panama is highly acknowledged and positively appreciated in the different sectors of government. The Authority manages an extended list of programmes, projects and initiatives that support a cross-cutting digitalisation of the public sector, allowing the public administration to better serve citizens

and businesses. Initiatives such as the 311 Citizen Contact Centre (*Centro de Atención Ciudadana 311*), the Government Cloud and the Governance Framework of Digital Government (*Marco de Governanza de Gobierno Digital*) (see Chapter 4) are clear examples of policy outputs with a cross-cutting outreach throughout the public sector, improving efficiency and coherency of the Panamanian government efforts towards a digitally enabled state.

Although this overarching and cross-cutting role of AIG has been critical for the rapid development of the country's digital government agenda, the medium- and long-term sustainability of these efforts might be at risk if distributed leadership, joint ownership and shared responsibilities are not promoted throughout the public sector. A risk of overreliance on AIG might determine that the proper capacities and capabilities do not develop in different sectors and levels of government, or they do not do it in a sustainable manner. When discussing their ongoing policy efforts and priorities for the future with different Panamanian institutions, the OECD peer review team assessed that improved digital maturity is needed. Some improvement can be achieved through the development of capacities (see Chapter 2: Digital culture and skills in the public sector) but would be supported by involving and attributing a more active role to different government institutions in the development of digital government policies.

After a period where the cross-cutting leadership and implementation role of AIG was fundamental to kick off and promote strategic projects and mobilise public stakeholders, the Government of Panama should now consider prioritising the creation of shared expertise and digital implementation capacity across different sectors of government. This approach will create conditions for further sustainability of the policies underway and their impact, and bring the country to a new level of digital government maturity.

Planning of investments in digital technologies

The digital disruption underway increases public sector responsibilities for developing an optimised approach to investment in digital technologies that is capable of properly managing and deciding upon different technological trends (e.g. insourcing vs. outsourcing software development, proprietary software vs. open source software, private local hosting and processing vs. public cloud computing). Strategic planning is fundamental for the development of a systems thinking culture across the public sector that promotes the sustainability of digital technology investments, avoids gaps and overlaps, and generates positive impacts in the social and economic context of the countries.

In line with the *OECD Recommendation of the Council on Digital Government Strategies* (2014[12]), namely Key Recommendation no. 10, the experience of several OECD member and non-member countries also demonstrates that important policy tools can be implemented within digital technology investment frameworks, allowing improved policy leadership and reinforced efficiency and coherency on public spending:

- The existence of a **budget threshold** mechanism for the pre-evaluation of digital technology investments above a certain value can promote better alignment between several sectors of the government, avoid duplicated expenditures and secure alignment with existing digital technology standards and guidelines (see Chapter x).
- Mandatory cost-benefit analysis through the application of common **business cases** approaches also allow streamlined digital technology investments that better respond to the planned outputs, outcomes and impacts.
- The availability of **project management standards** for digital technology projects across the public sector also support improved agility in planning, raising comparability and monitoring possibilities that promote efficiency and accountability towards the different digital government stakeholders.
- The establishing of **co-funding mechanisms** capable of strategically mobilising the ecosystem of public, private, academia and civil society stakeholders for the

development of digital technology projects and initiatives, guaranteeing the accomplishment of technical standards and guidelines and supporting a systems thinking culture in the delivery of services to citizens and businesses.

In Panama, AIG has oversight of digital government policies through its role in pre-evaluating digital technology procurement, evaluating investments above PAB 50 000 (approximately EUR 44 000). This mechanism demonstrates that a culture of evaluation and monitoring of digital technology investments is already institutionalised in Panama, with substantial results in the coherence of the policy in place.

However, when consulting AIG and the stakeholders, there appeared to be a general consensus regarding the need to strengthen policy levers for improved efficiency and coherence in investments. The development of business case approaches, which could be applied to all sectors of government, was considered a medium-term priority, as well as the development of standardised project management models. Improved monitoring mechanisms to measure the efficiency, impact and return on investment of projects was also considered a fundamental piece to allow a clearer vision of the digital projects and initiatives underway in the country. The use of co-funding mechanisms by AIG to encourage the development of specific projects and initiatives across the administration, accomplishing the necessary standards and guidelines, should also be considered by the Government of Panama.

Towards commissioning of ICT goods and services

Digital technology procurement is commonly recognised as a critical policy mechanism for effectively delivering digital technology investments. Key Recommendation 11 of the *OECD Recommendation of the Council on Digital Government Strategies* (2014[12]) attributes importance to this policy in sustaining overall objectives for the modernisation of the public sector. The benefits of strategic co-ordination in procuring digital technologies can be found through the aggregation of demand that promotes efficiency, the improved alignment of investments with the main strategic goals of the digital government policy in place, better oversight and monitoring capacities to avoid gaps and overlaps, and new possibilities for reinforced transparency and accountability of public investments.

In 2014, 52% of OECD countries had an ICT procurement strategy for central government according to the *OECD Survey on Digital Government Performance* (2014[13]). In Panama, a general consensus exists on the permanent need to reinforce and update government efforts in this policy area. As in most OECD member and non-member countries, the shift from a traditional-procurement paradigm focused mostly on the acquisition process to a broader digital commissioning paradigm that allows private contractors to partner in developing solutions and services that create public value is increasingly being considered.

AIG and most digital government stakeholders in Panama recognised that the current procurement law represents an obstacle for mature digital technology procurement. A broad consensus was found for the need to update this law or, following the example of most OECD countries, develop specific legislation that can regulate the procurement of digital technologies. There was strong agreement among the stakeholders when considering digital procurement as a critical policy lever for improved digital government policy. Building on this consensus and on the efforts towards digitalisation developed in the last years, the Government of Panama should prioritise, in the short or medium term, the development of specific regulations for digital technologies procurement that can build on the role AIG already has in the matter.

Proposals for action

In light of the key assessments exposed above, which draw on the main findings and analysis included in Chapter 2 of this review, the Panamanian government should consider implementing the following policy recommendations:

5. **Reinforce the level of priority attributed to the development of digital skills in the public sector** that can properly sustain the country's efforts and ambitions towards a digitally enabled state through a specific policy able to mobilise the administration for the promotion of user, professional, complementary and leadership and management digital skills of public servants. The following measures could be considered:
    a. Undertake a mapping of the abovementioned four types of digital skills in the public sector and identify existing gaps and priorities in terms of profiles, roles and capabilities to be developed across the administration,
    b. Define an action plan for retaining, building and attracting, the necessary digital talent and skills across the different sectors and levels of government.
    c. Prioritise policy actions capable of co-ordinating the supply and demand of these skills in the public sector, securing the proper digital skills are considered as part of the institutional mechanisms such as public job profiles, recruitment processes and evaluation systems.
    d. Develop a digital skills communication and promotion campaign led by AIG to raise awareness and acknowledgement across the public sector.
    e. Promote a digital culture across the different sectors and levels of government through oriented awareness raising and capacity building to support the development – namely in high-level and senior public officials – of a mind-set able to properly consider the opportunities and challenges of digital technologies across public processes and services.

6. **Reinforce the use of policy levers that can reinforce the co-ordination of AIG in the planning of investments in digital technologies across the public sector.** These mechanisms should become strategic policy levers properly linked with the Digital Agenda Panama 4.0 and the digital government key enablers, reinforcing the maturity of the governance of digital government in the country. The following levers should be prioritised for this purpose:
    a. Establish institutional mechanisms to secure the budgetary influence of the General Administrator of AIG in the approval and distribution of budgetary resources across the public sector.
    b. Reinforce the communication of the existing budget threshold for investments in digital technologies to raise awareness of its role and benefits for the public sector.
    c. Define the estimation of financial benefits as mandatory for investments above the existing budget threshold and as a recommended practice for investments below the threshold.
    d. Develop a standardised business case that can be used as a cost-benefit mechanism by public sector institutions across the government, building on the existing General Norms for the Management of ICT in the State and on the Principles for Working with Business cases developed by the E-Leaders Thematic Group on Business Cases.
    e. Define a standardised agile project management methodology that can be used across the administration, with an online application for the application of the standard methodology, allowing centralised monitoring of ICT projects and initiatives.
    f. Attribute co-funding responsibilities to AIG, enabling the financial sponsorship of strategic projects and initiatives and reinforcing the leadership and oversight capacities of the Authority.

7. **Modernise the approach towards the procurement of digital goods, solutions and services across the public sector to** strengthen the impact of the Government's investments towards a coherent and sustainable digital government**.** The following actions could be considered:
    a. Develop a dedicated strategy on ICT procurement to address strategic and specific needs of public investments in digital technologies
    b. Secure the alignment of ICT procurement rules with the use of digital standards such as interoperability, digital identity or open source software.
    c. Update the legislation that frames public procurement securing agile approaches adapted to a digital transformation context and better enabling e-procurement solutions.
    d. Prioritise the adoption of a commissioning culture, assuring the necessary links with the formulation of business cases and the delivery of services, and guaranteeing the involvement of suppliers and users throughout the procurement process.
    e. Consider the development of a digital marketplace in Panama, building on the experiences of New Zealand and the United Kingdom for instance, that promote more agile procurement processes for digital technologies and can progressively be considered in other areas of investment.

Data-driven public sector

Governments produce, collect and use data on an ongoing basis. However, this is often done in a way that emphasises existing siloes without respecting standards or considering how it might duplicate data stored elsewhere. Sometimes this is down to a deliberate decision, other times it is simply that organisations are unaware of the impact of their choices. In other ways, the legal or governance structures in a country may be an obstacle to the easy use, or reuse, of the data governments already hold. This is indicative of an inadequate understanding or recognition of data as a strategic asset for public sector organisations.

In all these cases, the impact on the citizen is not insignificant. Whether it is the challenge a citizen faces in proving that they are who they say they are when attempting a transaction over a remote channel (whether telephone or the Internet) or the overhead placed on them to provide physical documents to several organisations to meet a single need, the ability for citizens to provide information once only is one that countries should prioritise.

Nevertheless, it is not solely in the delivery of services that governments can unlock the transformative impact of a data-driven public sector (DDPS). Countries that have implemented a strategic approach to the use of data throughout the public sector are better able to show foresight in anticipating and predicting societal trends and needs and consequently developing more effective long-term plans. Additionally, data plays an important role in being able to analyse the performance of all types of government activity and to use that information not only to make improvements but to be transparent about success, and failure, in ways that support accountability and stimulate public engagement and trust (Ubaldi, van Ooijen and Welby, 2019[14]).

DDPS in Panama

The Panamanian Government recognises that development of ICT would only be an effective tool for modernising the state if it was accompanied with measures that allowed for internal collaboration and interoperability. Importantly, Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[15]) on electronic government, makes provision for all government databases to be interoperable.

Some important efforts are being made to encourage the modernisation of the National Institute of Statistics and Census (*Instituto Nacional de Estadística y Censo*, INEC) and the role it plays alongside the National Authority of Transparency and Access to Information (*Autoridad Nacional de Transparencia y Acceso a la Información* ANTAI) in supporting the Open Government and Open Government Data (OGD) agendas in Panama. As a result, there are some initial encouraging signs of an open data ecosystem beginning to emerge with initial conversations between academics, civic-minded software engineers and the government starting to take place.

Another important development in the application of data to the experience of citizens and businesses in Panama is the legislative process to implement laws focused on issues of data protection and private data. The recently enacted Law No. 81 of March 26 2019 (Asamblea Nacional, 2019[16]), which regulates the protection of personal data, is currently in a two year implementation period following its publication in the Official Gazette. Reflecting the increased global interest best demonstrated through the European Union's General Data Protection Regulation (European Union, 2016[17]) and Panama's adherence to the Budapest Convention on Cybercrime in 2013, the country is beginning to consider how it might defend the rights of citizens and businesses in the safe and effective use of their data. Once again, this is an early improvement where the building blocks are being put in place and allow Panama to work with a consenting public to make full use of data in ways that encourage trust.

Being open in order to increase transparency and accountability in the eyes of the public and civil society is an important element of building trust. However, this commitment to openness has not yet led to a more proactive recognition of the importance of opening data for re-use. This is another sign of the absence of

a real data-driven culture in the government of Panama. Policymaking, service delivery or performance monitoring are not underpinned by an exploration of the opportunities found in applying, opening, sharing and reusing data, either within or outside the government.

Nevertheless, the appetite to become leaders in the application of data to transform policy and services gave the peer review team confidence that this will change. Law No. 33 of 25 April 2013, creating ANTAI, also made provision for an Information Officer and associated team to exist within each public institution with responsibility for proactive transparency, open data and information requests (Asamblea Nacional, 2013[18]). However, this role and this team are not always in place. In order to support efforts around both OGD and DDPS, the Government of Panama should consider it an immediate priority to develop a strategy for appointing people to those roles and co-ordinating that activity across different sectors and levels of the public sector. Building the capacities of senior public sector officers to understand the digital transformation as a phenomenon that clearly surpasses any technological or technical discussion is fundamental to achieving new stages of digital government maturity in national contexts.

The culture of data within Panama's public sector

Data relating to the performance of the economy, tourism and construction are critical to how Panama plans its policy agenda with government priorities also being influenced by the relative performance of the country in international indicators. This has resulted in a focus on the competitiveness of Panama and the need to simplify bureaucracy, particularly for businesses.

However, there is less evidence of data being considered in the specifics of predicting policy needs or the delivery of services. One of the biggest challenges that still exists is limited data sharing between organisations and an absence of cross-sectoral thinking to ensure standardisation of systems or schemas. Despite the provisions of Law No. 83 of 9 November 2012 on electronic government that stipulates all government databases should interoperate, these have not been strongly enforced meaning there are areas of government where this has not yet been possible. This organisation and sector specific approach to data can be seen in the development of platforms for tackling a tightly defined problem or responding to the particular needs of a specific organisation. The vision for these technology interventions appears to lack the strategic overview of responsibility for data throughout the government.

Nevertheless, one of the most encouraging areas of data being applied to transform the government was the creation of a performance framework. The National e-Government Indicators (*Indicadores Nacionales de Gobierno Electrónico*, INAGOB) have allowed the National Authority for Government Innovation (*Autoridad Nacional para la Innovación Gubernamental*, AIG) to produce a baseline for the impact of their activity.

Data is collected relating to the satisfaction and performance of services and AIG publishes comparisons between institutions. Whilst near real-time dashboards are providing institutions and their ministers with insights into what is happening, its application for improving the delivery of services is not universal and depends on the commitment of a given institution to consider data in its approach to delivery.

It is not currently the strategic responsibility of an individual or an explicit expectation of an organisation such as AIG or ANTAI to ensure that a cross-government vision exists for how the country might move towards establishing a data-driven culture. As a result, people still need to look in several places and cannot rely on the data that is available to be timely or licensed in a way that will allow for simple reuse.

There is a potentially crucial opportunity in maximising the role of Information Officers mandated by Law No. 33 of 25 April 2013 (Asamblea Nacional, 2013[18]). In order for that team to act as the champion of a data-driven culture within their organisation, they need to be supported by leadership roles that are not currently in place at either national or organisational levels. This means that the data agenda is not as visible within the country's strategic planning as it could, or should, be. The Government of Panama should

consider sponsoring the mentioned leadership roles, putting in place an important pillar for sustaining a culture of data across the public sector.

Continuous improvement

The OECD peer review team found it encouraging that the 311 Citizen Contact Centre collects satisfaction feedback on all its interactions with citizens and publishes a monthly, per-agency report on the volume of reports and performance in terms of case closures. It was also positively observed that some institutions are proactively requesting this data. Nevertheless, there was limited evidence of a strategic overview from the government as a whole as to how it might apply performance-related insights to improve services. So that such insights are not dependent on ad hoc requests or needs, it would be powerful to make additional information more openly available, initially within government and perhaps later to the public as well.

The Panamanian government should also consider exploring how additional performance information could be made publicly available to provide a visible focus to questions of how citizens, businesses and visitors to Panama experience interactions with the government. Such transparency should not be about highlighting poor performance that could generate broader civic criticism but as a mechanism for empowered teams to derive insights that support the evolution of an improved service.

The Government of Panama is moving away from exclusively using external indices to establish their priorities and is beginning to develop its own, context-specific understanding of performance with the INAGOB and the ten dimensions for digital transformation in government. This existing work on a measurement framework for digital government provides a solid baseline but a culture of performance needs to be fostered within service teams and organisations to establish a more granular understanding of how services are experienced and the outcomes they produce.

It should not be considered sufficient just to measure and publish this data; any of those measurements should be considered in light of how the insight can be applied to improve services or government operations and processes. Therefore, the measurement approach should develop from the pure collection of statistics and become something that can hold people to account. Therefore, the performance framework should not only consider the user's experience but the efficiency, impact and return on investment as well.

External application of government data

A final area for Panama to consider in developing a DDPS is the role of OGD. Panama is already an active participant in the Open Government Partnership and has since 2012 implemented several activities to support the Open Government agenda. One of the areas in which this has been successful is the creation of ANTAI in 2013 and the subsequent development of the national open government data website (*Datos Abiertos de Panamá*, https://www.datosabiertos.gob.pa) is a positive sign. Equally, the AIG SmartNation project shows good promise that will only increase in value if all sectors and ministries participate.

However, with the majority of those datasets detailing budgeting, national statistics, legislation and procurement, it is clear that this has resulted in a focus on questions of transparency and accountability rather than on encouraging the re-use for broader social and economic value creation. Weather forecasting data has been opened up and although universities have done studies with the data, it has not stimulated much interest from app developers or hack events. Despite a public sector with responsibility for delivering various public goods and services that could generate OGD, there was little evidence to see its role and potential being explored.

Whilst there are some limitations to the way in which open data is being used externally, one of the biggest challenges is that there is limited recognition of strategic decisions regarding the publishing of data. This means that organisations make their own decisions about how and when data is published. Whilst there is a top-level recognition of the need to standardise rules, greater effort needs to be made in ensuring that

those rules are understood and that public servants are confident in applying them to facilitate increased sharing of their data and a consequently broader application of it.

It is insufficient to create a website for indexing datasets if the level of engagement from government does not stimulate interest in the datasets it contains, promote an understanding of its benefits or encourage external parties to apply the data. In order to establish a culture that naturally considers how data could be re-used externally, the Panamanian government needs to think about how it brings civil society actors and private sector entrepreneurs together with public servants to explore how Panamanian government data can improve lives, whether through government policy, voluntary activities or commercial solutions to everyday problems.

Proposals for action
In light of the key assessments exposed above, which draw on the main findings and analysis included in Chapter 3 of this review, the Panamanian government should consider implementing the following policy recommendations:
8. In order to build a DDPS culture, Panama must **commit to developing a comprehensive data governance model** that identifies leadership and vision at both the central level and within each institution as well as addressing the capacity for implementation and the necessary regulations. In this vein, Panama should consider the following actions: a. Appoint a Chief Data Officer for the country as a priority to offer strategic responsibility for ensuring a cross-government vision exists for Panama to establish a data-driven culture that maximises the opportunities for applying data in policymaking, delivery and ongoing performance as well as OGD. b. Review and revise the national data strategy to move beyond OGD and establish a framework for data-related roles at an institutional level that ensures people are appointed and that their responsibilities reflect the ambitions of a DDPS. c. Ensure priority is given to roles like a Chief Data Officer, the enforcement of the Law No. 33 of 25 April 2013, the development of an institutional data strategy, the resourcing of data-related activities and compliance with data publishing guidance by holding institutional leaders accountable through personal objectives and performance reviews.
9. The Government Data Value Cycle provides a blueprint for handling data and creating public value. The flow of data is an **important enabler for policymaking, service delivery and the ongoing operations of the public sector**. The following actions should be prioritised: a. Develop a strategic and formalised way to report and reuse feedback and performance data within the public sector that allows for insights throughout the policy lifecycle and on an end-to-end basis within services. b. Identify a methodology for quantifying the baseline value of data as an asset within the Panamanian public sector in order to track its impact through business case and delivery processes c. Establish clear guidance around how data is handled within the Government Data Value Cycle (see Figure 3.6) d. Map the flow of existing data and needs for data within and between Panama's public sector. e. Develop the necessary technical tools such as catalogues, base registries, Application Processing Interfaces (APIs) and data standards. f. Unblock any legal obstacles to the once-only-principle being implemented. g. Require Chief Data Officers and Information Officers to set out their approach to applying data in order to generate public value in policymaking, service delivery and performance management.
10. The Chief Data Officer, ANTAI and the government's community of data practitioners should consider **how civil society actors and private sector entrepreneurs could be brought together** with public servants to explore how Panamanian government data can improve lives whether through government policy, voluntary activities or commercial solutions to everyday problems. As such, Panama should envision the following: a. Invest in the country's open data ecosystem, sponsoring competitions linked to specific policy issues/challenges or making particular funding streams available to encourage conversations between academics, civic-minded software engineers and the government. b. Build on the commitment to data protection enshrined in the new law by exploring whether this is recognised as equivalent to the European Union's General Data Protection Regulation and take the lead on initiating a conversation about regional data interoperability with other members of the e-Government Network of Latin America and Caribbean (*Red de Gobierno Electrónico de América Latina y el Caribe*, Red GEALC) c. Develop a skills and capability plan for data literacy, overseen by the Chief Data Officer, within the areas of data governance, the application of data to unlock public value (policymaking, service delivery and performance evaluation) and data for trust (transparency, data protection, managing consent and data ethics).

Service design and delivery

Service delivery is the central point of contact between a state and its citizens, residents, businesses and visitors. It has a major impact on the efficiency achieved by public agencies, the satisfaction of citizens with their government and the success of a policy in meeting its objectives. Alongside confidence in the integrity of government, the most significant indicators of trust in government are the reliability and quality of government services. The quality of these interactions between citizen and state shapes not only their experience of government, but influences the opportunities they access and the lives they build.

Increasingly, the digital transformation of our economies and societies is raising the expectations of citizens and businesses to be served by government in ways that meet their changing needs, leading to pressure on the public sector to improve service delivery. Doing so not only has the potential to increase the satisfaction of citizens with public sector organisations but can also strengthen their confidence in local and national governments. This trust in services and public sector organisations as service providers helps achieve policy outcomes focused on the well-being of citizens and the progress of societies.

In this context, users are unforgiving of services that compare poorly with experiences of high-quality delivery, whether from the private sector or elsewhere in government. To meet rising quality expectations, in the digital age, governments need to focus on understanding the entirety of a user's journey across multiple channels, as well as the associated internal processes, to transform the end-to-end experience. Doing this may require adjusting and re-designing processes, defining common standards and building shared infrastructure to create the necessary foundations for transformation as well as ensuring the interoperability of public sector organisations to facilitate the data flows that will make integrated, multi-channel services possible.

Service design and delivery in Panama

One of the most helpful initiatives in establishing the base on which Panama is developing its approach to service delivery is the *Panama En Línea* initiative. It is best understood as two separate projects working together. Firstly, *PanamaTramita* a listing of all government procedures that provides the necessary information for citizens to complete the interactions and make requests of government. Secondly, the technical platforms which allow for the development of government procedures, an authentication mechanism and the technical support for interoperability.

PanamáTramita (www.panamatramita.gob.pa) catalogues the 2 700 procedures which take place between citizens or business and central government, and another 1 463 with local government. Any new procedure or additional requirements must be justified before they are included within *PanamáTramita, which* prevents public officials requesting documents or creating new processes that are not already detailed, limiting the growth of bureaucracy. *PanamáTramita* provides the basis for prioritising 450 services to undergo digitisation according to a standardised business process management approach.

Several platforms have been implemented to provide support in different sectors. For example, in the health sector, there is a collaborative effort to digitise health records with participation from both public and private sector actors. A cloud-based local government resource planning (GRP) platform provided and managed by the National Authority for Government Innovation (*Autoridad Nacional para la Innovación Gubernamental*, AIG) has allowed municipal governments to focus on their core business rather than developing systems, with the result that 68 out of 80 local authorities are using it for their websites and can in future standardise their processes around the tools it offers.

Panama's future ambitions have been supported by the development of a national network for data and voice connectivity that provides 87% of the country's population with access to free Wi-Fi hotspots and more than 300 nationwide Internet centres (*InfoPlazas*). Nevertheless, there is the continued provision of services through telephone and face-to-face channels. The 311 Citizen Contact Center (*Centro de*

Atención Ciudadana 311) service provides a 24/7 telephone-based channel for assisting citizens with procedures on behalf of the whole of government.

With this foundation in place, the country can look to the future confident of addressing the next phase of their ambitions to transform services, while being careful to avoid creating new forms of digital divides. One challenge lies in how the services and technologies that AIG and the Panamanian public sector have already developed, interact with one other in providing a transformed experience of the state for businesses, citizens and visitors that responds to the diverse needs across society.

Internal culture of service delivery

The OECD peer review team was impressed with the implementation of a six-year project begun in 2012 to transform the experience of the justice system across several branches of government. This collaboration between AIG and all the necessary stakeholders saw a transformative approach taken to the end-to-end experience of justice. By disaggregating that complex process, it has been possible to gradually address different elements with the result that, by 2018, they had transformed not just existing digital elements but also the issues related to physical infrastructure and analogue interactions in the entire experience of justice. There is no longer any paper involved and, according to information obtained during the fact-finding interviews, the judicial system has reduced the time involved by 96%. This kind of end-to-end transformation that addresses the entirety of a service in both its back-office and public-facing experiences provides an aspirational model for the rest of Panama and other countries.

However, apart from this excellent example from justice, the language of service design appeared to be absent from the way in which public servants in Panama discuss their approaches to transform service delivery. The dominant themes of delivery in Panama are centred on digitisation and/or automation of existing processes rather than on users and their needs. Consequently, there is greater focus on the technologies that can be deployed rather than the transformation of the underlying services. This leads to the proliferation of apps and different technologies responding to particular problems from a technology point of view rather than considering critical policy actions, such as implementing the once-only principle for data exchange or a channel-agnostic approach to services, to reflect the diversity of the country's population and better serve their needs.

The focus on technology means that even a conversation about the role of digital identity tends to consider how to digitise an analogue process rather than exploring the transformative impact which digital identity solutions can have on avoiding particular steps, reusing existing data sources and rethinking the way in which a citizen or business might interact with the state. The challenge for Panama is to redesign the state in a way that recognises the context of its citizens, not simply to implement technology and digitise interactions.

External interaction with those outside government

The voice of the private and public sectors is represented through an annual public-private dialogue between AIG and the Center for National Competitiveness (*Centro Nacional de Competitividad*, CNC) facilitated as part of the National Competitive Forum (*Foro Nacional para la Competitividad*), as well as special working groups and a study commissioned by AIG to CNC. However, the OECD peer review team found little evidence of making space for actively involving citizens in establishing either the needs or contributing to the ongoing design and development of the services they need to access. The notable exception was the citizen survey commissioned by CNC in identifying the priorities for simplification.

This is partly due to the way in which the priorities for transformation are being set. With Panama heavily influenced by external indicators and benchmarks focused on the needs of business, or the challenges facing government, much of the activity necessarily responds to these challenges first. As a result, whilst

there is an important recognition of the needs of the public, the "government to citizen" dynamic is less well represented and certainly not influencing the priorities for the transformation of services.

This lack of decision-making based on an understanding of the needs of citizens highlighted that government tends to be more reactive to needs that come up in the course of implementing its agreed direction rather than proactively focusing on what is important and strategically thinking about how best to deliver the transformation of Panama's public services in general.

Several stakeholders interviewed during the peer review mission to Panama in November 2018 recognised that awareness of some of the services and transformation achieved by the Panamanian government is low amongst the public. One of the benefits of increasing the involvement of citizens is generating the momentum for adoption but equally important is capturing an understanding of the needs to which these existing services have been responding. Building a culture that places users at its heart and is driven by their needs will ensure that the government's efforts to transform services are well received by the public and promote public trust.

The nationwide *InfoPlazas* network not only provides an important route to accessing services for citizens throughout the country but could offer the ideal setting in which to involve local communities and citizens in the discovery of needs and development of solutions to their problems. The Inter-American Development Bank is currently supporting a programme of work using the *InfoPlazas* network to help increase awareness of *Panama en Linea* and train people in its usage. This is an important initiative and supports the view of the OECD peer review team that the *InfoPlazas* network should be seen as a valuable piece of existing infrastructure to further support digital literacy, entrepreneurship and other cross-government agendas.

There are opportunities for the Panamanian government to develop partnerships with research, further education and private sectors both in the country and across international borders. Several of the world's leading technology companies recruit remote workers in Panama and the ambition to become a logistical hub for the region's humanitarian aid sector reflects the opportunities of international organisations being based in the country. Further supporting the ambition to see Panama become a global "digital hub" is its advanced Internet connectivity infrastructure, which includes six fibre optic submarine cables. In this sense, Panama should consider developing programmes that attract foreign digital, data and technology companies to base themselves in the country.

Resources and enablers that support delivery

AIG has developed several shared services and platforms with particular success in adoption of the 311 Citizen Contact Centre, voice and data network connectivity and the government private cloud infrastructure. However, it is important that sector-specific interventions do not happen in isolation but are delivered as part of a calculated and planned strategic approach to providing transformed services at the macro level. Else, there is the potential to create a myriad of different legacy platforms requiring rationalisation in the future.

The 311 Citizen Contact Centre provides a single front door to the Panamanian government but the proliferation of platforms behind that is contributing to a fragmented user experience. There are competing channels whether online, through apps, over the phone or in person for different services indicating that the importance of designing good end-to-end services is not always understood at an institutional level.

Work on the various platforms is a clear indicator of a commitment to developing mechanisms that make interoperability possible across the Panamanian public sector but this is still nascent. Indeed, although Panama has the once-only principle enshrined in Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[19]), the OECD peer review team were informed on multiple occasions of services where citizens or businesses would need to provide information already held by one part of government to another in order to address their issue. Greater support, whether through legislation, increased mandate or political will

towards the ongoing efforts of AIG is needed for interoperability to be assured between platforms and government organisations. An increase in the integration of data and systems will enable Panama to consider the design of end-to-end services that respond proactively to the needs of citizens but will also highlight the challenges of legacy technologies.

An important area for Panama's focus is identity. Panama has an established physical identity mechanism and a law that allows for the use of an electronic signature. However, efforts to implement digital identity as an enabler need to be revisited. Although a technical solution is under consideration, there lacks a clear strategic vision for how it would be adopted across Panama with risks that the implementation of a technical solution is being prioritised over the design of an identity service. Identity highlighted some of the challenges with the existing model of governance for digital government in Panama. Identity is the responsibility of the Electoral Court of Panama *(Tribunal Electoral de Panamá)* because they are the public sector organisation holding analogue identity records and with responsibility for analogue identity mechanisms. Unfortunately, due to the electoral period, it was clear that the Electoral Court had not prioritised the provision of a digital identity (DI) platform designed to support the transformation efforts of other parts of government with challenges in communication and the technical approach being taken. However, it has invested in a pilot to be resumed for implementation on a larger scale, as well as a new biometric platform to be shared with other stakeholders. With DI so integral to the transformation of the state, more involvement from AIG could be relevant. In the case of DI and other digital, data and technology initiatives, AIG acts on a consultative and co-ordinating basis. In certain cases, it may be beneficial for this central expertise to assume increased responsibility for the strategic outcomes associated with the design, delivery and implementation of critical initiatives.

The role of AIG in offering guidance and building capability remains important. For example, questions of security or cyber protection that need to be emphasised will not be solved through the development of another technology platform but through the cascaded expertise of AIG, responsible for the Cyber-security Strategy and the government's Computer Security Incident Response Team (CSIRT). The consensus model currently in place is good and has clearly been successful but there is a risk that examples of good practice do not contribute to a coherent and pan-governmental transformation.

AIG has been effective in co-ordinating the Chief Information Officers from across Panama's public sector but in certain cases there needs to be bolder leadership that moves beyond the softer consultancy advice and guidance, to support and enforce the strategic delivery of an ecosystem that can foster the transformation of Panama government services.

Emerging technologies and innovation

As the digital government agenda in Panama matures, what was once "innovative" becomes more of a mainstream activity. For AIG, this presents a challenge in balancing the need for a focus on operational excellence and continuous improvement of government services with the horizon-scanning role of stimulating and supporting innovation. The plans to build a modern headquarters for AIG as a *Center of Excellence for Digital Government and Innovation* at the *Ciudad del Saber* (City of Knowledge) and an ongoing openness to further its role in government innovation through a multi-stakeholder approach, partnering with academic and private sectors, indicates that there is a solid foundation for handling that challenge and contributing to the wider digital ecosystem of the country.

Emerging technologies such as distributed ledgers or artificial intelligence were mentioned in a handful of instances. This reflects the current focus of the Panamanian public sector on delivering the fundamentals of digital transformation before being seduced by the promise of the future. Nevertheless, the OECD peer review team did not find a co-ordinated or strategic view on the role of innovation in the transformation of how Panama delivers services rather than implements technology.

As AIG matures its approach to innovation there are some important sectors to work with. The Panama Canal and the other members of the sea, land and air logistics cluster are exploring whether emerging technologies can add value to their interactions with their customers and stakeholders. The importance of Panama to global trade provides an important opportunity for Panama to develop expertise, stimulate innovation and incubate new businesses. Building public-private partnerships with this sector, and others, led by the Logistics Cabinet (*Gabinete Logístico*) could provide the necessary funding and expertise to explore other areas of transformation with emerging technology that may otherwise be impossible. Equally, the role of multilateral funding organisations in championing and supporting experimentation with emerging technologies could be a useful area to pursue in encouraging an innovative approach to the delivery of public services in Panama and beyond.

As Panama investigates the opportunities of developing and implementing emerging technologies, the legal framework of the country will have a significant influence. Existing, and somewhat outdated or conflicting, legal frameworks are often not conducive to responding to the changing priorities of society because they are specifically tailored towards the particular industries, technologies, processes or analogue systems that were available at its time of conception. Nevertheless, in the case of Panama, the regulator should be encouraged in its efforts to regulate services rather than specific technologies. This focus on the outcome rather than on technologies can set an important precedent for the way in which Panama is able to respond to future technological opportunities.

Cross-border services

There is no visibility in strongly promoting Panama's digital, data and technological competencies abroad. Several areas within Panama's economy and society offer interesting opportunities to stimulate start-ups and model transformed delivery of service whether in trade, tourism or other services based on its already established base of multinationals and its privileged connectivity. Such lessons could be shared regionally and internationally.

Although Panama is interested in the comparison of its performance against its neighbours, this has not yet extended to exploring how the country thinks about services that cross the border. This gap is particularly noticeable in the approach to immigration services. Whilst this is not perhaps a service that would be a priority when seen through the eyes of Panamanian citizens, the process by which someone receives permission to work impacts on several hundred people a day and generates significant internal effort. The 12-step process takes one to two months to complete and can only be initiated, in person, once they are physically in the country.

Panama is clearly a leader in the regional discussion on digital transformation with their presiding of the Latin America and Caribbean e-Government Network (Red GEALC) and hosting the V Ministerial Meeting of the Red GEALC in 2018, a demonstrable success. This role affords the country an opportunity to help define and shape a cross-border strategy for the Central-American region, focused on creating opportunities for non-Panamanian customers (citizens, companies and other governments) to do business, travel or exchange information in Panama. Such an approach should also champion how Panamanian citizens and businesses can be digitally active abroad.

Adopting a standards-based approach to these activities would mean that these benefits were not limited to the Central-American region. As seen in the recent Free Trade Agreement between the European Union and Japan, each party having a clear and effective approach to data protection has allowed for mutual recognition of those regimes and the opening up of particular industries to trade that might otherwise have been limited. As Panama deploys its "digital hub" strategy, develops its own data protection frameworks, builds advanced data and interconnectivity infrastructure, and expands its digital economy, the opportunity for Panama to provide services across borders could be truly global.

Proposals for action

In light of the preceding assessments, which draw on the main findings and analysis of Chapter 4 of this review, the Panamanian government could consider implementing the following policy recommendations:

11. It is critically important for Panama to **establish a design culture that places users at its heart and is driven by their needs** within its institutions as well as at AIG. Such an approach will help Panama develop a joined-up, channel-agnostic approach to services that respond to the context of citizens and maximise the value of Panama's Government as a Platform approach. Panama should consider the following actions:
    a. Provide requisite training for existing public servants to root them in service design practices.
    b. Deliver services as part of a calculated and planned strategic approach to providing transformed services across the government rather than sector-specific interventions taking place in isolation.
    c. Adopt a bolder, more directive set of strategic activities that develop and enforce the delivery practices required to transform Panamanian government services.
12. Panama needs to be clear about how the services and technologies that have already been developed, and which are planned for the future, interact with one another and provide the means for **designing a fully joined-up, whole-of-government experience for businesses, citizens and visitors.** In this sense, the following recommendations should be considered:
    a. Considering the success of the 311 Citizen Contact Center, *PanamaTramita*, the *InfoPlazas* and MuNet there is an opportunity to pursue a single government service delivery brand across multiple channels to consolidate and rationalise the web and physical presence of public sector institutions.
    b. Develop a clear strategy for digital identity to precede the development of applications and platforms.
    c. Remove any ongoing barriers to the implementation of the once-only principle by developing the existing legal framework for interoperability and the technology to support it.
13. As AIG and the Panamanian government **develop their service design culture and put citizens and their needs at its heart,** they will need to consider the following areas for improvement:
    a. Develop an understanding of the needs of citizens that allows public sector organisations to proactively focus on solving the most important problems in order to maximise public value.
    b. Provide an online manual of good service delivery practices, developed collaboratively by the different professional communities, to support the development of service design capability within the Panamanian public sector.
    c. Consider developing a Service Design and Delivery Standard appropriate to guiding the activity of disparate organisations to ensure consistency of experience and quality of outcomes.
    d. Develop the *InfoPlazas* and national Wi-Fi networks as valuable pieces of infrastructure that can support digital literacy, entrepreneurship, user research and other cross-government agendas.
14. **Supporting experimentation with emerging and disruptive technologies** could be a useful area to pursue in encouraging an innovative approach to the delivery of public services in Panama. Considering this, Panama should continue to:
    a. Explore ways to partner with and stimulate academic and private sectors to develop a digital ecosystem that can provide the basis for anticipating and experimenting with emerging technologies to solve public sector challenges.
    b. Support and strengthen technology interventions targeting tourism, ecology and trade in the context of the urgency of climate change and create and adopt an environmentally friendly policy for all public sector investment and management of procedures.
    c. Shift the focus of regulation away from technologies and towards services and outcomes to ensure Panama is well placed to respond to future opportunities.
15. With the ongoing **commitment to Panama as a "digital hub",** the following actions should be considered:
    a. Encourage inward investment from digital, data and technology companies.
    b. Continue to work with the other members of Red GEALC to help define and shape a cross-border strategy for the Latin America and Caribbean region that creates opportunities for non-Panamanian customers (citizens, companies and other governments) to do business, travel or exchange information in Panama whilst seeking the same for its citizens and businesses abroad.

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1 Strengthening governance

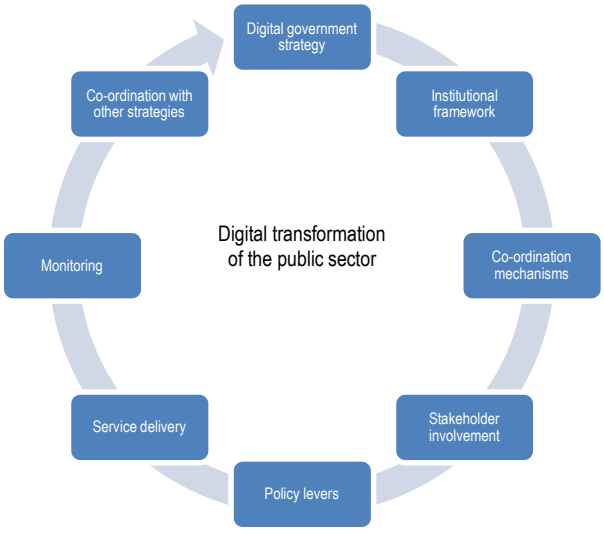
This chapter analyses the governance of the digitalisation policies in the Panamanian public sector, based on the analytical framework provided by the OECD Recommendation of the Council on Digital Government Strategies and the experiences and practices of a number of OECD member and non-member countries. The chapter reviews the digital government strategy – Digital Agenda 2014-2019 Panama 4.0, considering its strategic lines and values, key actions and goals. It then focuses on the institutional framework in place to drive the digital transformation of the public sector, namely the mandate and role of the National Authority for Government Innovation (AIG). A third section looks at the mechanisms in place to coordinate public sector efforts and assure the enforcement and compliance of the policy across different sectors and levels of government. The last section focus on the legal and regulatory framework as a critical building block for a sound digital government policy.

Introduction

Digital technologies are rapidly disrupting how economies, societies and governments operate. The cross-cutting impact of digitalisation can be observed in the large advances in information and data processing, impressive new levels of connectivity and extraordinary opportunities for sharing and collaboration. Citizens are changing the way they live and work, and doing business is almost unimaginable without digital technologies, challenging governments to keep pace. The public sector is forced to rethink the way its constituents need to be served, based on raised expectations in terms of service quality that include dimensions such as efficiency, effectiveness, simplicity, openness, transparency and accountability (OECD, 2017[1]).

In order to mobilise the strengths and obtain the commitment of different sectors and levels of government, the proper governance approaches need to be in place to secure policy efficiency and long-term sustainability. Systems thinking approaches are required to ensure coherence and avoid the typical gaps and overlaps that result from silo-based and vertical-thinking policy visions and actions, simultaneously connecting the digitalisation of the public sector efforts to broader public sector goals and agendas. Policies for a digitally enabled state require leadership and political support, co-ordination and clear definition of mandates, policy levers that can ensure whole-of-government implementation and monitoring mechanisms to access the outputs, outcomes and impacts (OECD, 2016[2]).

Figure 1.1. Governing the digital transformation of the public sector: Dimensions of analysis



Source: Based on OECD (2016[2]), *Digital Government in Chile: Strengthening the Institutional and Governance Framework*, https://dx.doi.org/10.1787/9789264258013-en.

The governance of digital government policies is recognised by OECD member and non-member countries as a central issue that in its constant evolution requires ongoing efforts to achieve sound policy implementation. The *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[3]) highlights several governance dimensions to consider when analysing and supporting a country's efforts in public sector digitalisation (see Figure 1.1). The absence of a one-size-fits-all approach determines that these dimensions be considered in light of contextual factors such as the institutional culture and legacy, the existing political support and mandate, as well as the capacities and capabilities of the different national environments.

This chapter analyses the governance of digital government in Panama. The analysis will start by observing and discussing the digital government strategy in place, including its strategic lines and values, as well as its key actions and goals and the alignment with the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[3]). A second section will analyse the mandate, competencies, role and practices of the public sector institution responsible for leading the digital government policy in Panama. The third section of the chapter will focus on the co-ordination and compliance mechanisms in place to secure coherent and sustainable digital government development in the country. The last section concentrates on the legal and regulatory framework in Panama, assessing the current panorama and pointing out directions for its further development, namely through the development of citizens' digital rights.

Driving the digital transformation of the public sector

Strategies to build a digital government

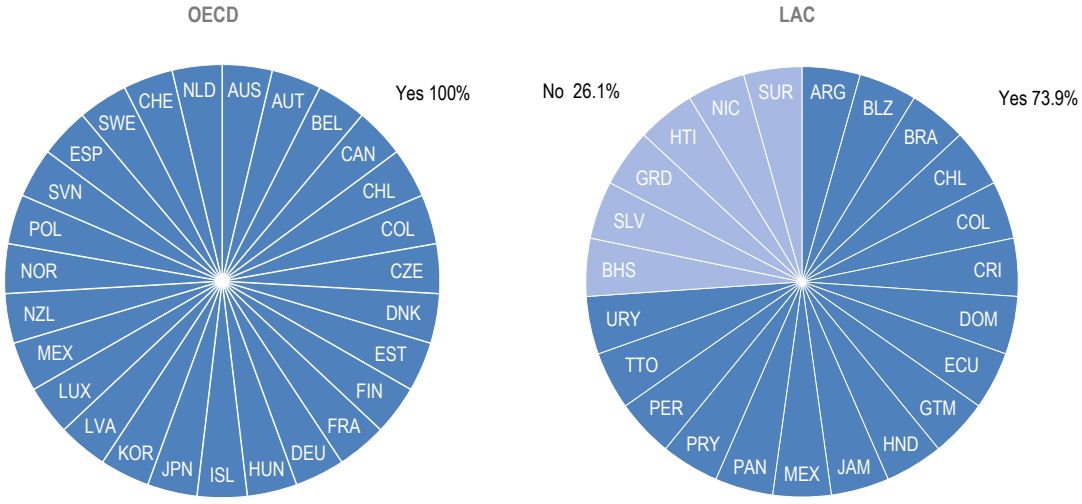
Digital government strategies are critical policy instruments to frame governments' actions for the digitalisation of the public sector. Adapted to the country-specific institutional context and building on prior efforts, strategies are able to set goals and align objectives, define priorities and indicate implementation-oriented actions across the administration. In an era where digital technologies are being rapidly embedded into the everyday lives of citizens, businesses and governments, digital government strategies are required to embody the important change of paradigm brought by the digital transformation:

> *"The challenge is not to introduce digital technologies into public administrations; it is to integrate their use into public sector modernisation efforts. Public sector capacities, workflows, business processes, operations, methodologies and frameworks need to be adapted to the rapidly evolving dynamics and relations between the stakeholders that are already enabled – and in many instances empowered – by the digital environment." (OECD, 2014[3])*

In order to be properly grounded in the national context, digital government strategies are required to reflect the aspirations and different views of the ecosystem of stakeholders which can assemble and mobilise commitments and efforts towards a digitally enabled state. The level of openness, transparency and inclusiveness of the strategy's design, development and monitoring process will determine the level of collective willingness to support its effective implementation. Sound collaborative processes that involve stakeholders from the public and private sectors, academia and civil society are able to guarantee both the alignment of the strategy with the expectations and concrete needs of the context to which it applies and promote shared ownership of, and common responsibility for, its goals and the actions necessary to achieve them.

Beyond mobilising collective willingness, digital government strategies should be able to count on the necessary policy mechanisms that can secure their effective implementation, including institutional setup, political leadership, required policy levers and resources, as well as monitoring tools. The strategy can also play an instrumental role in reinforcing some of these elements of the governance. The capacity of governments strengthen the needs and define the key elements when defining the governance of digital government will substantially determine its future success. On the other hand, the digital government strategies need to be firmly aligned, integrated and embedded in broader public sector modernisation efforts, guaranteeing that digital government goals and actions are truly cross-cutting and deeply rooted in different policy streams. In other words, digital government strategies should not be isolated policy instruments understood as an independent policy stream, but an important and transversal lever for better government, sustainable economic development and improved social well-being.

Figure 1.2. Existence of a national digital government strategy in OECD countries in the Latin America and Caribbean (LAC) region



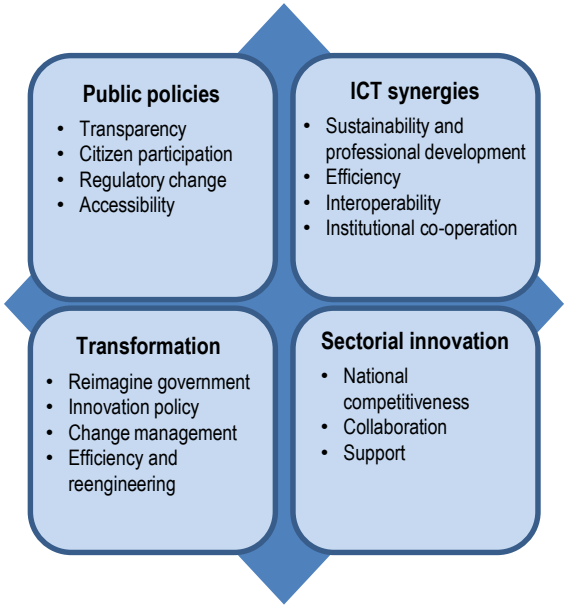
Source: OECD (2014[4]), *Survey on Digital Government Performance*, https://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796 (accessed on 16 July 2018); OECD (2016[5]), *Government at a Glance: Latin America and the Caribbean 2017*, https://dx.doi.org/10.1787/9789264265554-en.

Reflecting the increasing commitment of governments around the world to embrace the digital transformation of their public sectors, all OECD member countries that responded to the *OECD Digital Government Survey* (OECD, 2014[4]) confirmed having a digital government strategy. The same pattern can be observed in the Latin America and Caribbean (LAC) region where 17 out of 23 countries (73.9%), including Panama, have a digital government strategy in place (see Figure 1.2) (OECD, 2016[5]).

Digital Strategy 2014-19 PANAMA 4.0

In the middle of 2014, a first version of the national ***Digital Strategy 2014-19 PANAMA 4.0*** was launched as a framework to promote digital transformation. Meant to mobilise the entire Panamanian public administration, this first version had a clear purpose of reinforcing the institutional mandate of the entity that leads digital government development in Panama – the National Authority for Government Innovation (*Autoridad Nacional para la Innovación Gubernamental*, AIG) (see Chapter 1: The National Authority for Government Innovation). Reflecting the national government willingness and commitment to having a common and strategic policy to promote the use of digital technologies for the economy and society and ensure administrative modernisation, the strategy covered critical aspects such as governance of information technology (IT) systems, architecture and improved interoperability. The document also prioritised the incorporation of sectorial and inter-sectorial projects of the Panamanian administration, contributing to overall policy coherence and improved co-ordination across the public sector (AIG, 2016[6]).

Figure 1.3. PANAMA 4.0: Strategic lines and values



Values:

- Focus on **national competitiveness**, through transparency and elimination of bureaucracy.
- **Transparent, open and proactive government** for citizens and society.
- Improvement on management's **efficiency and savings**. The management of AIG saves costs for the nation's government.
- Support for the **sustainability** of initiatives and for the ICT units of each entity.
- Professional development through career plans and reduction of the digital gap.

Source: AIG (2016[6]), *Agenda Digital 2014-2019 - Panamá 4.0*, http://innovacion.gob.pa/descargas/Agenda_Digital_Estrategica_2014-2019.pdf.

A second and updated version of the digital strategy was launched in January 2016, securing better alignment with the objectives and goals of the country's international commitments, such as the United Nations Sustainable Development Goals, the Digital Agenda for Latin America and the Caribbean (*Agenda Digital para América Latina y el Caribe*, eLC 2018) (CEPAL, 2015[7]) and the e-Government Network of Latin America and the Caribbean (*Red de Gobierno Electrónico de América Latina y el Caribe*, Red GEALC). The updated version of the strategy also included more recently developed projects from Panamanian public sector organisations relevant to the overall digital government context.

The digital strategy is based on several strategic lines and values that reflect the government vision of digital technologies, not only as tools to promote efficiency but mostly to transform the public sector, the economy and society through reinforced transparency, openness, inclusion, advanced services and sustainability of government action (see Figure 1.3). Building on the abovementioned goals that are substantially aligned with the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[3]), the digital strategy defines key action lines and concrete goals that go beyond the government cycle of five years. For instance, the document establishes as goals for 2019 an information and communication technology (ICT) observatory, public spaces to access the Internet and digital literacy support (*Infoplazas*), as well as foreseeing goals for 2024 such as the online availability of all public services with authentication through a digital identity mechanism or the certification of all ICT services from key institutions with ISO 20000 and ISO 27000 standards. The definition of different timelines and goals in the strategy reflects a policy approach that is not limited to the government's political lifecycle, trying to commit digital government policy action beyond it, with expected positive outcomes in terms of continuity and sustainability of projects and initiatives.

Box 1.1. PANAMA 4.0 – Model for reporting and project implementation

A clearly defined reporting model envisaging a coherent implementation of the defined policy initiatives across the administration supports the digital strategy in Panama. Every year, central public sector organisations in Panama are required to deliver a group of five documents:

- Institutional Digital Agenda (*Agenda digital institutional*) – Containing information about the public sector organisation's ICT roadmaps in the short, medium and long term.
- Plan for the Simplification of Services and Administrative Processes (*Plan de simplificación de trámites y procesos administrativos vinculados a los usuarios*) – Containing the processes and services to be improved for a more efficient, clear and less bureaucratic relation with citizens and businesses.
- Plan of Systems (*Plan de Sistemas*) – Containing the plan of the Chief Information Officer (CIO) for the sustainability of the institutions over five years, pointing out needs in terms of ICT infrastructure, plans for the acquisition of software, implementation services and other ICT management services.
- Annual Operational Plan (*Plan Operativo Anual*) – Containing approved projects with confirmed budgets.
- Request Evaluation System (*Sistema de Evaluación de Solicitudes*) – Evaluating requests for ICT services from government agencies.

Source: AIG (2016[6]), *Agenda Digital 2014-2019 - Panamá 4.0*, http://innovacion.gob.pa/descargas/Agenda_Digital_Estrategica_2014-2019.pdf.

The strategy defines a very clear model for reporting and project implementation across the different sectors of the government (See Box 1.1). Although the Panamanian government, and more specifically AIG, need to ensure that the abovementioned model does not result in an overload of administrative work for public sector institutions, its outreach in terms of coherent and sustainable planning, effective co-ordination and monitoring potential is very significant.

Alignment with overarching and specific policy goals

The Digital Strategy 2014-19 also presents a substantial alignment with broader public policy goals, demonstrating that it is part of the economic and social development agenda of the country.

The **National Competitiveness Plan** (*Plan Nacional de Competitividad*) identifies actions that can support the country's economic development, to be jointly co-ordinated and executed by the government, the private sector and civil society. With a business-oriented focus and reflecting the participation of AIG in its conception, the plan foresees several digital government measures. The online creation of companies, the development of a system of interoperability and data portability and the implementation of digital certificates and signatures in key public entities are some of the objectives foreseen to reduce bureaucracy and enhance the business environment in the country. (Ministerio de la Presidencia, 2014[8])

Additionally, two specific plans can be highlighted as relevant for Panama's path towards a digital government. Approved in 2013, the **Strategic Plan for Broadband of the Republic of Panama 2012-22** (*Plan Estratégico de Banda Ancha de la República de Panamá*) has a specific section dedicated to the benefits of broadband in the public sector. The plan foresees initiatives to be prioritised by the government through AIG (e.g. promote the implementation of the cybersecurity plan, increase the use of social networks in the interactions of the public sector with citizens) (AIG, 2013[9]). On the other hand, the **Strategic Agenda for a Mobile Government** (*Agenda Digital Estratégica M-Gobierno*) prioritises the

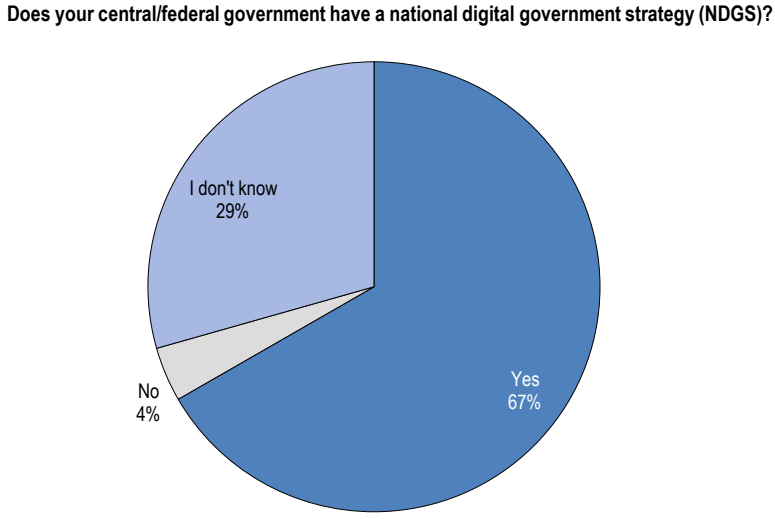
development of services in a mobile format in the areas of education, health, transport and justice, taking advantage of the high penetration rate of mobile phones in the Panamanian population (AIG, 2015[10]).

Perceptions on the digital government policy across the administration

The acknowledgement and positive perceptions of the digital government policy work underway are fundamental to determine how involved, committed and aligned the different sectors of the administration are to the digital transformation of the public sector. The levels of awareness of the ecosystem of stakeholders, namely in the public sector, demonstrates the level of mobilisation around the policy but also the degree of shared ownership and joint responsibility felt across the administration regarding its implementation and development.

When questioned about the existence of a national digital government strategy, two-thirds of the public sector organisations that answered the Digital Government Survey of Panama responded in a positive way (Figure 1.4). The level of recognition of the Digital Strategy 2014-19 PANAMA 4.0 is high. Nevertheless, a significant number of institutions that answered the survey did not know of its existence.

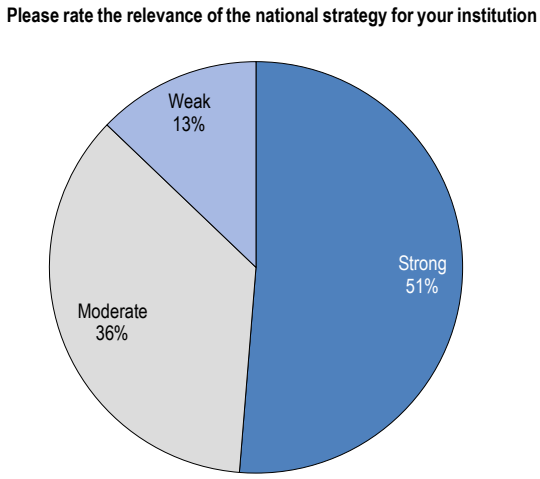
Figure 1.4. Recognition of the existence of a digital government strategy among Panamanian public sector organisations



Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

When required to rate the relevance of the national digital government strategy for their activities, 51% of Panamanian public sector organisations that acknowledged the existence of the strategy considered it “strong” and 35% “moderate”. The remaining 13% considered it “weak” (**Figure 1.5**). The vast majority of institutions that underlined the relevance of the national digital government strategy for their activities demonstrate the commitment and determination of the Panamanian government in driving the digital transformation of the public sector, putting in place mechanisms that can ensure its coherent development.

Figure 1.5. Relevance of the digital government strategy for Panamanian public sector organisations



Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

The co-ordinated involvement of public sector organisations in the design of the digital government strategy is useful for guaranteeing the incorporation of the expectations of the ecosystem of stakeholders, securing improved alignment with their needs and meeting existing demand in the country. Collaborative approaches are also useful for shared ownership of, and responsibility for, the implementation of the strategy. The Simplex + programme in ***Portugal*** provides a good example of a wide collaborative approach in the development of a policy strategy, combining online and face-to-face mechanisms that allow the involvement of different public sector organisations, private sector, academia and civil society organisations (AMA, 2019[12]). The Digital Governance Strategy of ***Brazil*** was also developed following a wide consultation process (OECD, 2018[13]).

In line with the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[3]), several meetings were held with stakeholders to support an open and inclusive formulation of the Digital Strategy 2014-19 PANAMA 4.0. The main demands and expectations where highlighted in the strategy and **Table 1.1** showcases that transparency, digital government services and interoperability were among the main requests received by AIG.

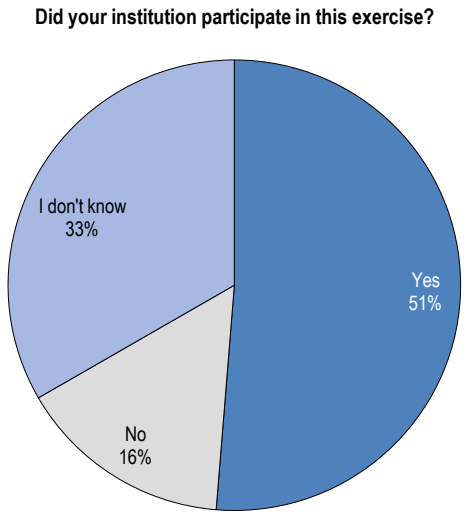
Table 1.1.Main demands of the stakeholders for the Digital Strategy 2014-19

Main demands	
Transparency	Promotion of open government, open data and neutral technological policies.
Digital government services	Digitisation and simplification of public services for improved efficiency and convenience for citizens and businesses.
Planning	Support for the institutional digital agendas, development of shared services, improved procurement and better harmonisation of standards.
Capacity building	Digital skills training and competitive ICT careers to respond to the increasing demand across the public sector.
Interoperability	Connection of public databases, systems and applications through the required governance and interoperability platform.
Standards	Necessary update of the legal and regulatory framework to better respond to the needs of a digitally transformed economy, society and government.

Source: AIG (2016[6]), *Agenda Digital 2014-2019 - Panamá 4.0*, http://innovacion.gob.pa/descargas/Agenda_Digital_Estrategica_2014-2019.pdf.

When questioned about their involvement in the development of the national digital government strategy/policy, 51% of the institutions that answered the Digital Government Survey of Panama confirmed their participation, against 31% that responded not knowing it and 16% giving a negative response (**Figure 1.6**). Although the results are positive, there seems to exist some room for improvement for effective co-ownership of the strategy.

Figure 1.6. Co-ordinated development of the digital government strategy/policy with Panamanian public sector organisations



Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

Embracing strategic policy coherence

Since 2014, Panama has benefitted from a digital government strategy that guided policy action across different sectors and levels of government. The strategy, its values and goals are well connected with broader government agendas and with other relevant line strategies or more specific policies. The relevance of the strategy in promoting transparency and accountability of government action was particularly highlighted during the peer review mission and within the Digital Government Survey of Panama. The importance given to these dimensions reflects some of the legacy attitudes in Panama but the building blocks of mature digital government are in place for supporting a new focus on more strategic issues. As a mechanism to reinforce the importance of the strategy and guarantee its alignment with the country's needs, dimensions such as user- and data-driven approaches could be prioritised to secure a robust transformation of the public administration.

The reinforcement of those dimensions would allow the government to move beyond merely ranking well in international indexes and towards embracing the goal of improved digital government maturity. Through the utilisation of national and local social and economic drivers, these dimensions would be able to mobilise the different sectors and levels of government but also the private sector, civil society and academia. The involvement and collaboration with the private sector, academia and civil society organisations are critical for improved alignment and sustainability of the digital policy. In this sense, although the percentage of institutions involved in the development of the strategy constitutes a majority, the answers obtained in the Digital Government Survey of Panama demonstrate that some room for improvement still exists to reinforce the shared ownership and responsibility for its implementation.

More than being assumed as the policy agenda of AIG, the national digital government strategy should be understood as a collective vision for the future of Panama with digital technologies making a critical contribution to the development of a user-driven government, a competitive and inclusive economy and sustainable societal well-being.

Leadership for sound transformation

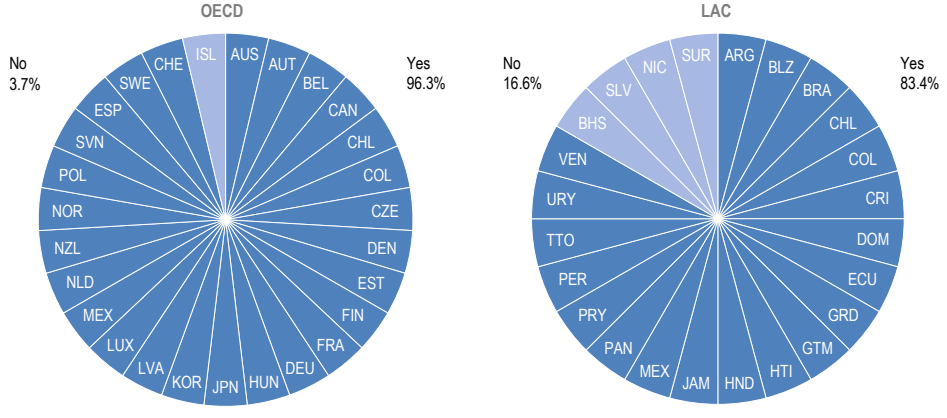
The importance of clear leadership

Public governance refers to "the formal and informal arrangements that determine how public decisions are made and how public actions are carried out, from the perspective of maintaining a country's constitutional values in the face of changing problems, actors and environments" (OECD, 2005[14]). This institutional setting, based on formal and informal arrangements, defines and regulates how stakeholders interrelate and co-operate in the decision-making process, take part in the policy implementation and assume the delivery of public services (OECD, 2018[15]).

In line with what can be observed in several other critical policy areas, digital government policies require cross-cutting co-ordination, management and implementation to produce positive outputs, outcomes and impacts. To secure sound governance of digital government and the necessary synergetic policy co-operation, the OECD Recommendation of the Council on Digital Government Strategies (2014[3]) underlines the requisite of setting clear institutional roles in the public sector able to dissipate doubts or avoid lack of definitions about the mandates of the stakeholders involved.

Established roles and responsibilities and a clear consensus about leadership and institutional mandates are critical prerequisites for a sustainable and coherent digital transformation of public sectors. The existence, location, delegation of responsibility, attributions and relevance attributed to the public sector organisation responsible for leading and co-ordinating digital government policies by the ecosystem of stakeholders are central dimensions to consider when analysing the institutional frameworks in place. The role of this institution is fundamental to secure the proper leadership and the executive co-ordination of efforts across sectors and levels of government, assuring a shift from agency-thinking and government-centred approaches to systems-thinking and citizen-driven imperatives in policymaking and implementation processes (OECD, 2016[2]).

Figure 1.7. Existence of a digital government co-ordinating public sector organisation in OECD countries in the LAC region



Source: OECD (2014[4]), *Survey on Digital Government Performance*, https://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796 (accessed on 16 July 2018); OECD (2016[5]), *Government at a Glance: Latin America and the Caribbean 2017*, https://dx.doi.org/10.1787/9789264265554-en.

Demonstrating that governments around the world are progressively adapting the institutional setups to better drive the digitalisation of their public sectors, almost all OECD member countries that responded to the *OECD Digital Government Performance Survey* have a central co-ordinating public sector organisation that leads the digital government policy (OECD, 2014[4]). The panorama in the LAC region is not substantially different, with 21 out of 24 countries (83.4%), including Panama, confirming the existence of a public sector organisation with the aforementioned leadership role for digital government policy.

Very diverse models can be found across countries regarding this public sector organisation leading digital government. These reflect the institutional legacy, legal and regulatory context or the form of government in place (e.g. unitary state vs. federation). Although some tendencies and trends can be discussed on the benefits and challenges of the different models, the diversity confirms that a one-size-fits-all model is not suitable. On the contrary, approaches that work well in a specific national context have proven counter-effective in others. For instance, countries such as Australia, Japan, Portugal, the United Kingdom, the United States and Uruguay have placed their co-ordinating public sector organisation 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. Another frequent institutional set-up consists of placing the public sector organisation that leads the digital government policy under a co-ordinating ministry. Canada (Treasury Board of Canada Secretariat), Denmark (Ministry of Finance) and Spain (Ministry of Finance and Public Administration) have followed this second approach is typically able to strongly link digital government policies with broader public sector reform agendas (OECD, 2016[2]).

More than its organisational model the role of the public sector organisation providing leadership for digital transformation of the public sector depends on critical variables such as political support, an institutional mandate, having the necessary co-ordination mechanisms in place, available policy levers and the resources (financial and human) that can be mobilised for effective implementation of the digital government policy (see Chapter 2).

The National Authority for Government Innovation

In Panama, AIG is the public sector organisation responsible for the design, development, delivery and monitoring of the digital government policy[1]. The Authority has, in this sense, wide responsibilities in the mobilisation of the Panamanian economic, social and government agents to seize the opportunities and tackle the challenges of digital transformation. Its scope of action is significantly broad, acting not only as a leader for digital government, public service delivery, public sector innovation and administrative simplification but also as a catalyst for the role of digital technologies in the country's economy and society. In other words, within the Panamanian context, AIG truly embodies the national government's efforts and commitments for the digital transformation age through all three branches of government, including local government (**Table 1.2**).

Table 1.2. The vision and functions of AIG

Vision	Functions
Turn the government into a world-class competitive institution, transforming information and communication technologies so that they are accessible to the population, improve efficiency and simplify processes.	Plan and formulate biennial policy plans and national innovation plans for the transformation and modernisation of the state.
	Co-ordinate the development of initiatives related to the use of ICT by public entities.
	Periodically supervise and inspect the state's technological systems to verify compliance with standards or identify conditions that need to be corrected through specific actions.
	Organise and execute training plans and programmes for the staff of ICT departments and units of public entities.
	Provide advisory and consulting services to public entities on the design, development, execution, reversion of systems or contracting of computer goods and services, as well as providing assistance in the re-engineering of entities' processes and procedures.

Source: AIG (2019[16]), *Acerca de la AIG*, http://www.innovacion.gob.pa/acercade (accessed on 7 March 2019).

Created by Law No. 65 of 30 October 2009 (Asamblea Nacional, 2009[17]), with a reinforced e-government mandate provided by Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[18]), the Authority is attached to the Ministry of the Presidency (centre of government) and its Administrator General is directly nominated by the President of the Republic of Panama. It reports to the **National Government Innovation Council** (*Consejo Nacional para la Innovación Gubernamental*), presided over by the President of the Republic of Panama, and consisting of the Minister of the Presidency, the Minister of Finance, the Administrator General of AIG, the Secretary General of the National Secretariat of Science, Technology and Innovation (*Secretaría Nacional de Ciencia, Tecnología e Innovación*, SENACYT) and the General Comptroller of the Republic (*Contraloría General de la República*). AIG has evolved from a previous institutional approach that started as a Commission under the Vice-president of the Republic in 2002 with the support of the United Nations Development Programme.

As an authority in the Panamanian public administration context, AIG benefits from an institutional regime that guarantees administrative and financial autonomy. The Authority has legal personality, manages its own assets and resources autonomously and according to an internal regime. The institutional framework of AIG enables this public sector organisation to use its wide mandate and scope of action in a very autonomous and efficient way across the different sectors and levels of government.

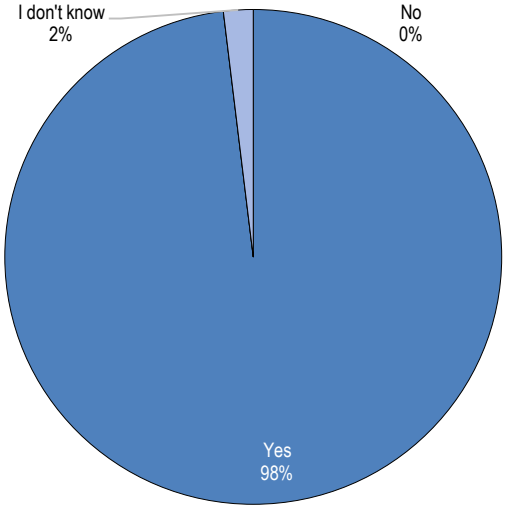
The Administrator General of the Authority participates regularly in the meetings of the Council of Ministers (*Consejo de Gabinete*). This participation is an important policy lever for AIG to support the development and implementation of digital government policies across the government, that allows the Authority to ensure strong alignment with the government's strategy and priorities in different policy areas, acquiring a critical oversight capacity on public sector policies underway. Moreover, this facilitates AIG's access to main decision actors and decision processes, providing a unique opportunity to embed digital technologies from the very start of the policy design process.

AIG prioritises a collaborative and open culture for policy design, delivery and monitoring through frequent efforts to involve private sector stakeholders in its activities. The **Advisory Council of AIG** (*Comisión Asesora de la AIG)* regularly brings together mostly private sector representatives to advise the Authority on its priorities and actions. High-level representatives of entities with a seat in the Council such as the Panamanian Chamber of Information, Innovation and Technologies (CAPATEC), the Panamanian Chamber of Construction (*Cámara Panameña de la Construcción*), the Authority of the Panama Canal (*Autoridad del Canal de Panamá*) or the Panamanian Association of Business Executives (*Asociación Panameña de Ejecutivos de Empresas*), are able to positively influence government policy on digital government. This Council represents in this sense a strategic institutional asset for aligning public-private expectations, promoting value co-creation, but also encouraging shared ownership of, and responsibility for, the policies being implemented.

Acknowledgement and support for the role of AIG

The role of AIG as the public sector organisation responsible for leading the digital transformation of Panama's public sector policy is highly and positively recognised. The OECD peer review team was able to observe the level of recognition of the Authority and support for its work by representatives of different sectors of government, but also private sector and academia representatives. **Figure 1.8** illustrates this level of acknowledgement by the more than 50 public sector institutions that responded to the *Digital Government Survey of Panama* (OECD, 2019[19]).

Figure 1.8. Recognition of the existence of a co-ordinating body responsible for Panama's digital government policy



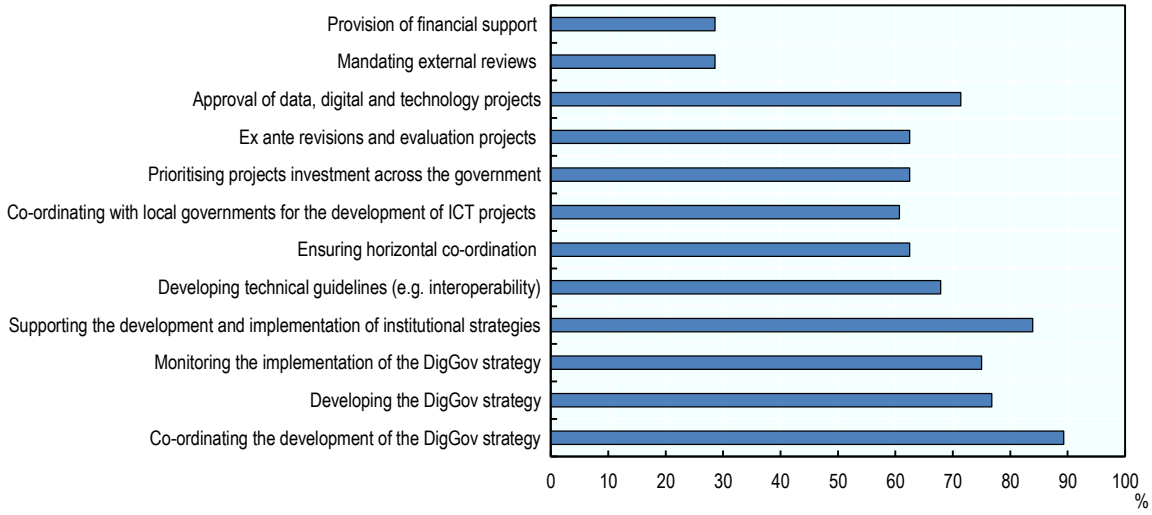
Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

Digital government cross-cutting programmes and initiatives such as Online Panama (*Panamá en Linea)* for simplifying and automating procedures, the 311 Citizen Contact Centre (*Centro de Atención Ciudadana 311*), the National Internet Network (*Red Nacional de Internet)* consisting of free Internet access points, Digital Municipalities (*Municipios Digitales*), the Open Data Portal and other shared platforms (see Chapters 3 and 4) contribute to this high-level recognition among public sector organisations. In line with its leadership role in the national digitalisation policy, AIG is able to mobilise joint efforts and promote synergies that determine support for its wide mandate and critical role.

But active involvement by AIG in different policy priorities also demonstrates a recognition that its role goes beyond the borders of government. Concrete initiatives managed by the agency such as the ones mentioned above showcase to citizens and businesses the benefits of AIG's policy leadership as a promoter and accelerator of the digital transformation of public sector organisations.

Figure 1.9 demonstrates that the vast majority of respondents are aware of the role the Authority plays in the co-ordination, development and monitoring of the national digital government strategy, and in the support and development of institutional strategies across the administration and in co-ordination with local governments. These soft-policy levers are correctly associated with the Authority's mission.

Figure 1.9. Main responsibilities attributed to the co-ordinating body responsible for Panama's digital government policy



Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

Concerning hard policy levers that can support coherent and sustainable policy implementation, the approval of data, digital and technology investments, as well as the *ex ante* evaluation and prioritisation of ICT investments, were easily ascribed to the Authority (see Chapter 2). The responsibility for mandating external reviews or proving that funding support was received was not recognised by the majority of the respondents precisely because those activities are not part of AIG's mandate and responsibilities.

The high level of acknowledgement and support observed for AIG demonstrates that the institutional framework of the digital government policy in Panama is considerably mature. Not only the institutional setting is advanced when considering the role, mandate and scope of action of AIG, but also the level of acknowledgement by public sector stakeholders is high, contributing to one of the most critical requisites of sound governance of digital government.

Box 1.2. Digital government leadership - Examples from Portugal and the United Kingdom

AMA – Agency for Administrative Modernisation (Portugal)

The Agency for Administrative Modernisation (AMA) is since 2007 the public institute responsible for promoting and developing the administrative modernisation in Portugal. Responding to the Presidency of the Council of Ministers, AMA's initiatives and projects are focused in three policy areas:

- **Public Service Delivery**, including the management of service design and integrated multichannel delivery thought a national network of physical one-stop shops (Citizens Shops and Citizens Spots), the national services portal (ePortugal) and the telephone contact centers.
- **Digital Transformation**, managing and developing key enablers such as the national digital identity system, the national interoperability platform and coordinating the technical committee of the Council for ICT in the Public Sector (CTIC).
- **Administrative Simplification**, with the operational management of the Simplex Programme, an emblematic wide national initiative that collaboratively and with high level political support mobilises the public sector, the private sector, the academia and the civil society towards a simpler and more citizen-driven public administration.

AMA also manages an administrative modernisation funding programme (SAMA2020) that supports national and local public sector organisations to develop initiatives and projects in the three policy areas mentioned above.

GDS – Government Digital Service (United Kingdom)

The Government Digital Service (GDS) was founded in December 2011. It is part of the Cabinet Office, the United Kingdom's centre of government, and works across the whole of the UK government to help departments meet user needs and transform end-to-end services.

GDS' responsibilities are to:

1. provide best practice guidance and advice for consistent, coherent, high-quality services
2. set and enforce standards for digital services
3. build and support common platforms, services, components and tools
4. help government choose the right technology, favouring shorter, more flexible relationships with a wider variety of suppliers
5. lead the digital, data and technology function for government
6. support increased use of emerging technologies by the public sector.

GDS builds and maintains several cross-government platforms and tools, including GOV.UK, GOV.UK Verify, GOV.UK Pay, GOV.UK Notify and the Digital Marketplace. It also administers a number of standards, including the Government Service Standard, the Technology Code of Practice and Cabinet Office spend controls for digital and technology.

In 2013, less than 2 years after its launch, GDS had over 200 staff. Today GDS has more than 500 staff.

Source: Agency for the Administrative Modernisation (2019[20]), https://www.ama.pt; Government Digital Service (2018[21]), *About Us*, GOV.UK, https://www.gov.uk/government/organisations/government-digital-service/about.

Panama currently benefits from a sound governance framework for driving the digital transformation of the public sector. The entity that leads the digital government policy – AIG – benefits from high-level political support, has a mandate and level of autonomy for policy action guaranteed by being a public sector

authority, is well sustained by important mechanisms of co-ordination and its role is highly recognised by the ecosystem of digital government stakeholders. AIG is able to implement its digital government initiatives and projects in a very positive institutional environment that favours the capacity of the Authority to strongly shape digital government development in the country. This positive institutional environment also allows for a better connection between digital government policies and broader policy agendas that help reinforcing citizens' trust in the public sector, the social well-being of the population and sustainable economic growth.

Co-ordination, compliance and mandates

Cross-level co-ordination for improved synergies and policy coherence

The digital transformation underway requires government to have appropriate mechanisms for cross-sector and cross-level co-ordination to secure multi-stakeholder involvement, alignment and engagement with digital government policies. Institutional co-ordination is essential for promoting consensus, defining shared standards and accepting policy levers at a corporate level to achieve coherent public policies (OECD, 2017[1]). Additionally, co-ordination is an important enabler for ensuring multi-stakeholder engagement that promotes ambitious approaches to collaboration and commissioning for value co-creation between public, private and civil society agents.

The existence of stable policy co-ordination mechanisms also enables better monitoring, providing policy and decision makers with a broad picture of the projects and initiatives across different sectors and levels of government and better assessment of investments. A co-operative environment between the relevant public stakeholders allows for better and more regular monitoring of policy activities through the exchange of information and data. It also enables the development of accountability mechanisms, that are fundamental to strengthening citizens' trust in governments.

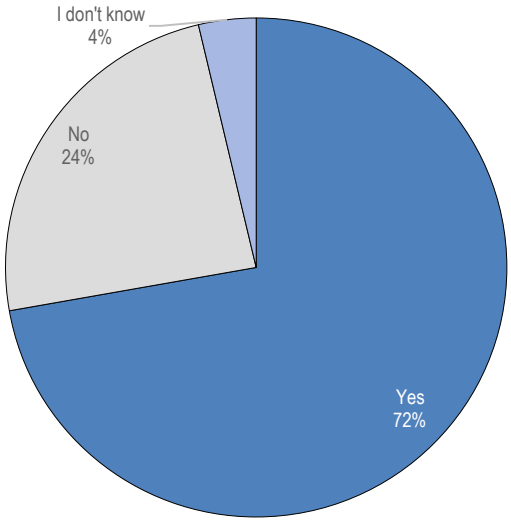
The decentralisation of public administrations is a challenge for effective governance of digital government across OECD member and non-member countries. Enabling strong central government co-ordination for digital government requires a shift from agency-centric approaches to a systems perspective, focused on the advantages of co-ordinating efforts for more efficient and coherent policy action. A culture of co-ordination can further be encouraged or nurtured through institutional mechanisms to promote inter-governmental co-ordination and consensus, foster an exchange of views, knowledge and data sharing among the public stakeholders for a common definition of goals and priorities, and collaborative implementation strategies.

In order to secure effective policy co-ordination, the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[3]) advocates that high-level articulation and leadership is needed, bringing together ministers or senior officials, and assuring broad co-ordination and oversight of the digital government strategy. Side by side with this high-level co-ordination, an operational and technical co-ordination mechanism is also required to deal with implementation challenges and bottlenecks. The existence of these two levels of co-ordination can be particularly useful to ensure the coherence and sustainability of the decisions, initiatives and projects to be executed (OECD, 2016[2]).

In Panama, the **National Council of Government Innovation** (*Consejo Nacional para la Innovación Gubernamental*, CNIG) is a high-level co-ordination body responsible for overseeing the work of AIG. Chaired by the President of the Republic, the Council brings together the Minister of the Presidency, the Minister of Economy and Finances, the General Administrator of AIG, the Secretary General of SENACYT and the Comptroller General of the Republic (*Contraloría General de la República*). Created by Law No. 65 of 30 of October 2009, the Council has the mandate to approve the annual budget of AIG, as well as the policies and national plans for ICT development in government formulated by the Authority (Asamblea Nacional, 2009[17]).

Although its institutional function is very concretely AIG's oversight, the Council is an important example of a co-ordination mechanism that reflects the importance attributed by the Panamanian government to digital government policy. Together with the regular participation of the General Administrator of AIG in the Council of Ministers (see Chapter 1: The National Authority for Government Innovation), the seniority of those serving on the Council showcases Panama as an advanced example of political support for the digital government agenda.

Figure 1.10. Regular co-ordination with the co-ordinating body responsible for Panama's digital government policy



Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

Box 1.3. Cross-level co-ordination – Examples from Brazil and Norway

SISP - System for the Administration of Information Technologies Resources (Brazil)

The System for the Administration of Information Technologies Resources (*Sistema de Administração dos Recursos de Tecnologia da Informação*, SISP) is the main institutional digital government co-ordination mechanism in Brazil, promoting the necessary alignment among the federal-level public sector organisations concerning digital government policies and practices. The SISP is co-ordinated by the federal public sector organisation that leads the digital government in Brazil, the Secretariat of Information and Communication Technologies (SETIC), and brings together over 200 representatives of public bodies from the federal government. The system has a transversal convening role but limited enforcing capacities. The SISP's objectives are to:

1. promote the "integration and co-ordination among government programmes, projects and activities, envisaging the definition of policies, directives and norms for the management of information technologies resources"
2. encourage the "development, standardisation, integration, interoperability, normalisation of services of production and dissemination of information"
3. define the strategic policy for the management of ICT of the federal government.

The SISP also contributes to knowledge exchange, peer-to-peer learning and promoting innovation among its members. Through a virtual community, SISP members are invited to interact and share knowledge. SISP expert groups also bring together some of its members to discuss and agree on common actions on: 1) strategic human resource management; 2) IT procurement; 3) information and communication security; and 4) electronic services and accessibility.

SKATE - Strategic Co-operation Council for Management and Co-ordination of eGovernment Services (Norway)

The SKATE is a strategic collaborative council and advisory body meant to ensure co-ordination of the digitalisation of the public sector to benefit citizens, businesses and the management of the public administration. It brings together heads/directors from key Norwegian public institutions from various policy sectors: from education to justice, from taxes to health. The local government is also represented through the Association of Local and Regional Authorities (KS).

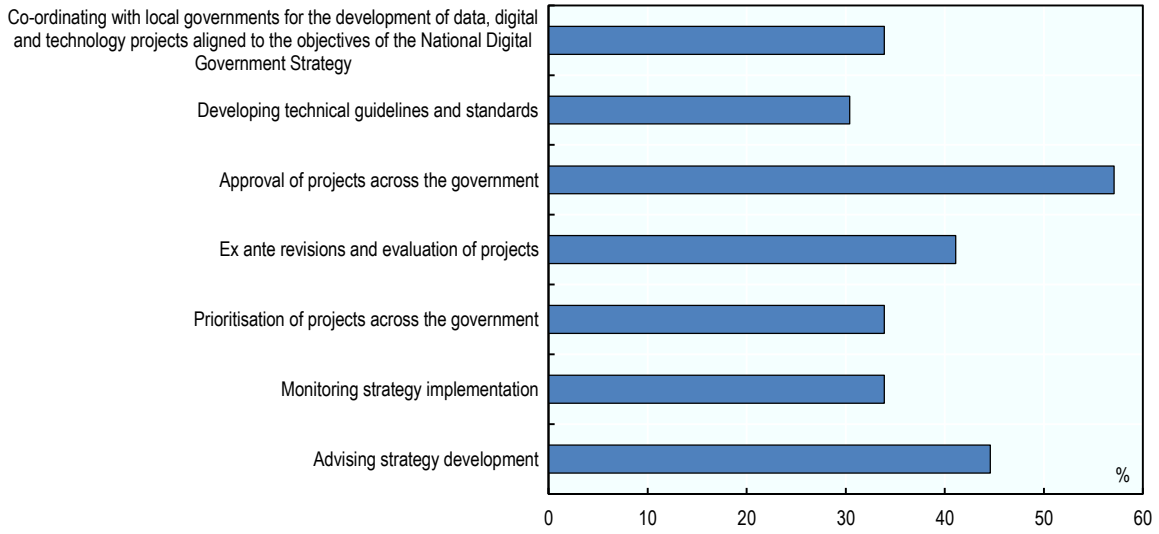
Established in 2012 and chaired by Difi, the Norwegian public sector organisation responsible for the executive management and implementation of digital government policies, SKATE is considered a key policy advisor concerning which ICT measures ought to be implemented and how to finance them. SKATE also advises on future development policy and administration of the common components in the central ICT infrastructure.

Source: OECD (2017[22]), *Digital Government Review of Norway: Boosting the Digital Transformation of the Public Sector*, https://dx.doi.org/10.1787/9789264279742-en; OECD (2018[13]), *Digital Government Review of Brazil: Towards the Digital Transformation of the Public Sector*, https://dx.doi.org/10.1787/9789264307636-en.

In addition to high-level co-ordination and political support, AIG holds CIO Meetings (*Reunión Directores y Jefes de TI*) that bring together the IT directors of public sector organisations. Regular quarterly meetings are dedicated to follow up on digital agenda initiatives, discuss shared platforms and standards, procedures and standards for ICT projects. The meetings are also used to share best practices among public sector organisations and discuss the adoption of emerging technologies and new ICT trends (OECD, 2019[19]; AIG, 2018[23]). More operational in nature, they constitute an important mechanism to secure co-ordination, alignment as well as collaboration and synergies across the government. The meetings also provide a significant leadership tool to AIG, allowing the Authority to strengthen the involvement and mobilisation of its contact points (the IT directors) of different public sector organisations.

The existing institutional co-ordination between public sector organisations in Panama benefits not only from important high-level (National Council of Government Innovation) and technical-level mechanisms (CIO meetings) but also regular contacts between AIG and its counterparts across the administration. During the OECD peer review mission in November 2018, several public sector organisations highlighted how important this intense co-ordination was in securing alignment and policy coherence as well as guidance and knowledge sharing for policy implementation. The data collected through the *Digital Government Survey of Panama* (OECD, 2019[19]) confirmed this important practice with 72% of public sector organisations answering that they regularly co-ordinate with AIG (**Figure 1.10**). Advice for digital government strategy development and approval of ICT projects are among the activities that justify this regular co-ordination (**Figure 1.11**).

Figure 1.11. Purposes of regular co-ordination with the body responsible for Panama's digital government policy



Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

Within the analysis of the cross-level co-ordination component on digital government, Panama presents a remarkable level of maturity, being able to bring together several mechanisms that secure policy alignment, promote synergies and pave the way for shared ownership and responsibility for digital government implementation across the administration. Building on this important background and on several efforts already underway, three challenges can be highlighted for more efficient and better co-ordinated policy action in Panama:

1. From centralised to shared policy implementation

The co-ordinating role of AIG contributes to maturing digital government development in Panama. Yet, although centralised efforts of implementation were critical in securing the country's rapid progress towards a digital government, at medium and long terms their sustainability is problematic and can hinder shared policy implementation, the further development of digital government capacities across the administration and obstructing the required sense of shared ownership and joint responsibility.

2. Mobilising the different levels of government

Room for improvement seems to exist for building higher readiness, engagement and empowerment of the municipalities in Panama, favouring a more decentralised and sustainable digital transformation of the public sector. AIG currently detains highly acknowledged, recognised expertise and considerable technical and human resources that could be better mobilised to support the digital transformation agendas at the local level and the development of initiatives and projects more aligned with specific local needs.

3. Compliance of existing guidelines and standards

AIG's role and capacity in the development and implementation of guidelines and standards across the administration is broadly acknowledged by Panamanian public sector organisations. Nevertheless, during the fact-finding mission and considering the results of the digital government survey of Panama, room for improvement exists for effective compliance of key digital guidelines and standards (OECD, 2019[11]). For instance, the importance of data exchange across the administration and the once-only principle are substantially supported by senior digital government officials in Panama but their effective application is still very limited (see Chapter 3).

Addressing the three challenges mentioned above depend on the mobilisation and strategic use of effective institutional mechanisms that can secure alignment, synergies and shared efforts for the coherent and sustainable policy development of digital government in Panama. Chapter 2 will analyse, discuss and explore how some strategic policy levers (e.g. business cases, budgetary influence, project management standards) can be used to support AIG's mandate, reinforce policy implementation and assure that the opportunities and challenges of the digital transformation can be addressed across the public sector.

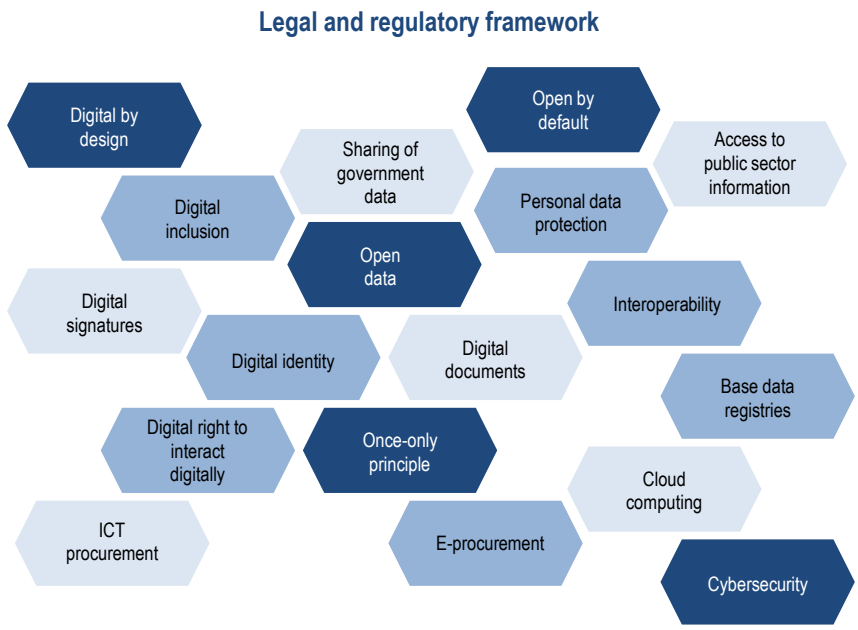
Enabling legislation and digital rights

A sound legal and regulatory framework

Key Recommendation no. 12 of the *OECD Recommendation of the Council on Digital Government Strategies* (2014[3]) expects OECD member and adherent countries to "ensure that general and sector-specific legal and regulatory frameworks allow digital opportunities to be seized" namely by "reviewing them as appropriate". Numerous and varied laws and regulations are required to be in place in order to enable and institutionalise digital change in the public sector. Digital rights of citizens and businesses, attribution and legal value, recognition of digital artefacts (e.g. digital documents, digital signatures), openness and transparency of information and data, personal data protection and security of digital systems are some of the domains covered by digitally enabling legal and regulatory frameworks (OECD, 2016[2]).

The diversity of trends and the increasing complexity of digital systems and platforms creates a critical challenge for governments to maintain an up to date legal and regulatory framework. There is no one-size-fits-all model for the legal and regulatory environments for digital government given the different institutional cultures and contexts in countries. Permanent efforts are required to tackle and not create obstacles to the creation of a digitally enabled state. The digital change is constant and dynamic, but the adequate legal and regulatory building blocks need to be in place for its sound institutionalisation (see **Figure 1.12**).

Figure 1.12. Institutionalising the digital transformation



Source: Author.

The legal and regulatory framework for digital government in Panama reflects the effort and commitment of the national government to have the necessary enablers in place that can enhance the digital transformation of the public sector. **Table 1.3** presents several examples of critical laws and decrees that illustrate the Panamanian legal and regulatory context.

Table 1.3. Examples of key digital government legislation in Panama

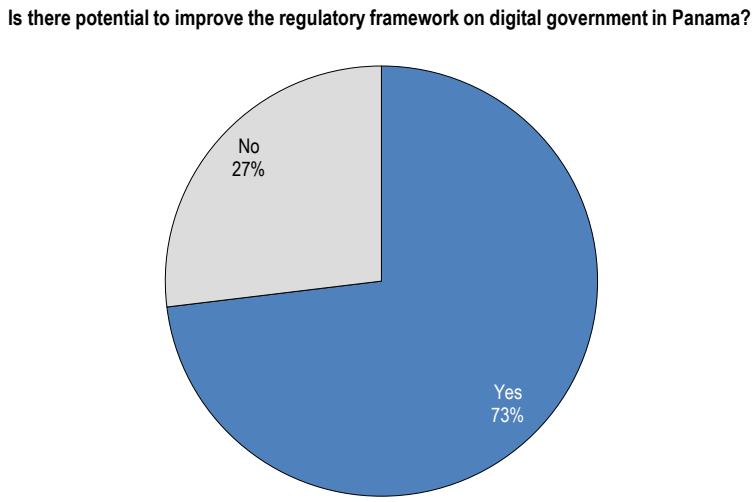
Law/Decree	Subject
Law No. 51 of 22 July 2008	Regulates the use of electronic documents and digital signatures
Law No. 59 of 11 August 2008	Promotes the service of universal access to information technologies and telecommunications
Law No. 65 of October 2009	Creates the National Authority for Government Innovation
Law No. 83 of 9 November 2012	Regulates the use of electronic tools for government services
Executive Decree No. 719 of 15 November 2013	Regulates the delivery of digital services
Executive Decree No. 511 of 24 November 2017	Adopts the public policy of transparency on open government data
Executive Decree No. 275 of 11 May 2018	Regulates digitalisation and digital documents procedures in government
Law No. 81 of 26 March 2019	Personal data protection law

Source: Asamblea Nacional (2008[24]; 2008[25]; 2012[18]; 2019[26]); Ministerio de la Presidencia (2010[27]; 2017[28]; 2018[29]).

As the table above demonstrates, the Panamanian government was able to progressively update its legal and regulatory framework to support the development of a digital economy, society and government. For instance, since 2008, Law No. 51 of 22 July regulates the use of digital documents and signatures, broadly threading the path for a progressive digitalisation of government activities (Asamblea Nacional, 2008[24]). In 2012, Law No. 83 of 9 November provided a broad framework for digital government development in the country, with a large scope that included the right to digitally interact with public sector organisations, the once-only principle, the value of data and interoperability in the public sector (Asamblea Nacional, 2012[18]). More recently, the approval in 2017 of Executive Decree No. 511 of 24 November establishes the national policy on open government data, demonstrating government willingness and commitment to embrace the sharing and reuse of public data as a mechanism of transparency and value creation (Ministerio de la Presidencia, 2017[28]). In March 2019, fulfilling a gap that was broadly recognised by the digital government ecosystem of stakeholders, the National Assembly approved Law No. 21 of 26 March that regulates personal data protection (Asamblea Nacional, 2019[26]). This new legislation will take effect two years after its publication in the Official Gazette (*Gaceta Oficial)*, contributing to place Panama in a new stage for the development of a data-driven public sector (see Chapter 3).

As a mechanism to guarantee the whole-of-government alignment in the application of the legal and regulatory framework on digital government, as mentioned previously the General Administrator of the AIG participates in Cabinet meetings where bills are reviewed and approved before submission to the National Assembly (OECD, 2019[19]).

Figure 1.13. Perceptions of the legal and regulatory framework in Panama



Source: OECD (2019[11]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

Although the efforts of the government to keep the legal and regulatory framework updated have been considerable, the vast majority of public sector organisations that participated in the *Digital Government Survey of Panama* confirmed there is still potential to improve it (see **Figure 1.13**). During the peer review mission to Panama City in November 2018, the absence of updated legislation was frequently pointed out as a reason for low uptake of specific digital government opportunities (e.g. increased participation of citizens and businesses in digital government policies, e-procurement, use of emerging technologies in the public sector). While an overly legalistic culture was observed in causing some inaction in specific areas, it was generally acknowledged by the OECD peer review team that the administrative system in Panama depends on, and is strengthened by, the Country's legal and regulatory framework. In this sense, although a culture of innovation and experimentation should be further promoted across the administration, it is generally accepted by AIG and the digital government ecosystem of stakeholders that an updated legal and regulatory framework is a requirement for enhancing digital government in Panama.

To that end, there seems to exist room for improvement towards the adoption of a digital by design approach in the policymaking process, embedding the potential of digital technologies from the start when designing, developing, implementing and monitoring new legal and regulatory bills. This would secure a more consistent integration of digital technologies in the policy lifecycle, allowing the country to more rapidly and sustainably seize the opportunities and tackle the risks of the digital transformation. Evidence also shows the need of capacity building/training programmes targeted at legislators in order to help raise their awareness on the use of digital technology by the public sector and the implications of new legislation in the digital government landscape (see **Box 1.4**). The promotion of a digital culture by policymakers and senior public officials is recognised by government CIOs of OECD countries as a critical lever for sound digital government development (see Chapter 2).

Box 1.4. Public guide for legislators on the integration of digital technologies (Austria)

A public guide was developed in Austria to advise the legal experts responsible for drafting laws related to the integration of digital technologies, briefing them on the relevant regulatory issues. Legal experts (civil servants, subnational governments) benefit from such guidance about how to consider digital technologies from the start when drafting legislative proposals.

Following the launch of the guide in 2012, the need for central interventions during the legislative process from the Federal e-Government Department decreased considerably since an increasing number of legislative drafts had already taken the recommendations into account.

Source: Federal Chancellery of the Government of Austria (2018[30]), *Impact Assessment of Legal Projects on ICT*, https://www.bka.gv.at/DocView.axd?CobId=47410 (accessed on 24 September 2018).

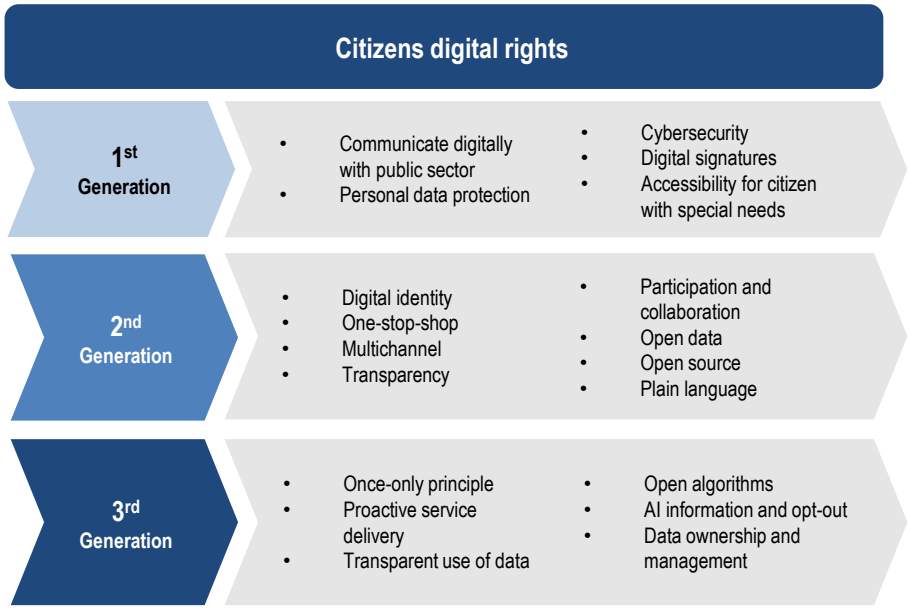
Digital rights for a citizen-driven transformation

As digital technologies penetrate citizens' and businesses' daily activities, opportunities for increased efficiency, convenience, transparency or inclusion emerge. Alongside a wide range of opportunities, there are risks to privacy, security or social and economic inclusion, as well as newly emerging rights, that require the government to have the right legal and regulatory frameworks in place, enabling a sound digital transformation. Since going digital is not optional for economies, societies and public sectors, it is governments' critical responsibility to guarantee that the digital disruptiveness underway does not harm the fundamental pillars of democratic societies.

In an era in which digital became omnipresent a citizen-driven transformation requires a streamlined approach to digital rights that secures social well-being and sustainable economic growth. ; one that embeds a combination of existing and newly emerging digital rights to frame the changing relation of citizens with the public sector and that can help enhancing a positive change in the digital age..

As such, some basic or "first generation" digital rights should be considered as citizens' fundamental rights (e.g. personal data protection, the right to communicate digitally with the public sector, cybersecurity). Governments should be committed to safeguarding these rights as baseline prerequisites for the digitalisation of public sector activities. In order to start embracing digital government effectively, governments need to go further and guarantee some "second generation" rights such as digital identity, one-stop-shops and multichannel approaches, plain language in communication with citizens and open government data. But as emerging technologies such as artificial intelligence (AI) quickly penetrate public sector activities and services, these mainstreamed digital rights in the OECD context are becoming insufficient. For example, in order to ensure citizens' convenience and secure trust in an age of digital disruption, governments are now increasingly required to apply the once-only principle, develop proactive service delivery, guarantee data transparency and ownership to their citizens and consider open algorithms when applying AI in public decision-making processes (**Figure 1.14**). For instance, in order to secure openness and accountability about the use and reuse of data, countries such as ***Belgium***, ***Estonia***, ***Netherlands*** and ***Spain*** allow citizens to know how their data is being used across the administration through online dashboards.

Figure 1.14. Digital rights – Towards a citizen-driven transformation



Source: Author.

In Panama, significant evidence shows that the government progressively adopted an approach that takes into digital rights when updating its legal and regulatory framework. For instance, and as mentioned above, Law No. 83 of 9 November 2012 foresees the right of the citizen to digitally interact with public sector organisations and also the application of the once-only principle (Asamblea Nacional, 2012[18]). Executive Decree No. 511 of 24 November 2017 establishes the national policy on open government data (Ministerio de la Presidencia, 2017[28]) and the recent Law No. 21 of 26 March 2019 regulates personal data (Asamblea Nacional, 2019[26]). Additionally, during the peer review mission, the stakeholders interviewed frequently stressed the right of citizens to benefit from increased efficiency and convenience when interacting with the public sector, underlining that this was one of the central drivers of the digital government actions of their public sector institutions.

It is also important to note that the Government of Panama benefits from an interesting mobilisation of specific sectors in civil society to use digital rights as a driver for a competitive, inclusive and sustainable digital change in the country. For instance, the Panamanian Institute of Law and New Technologies (Instituto Panameño de Derecho y Nuevas Tecnologías, IPANDETEC) is a non-profit association that promotes the use and regulation of digital technologies and the defence of human rights in the digital society. With a scope of action mostly focused in Panama and Central America, IPANDETEC develops analysis, research and legislative monitoring of public policies dedicated to the digital transformation of society.

Building on the efforts underway to maintain an up to date legal and regulatory framework and considering the possibilities to further collaborate with civil society organisations (e.g. IPANDETEC), the Government of Panama should consider strengthening its policy initiatives, projects and actions using a citizens' digital rights angle. This will require that AIG further embody this commitment for the development of digital government by strongly prioritising the evolution of the citizens' digital rights framework in the country, and also increasing the efforts to build a digital rights culture among the Panamanian public sector workforce through awareness-raising campaigns and capacity-building actions.

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Notes

[1] According to the Authority's website, AIG is: "… the competent entity of the State to plan, coordinate, issue guidelines, supervise, collaborate, support and promote the optimal use of information and communication technologies in the government sector for the modernization of public management, as well as recommend the adoption of national strategic policies, plans and actions." (AIG, 2019[31])

2 Enhancing the digital transformation of the public sector

In line with Pillar 3 of the OECD Recommendation of the Council on Digital Government Strategies, this chapter analyses and discusses the capacities and capabilities necessary for a sound digital government policy in Panama. It starts by focusing on the level of priority attributed to the development of different types of digital skills. The chapter focuses in a second section on the policy levers in place to streamline ICT investments in the public sector, namely the use of budgeting capacities, budget thresholds, business cases, project management frameworks and co-funding mechanisms. A section dedicated to ICT procurement in Panama closes the chapter, discussing the efforts necessary to support a shift towards an ICT commissioning approach.

Introduction

As the transformative role of digital technologies becomes mainstream in an increasing number of government sectors, it is rapidly reaching all policy work streams and elevating citizens' expectations across public service efficiency, inclusiveness, convenience and sustainability. This requires governments to prioritise digital policy planning, design, development, implementation and monitoring. Besides adapting their institutional settings and legal and regulatory frameworks (see Chapter 1), increasing efforts need to be mobilised to strengthen the necessary public sector capacities for seizing the opportunities and tackling the challenges of digital transformation.

In line with Pillar 3 of the *OECD Recommendation of the Council on Digital Government Strategies* (2014[1]), a sound digital government policy requires that several building blocks and policy levers are in place to secure the mobilisation and co-ordination of efforts across the different sectors of governments. One of these is for the public workforce to have the right skills to build upon the opportunities of efficiency, connectivity, openness and intelligence brought by digital technologies. Equally important is a framework of different policy levers, which promote the articulation of policy actions needed to avoid the gaps and overlaps typically brought by siloed and agency-thinking approaches to public investment in digital technologies.

The OECD Recommendation on Public Service Leadership and Capability (2019[2]) also provides a fundamental framework of analysis on how countries can ensure that their public services fit for purpose for today's policy challenges, and capable of taking the public sector into the future. The Recommendation supports governments on promoting a values-driven culture and leadership, developing skilled and effective public servants and responsive and adaptive public employment systems.

The current chapter will start by analysing the system around digital skills in the Panamanian public administration, focusing on the policy efforts underway for the development of a digital culture across the administration. The analysis will then centre on the policy levers that have already been implemented or for future consideration for co-ordinated investment in digital technologies that contribute decisively towards a coherent and sustainable policy on digital government. A third and last section of the chapter will be dedicated to the information and communication technologies (ICT) procurement context in Panama and discussing how it can evolve towards a commissioning approach.

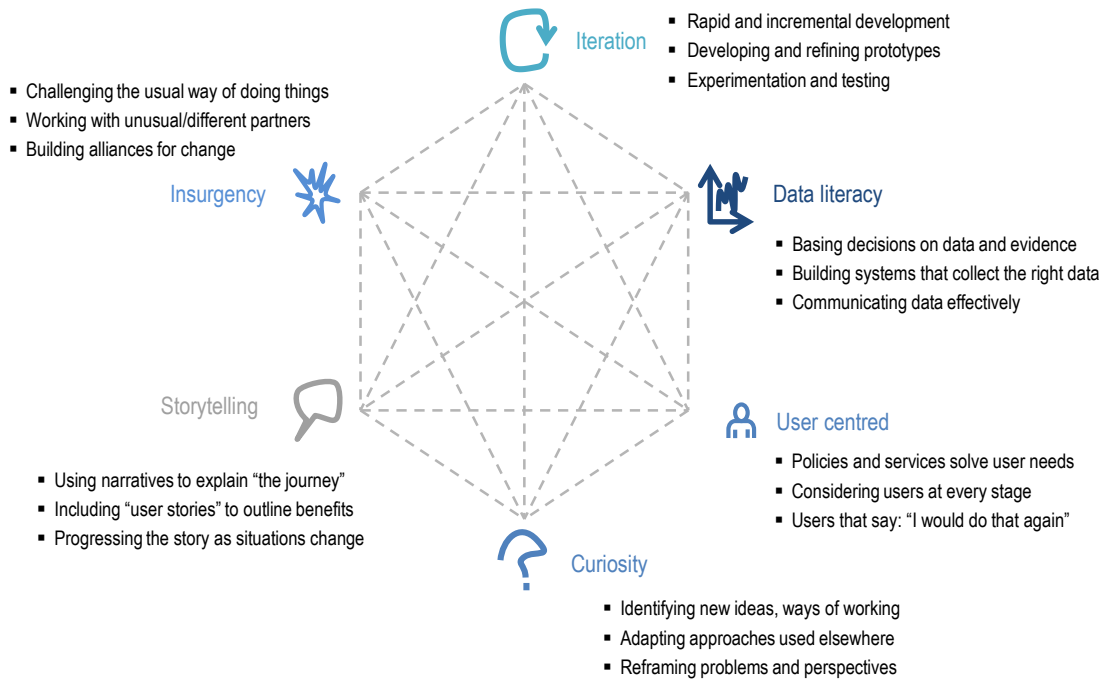
Digital culture and skills in the public sector

Digital skills for an empowered public workforce

Skills development is one of the most critical building blocks considered by governments as part of their efforts to enhance the digital transformation. Given the widespread use of digital technologies across the administration, competencies are needed to properly drive the digital change. Technologies are increasingly complex, diverse and with a fast-paced evolution that requires governments to increase efforts to keep the skillsets of public officers updated, but also to anticipate the needs associated with emerging change. More than being reactive, governments increasingly need foresight and anticipatory capacities to manage the competencies and capabilities of the public sector workforce and organise themselves accordingly.

The fast-changing environment where governments operate, has also transformed the needs and expectations of citizens and businesses with regards to how they interact with the public sector and/or can access public services. To address the change underway, a creative, flexible and adaptive public sector workforce with a citizen-driven mindset is required to drive an innovative public sector with the capacity to tackle the disruptive challenges of the twenty-first century and respond to the changing needs.

Figure 2.1. Six core skills for public sector innovation



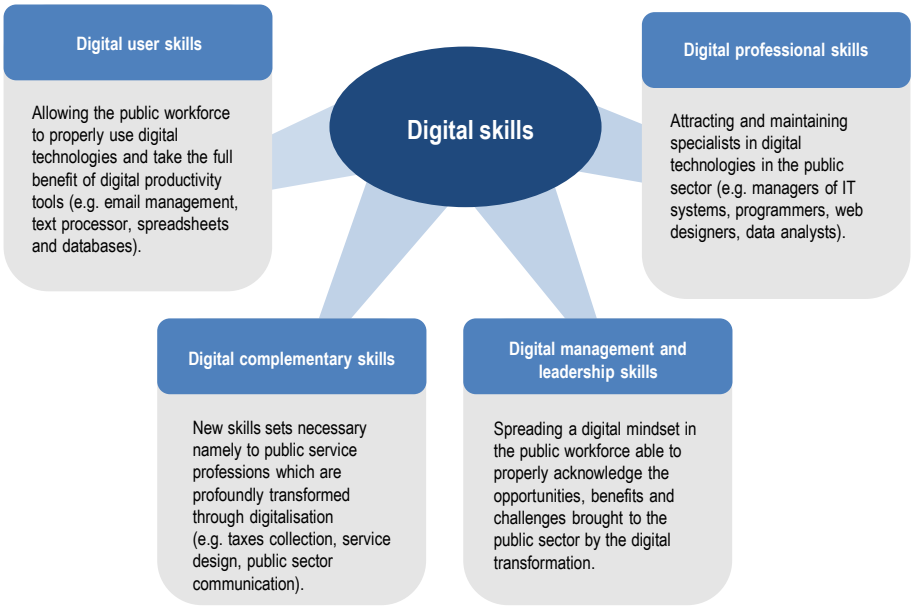
Source: OECD (2017[3]), *Core Skills for Public Sector Innovation*, https://www.oecd.org/media/oecdorg/satellitesites/opsi/contents/files/OECD_OPSI-core_skills_for_public_sector_innovation-201704.pdf.

Based on research with civil servants involved in innovation projects, activities and teams from around the world, as well as public sector innovation and digital government specialists, the OECD has developed a framework of public sector innovation skills, which groups six categories of skills: iteration, data literacy, user centricity, curiosity, storytelling and insurgency. Although these are not the only skills required for public sector innovation and are not required in every aspect of a public servant's day-to-day work, embracing or promoting this framework across the public sector can create a more supportive environment for innovation in the public sector (OPSI, 2017[4]).

Considering that the digital transformation is the background for the operation of a more innovative public sector, the aforementioned skills framework represents also the skills that are needed to support the shift from e-government to digital government highlighted by the *OECD Recommendation of the Council on Digital Government Strategies* (2014[1]). In other words, a shift from skills that understood technologies as a means to improve efficiency to a digital mind-set and culture where the design of government processes and services embed technologies from the outset in pursuit of more open, collaborative, inclusive, innovative and sustainable policies.

Bearing in mind that going digital is not an option but a requirement of the age we live in , public workforces are increasingly required to embrace and maintain digital skills that can allow them to be part of the digital transformation.

Figure 2.2. Types of digital skills required by civil servants in the context of a digital transformation of the public sector



Source: Author, based on OECD (2017[5]), *OECD Digital Economy Outlook 2017*, https://dx.doi.org/10.1787/9789264276284-en.

Figure 2.2 illustrates a framework containing four kinds of different skills that should be considered by the public sector to be prepared in driving the change underway. *Digital user skills* are a requisite in most public sector profiles. Focused mostly on productivity, the ability to use basic digital tools such as word processing, Internet navigation, email communication and even spreadsheets programs are mainstreamed skills for most professions. On the other hand, *digital professional skills* are also increasingly prioritised given the public sector need to manage and develop its ICT resources. Software engineers and developers, network specialists, enterprise and system architects, data scientists, designers and user researchers, product managers and business analysts are profiles that the administrations need to attract, maintain and keep updated. Digital user skills and digital professional skills are an established part of the policies for the development of e-government for many years and are still the main type of skillsets considered by non-specialised audiences as the necessary skills for the digital transformation.

Nevertheless, as technologies become progressively embedded in public sector activities, new types of skills are emerging and increasingly considered as critical for sound digital government. *Digital complementary skills* are based on a strong need for dexterity in managing different tools for specific job profiles in the public sector. For instance, tax collection, project management, audit, regulation or communication are activities being profoundly transformed due to the progressive penetration of digital technologies, requiring new digital skillsets for public officers that perform them. In other words, non-specific ICT related activities today require new skills and competencies to be effectively performed in a digital environment.

In the current environment, the traditional notions of public service leadership, mostly based on legal compliance and bureaucratic process management, need to be reconsidered in order for the senior management to be able to properly embrace and lead the digital transformation. The promotion of a digital culture and a digital transformation mind-set is increasingly recognised as a requirement by senior digital government officials from OECD member and non-member countries. The capacity of a senior public sector officer to understand the digital transformation as a phenomenon that clearly surpasses any technological or technical discussion is fundamental to achieving new stages of digital government maturity in national contexts, in line with the required new leadership capacities expressed in the OECD

Recommendation on Public Service Leadership and Capacity (OECD, 2019[2]). Therefore, the development of a fourth group – digital management and leadership skills – appears to be a priority. It is based on the increasing need of public officers, namely at senior level, to have basic knowledge and awareness about the digital transformation and the opportunities and challenges it offers. In the age of cloud computing, distributed ledgers, artificial intelligence and data analytics, senior public officials are not required to be experts on the use of these emerging technologies and trends, but they need to have a basic understanding of their potential role and impact in the digital transformation process, as they may have to take strategic decisions on related applications or investments..

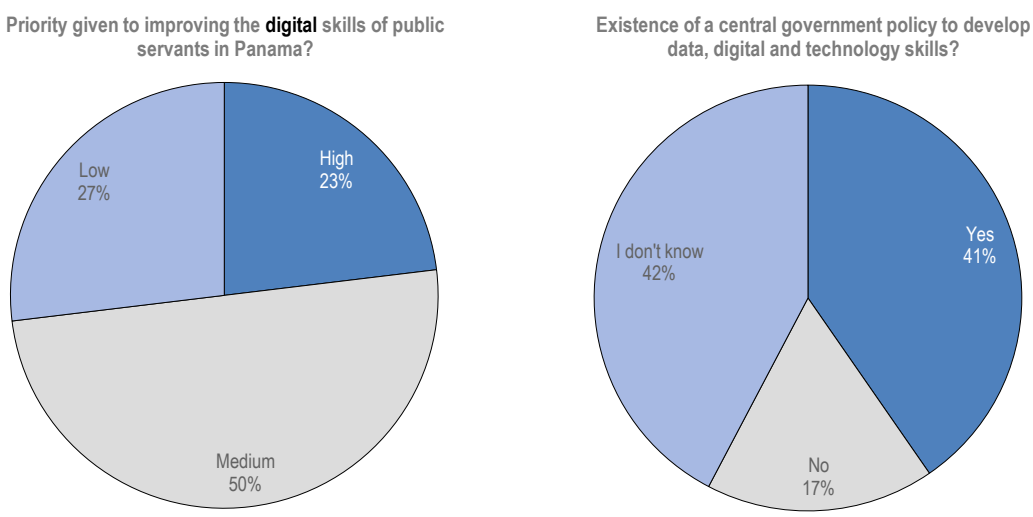
Digital skills policies in the Panamanian public sector

Attracting, maintaining and developing digital talent in the public sector and properly balancing this approach with outsourced private solutions, commissioning of ICT goods and services and public-private co-operation, are some of the most critical decisions governments face in a context of digital disruption. Ambitious frameworks of digital skills are increasingly perceived as a key requirement to seize the opportunities and manage the risks of the digital transformation, allowing the public sector to improve its processes and the services it provides to citizens and businesses.

Nevertheless, according to the *OECD Digital Government Performance Survey*, almost half of the governments of the OECD countries do not have specific strategies in place to attract, develop or retain ICT-skilled public servants (OECD, 2014[6]). While the improvement of digital skills is generally considered a priority by OECD senior digital government officials, there is significant room for improvement in order to achieve coherent and co-ordinated policy actions on this topic.

In Panama, although widely recognised as a priority area by public sector organisations, there seems to exist substantive space to reinforce the digital skills policy for the public sector. Reflecting this sense of priority, specific references to digital skills can be found in the Digital Agenda PANAMA 4.0 (AIG, 2016[7]). Nevertheless, the strategy does not contain a structured approach that can guide public sector efforts in this area.

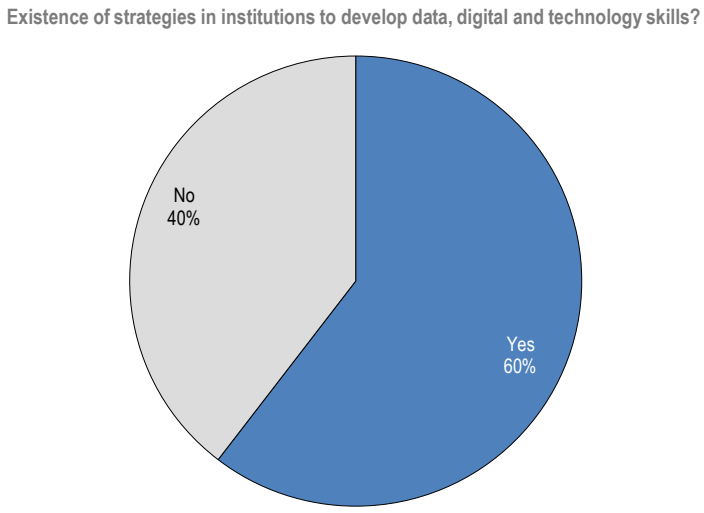
Figure 2.3. Level of priority and acknowledgement of digital skills policy in the Panamanian public sector



Source: OECD (2019[8]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

The results of the *Digital Government Survey of Panama* appear to be line with the perceptions of the OECD peer review team during the mission. When asked on the level of priority attributed to the development of digital skills of the public workforce only 23% of respondents indicated that they consider it high, reflecting a gap between the perceived need and the effective policy relevance of the topic in the country's digital agenda. Only 41% of the Panamanian institutions answered in a positive way when asked about the existence of a policy to develop data-related, digital and technology skills in the public sector (Figure 2.3). AIG's response to the *Digital Government Survey of Panama* affirms the existence of the policy though its exclusive focus is on the development of digital professional skills (e.g. training programmes organised by AIG) (OECD, 2018[9]).

Figure 2.4. Digital skills strategies in Panamanian public sector organisations



Source: OECD (2019[8]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

When questioned about the existence of strategies to develop data, digital and technology skills in their institutions, only 60% of the respondents confirmed the existence of such a policy, demonstrating a significant recognition of the need to develop capacities and capabilities to enhance the digital transformation (Figure 2.4). Nevertheless, it is important to highlight that, based on information collected during the fact-finding interviews made in November 2018 , the practice seems mostly focused on the development of digital user skills through the organisation of capacity-building initiatives.

Additionally, during the interviews, several stakeholders underlined the development of competencies for the digital transformation as a priority for the general population (e.g. through the *Infoplazas* programme). Although this clear info-inclusion angle is fundamental to promote the use of digital services by Panamanian citizens and can be equally adopted as a priority for the digitalisation of the country, the digital government policy should not minimise the importance of developing skills within the public sector. In order to continue successfully driving the digital transformation of its public sector, the development of the different kinds of digital skills represented in Figure 2.2 would represent an important asset for a sound digital government policy in Panama.

Box 2.1. Digital, Data and Technology Profession Capability Framework and GDS Academy in the United Kingdom

Two interesting initiatives from the United Kingdom government can be highlighted focused on the active promotion of digital skills in the public sector

1. **Digital, Data and Technology Profession Capability Framework**

Based in the UK's Civil Service, the Digital, Data and Technology function supports all departments across government to attract, develop and retain the people and skills to understand and contribute to government transformation. The function works namely on career management, attraction and recruitment, learning and development, and pay and reward.The Digital, Data and Technology Profession Capability Framework describes the roles on the DDaT Profession, helping the civil servants and the civil society to understand the required skills for certain jobs and also work on career progression. Data engineer, IT service manager, delivery manager or software developer are examples of the more than 30 roles identified. The DDaT profession capability framework provides a good example of how a government can better manage digital professional skills in the public sector.

2. **Government Digital Service Academy**

The GDS Academy offers digital skills courses for specialised and non-specialised professionals. User research, user-centred design, digital and agile awareness for analysts are some of the courses provided in the academy civil servants, local government employees.

The academy acts, in this sense, as an important instrument to disseminate digital skills across the public sector.

Source: GOV.UK (2017[10]), "Digital, Data and Technology Profession Capability Framework", https://www.gov.uk/government/collections/digital-data-and-technology-profession-capability-framework; GDS (2018[11]), "GDS Academy", https://gdsacademy.campaign.gov.uk/.

Managing the supply and demand of ICT skillsets in the public sector

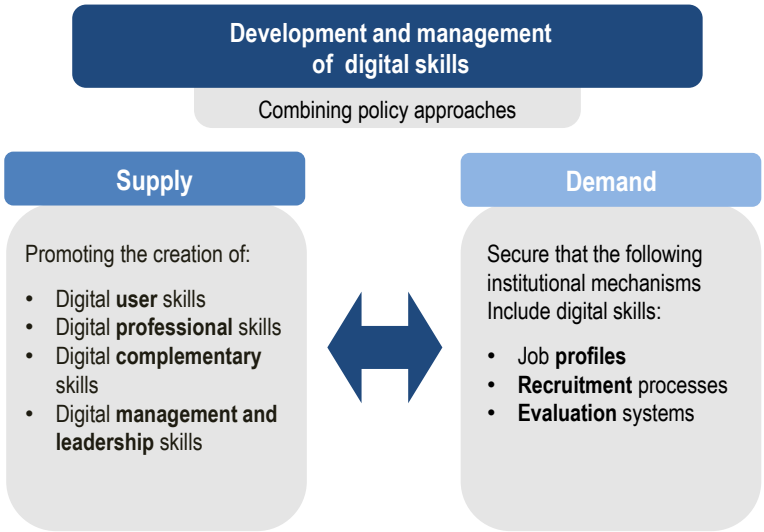
Governments across OECD countries face the challenge of responding to the demand for ICT-qualified professionals within the public sector who are able to manage and respond to the rising needs of the digital transformation of the public sector.

To meet the demand and complexity of some of the activities that require ICT specialised expertise, public sectors may pursue outsourcing approaches for ICT services. These approaches can respond to non-regular needs of expertise in certain information technology (IT) fields (e.g. develop a website or a specific software application), but also to manage in a more cost-efficient way diverse ICT routine tasks (e.g. user assistance, management of IT infrastructure). Nevertheless, the development of internal ICT professional skills is fundamental to guarantee expertise that can avoid excessive dependence from external ICT providers, a situation that several OECD member and non-member countries' representatives underline as problematic for the sustainability of digital government development.

Governments need to secure the supply of people with the right skills, providing and promoting the required training and capacity building for the public workforce. But policy action is also fundamental to guarantee that the required demand is in place to absorb the professionals holding the abovementioned digital skills. The absence of demand drivers creates few incentives to improve and take the full benefit of supply-side interventions. In this sense, governments are required to influence the demand through the introduction of

the right digital skills in institutional mechanism such as: i) public sector job profiles; ii) recruitment processes; and iii) the evaluation systems in place (OECD, 2018[12]).

Figure 2.5. Digital skills – Supply and demand policy approaches



Source: Author.

The Government of Panama could consider prioritising policy actions that co-ordinate the supply and demand of skills in the public sector as a way to streamline and reinforce its digital skills policy (see Figure 2.5). Combining and matching policy approaches for digital skills development will provide Panama with more sustainable and mature digital government capacities, allowing the country to continue its ambitious path towards a digitally enabled state. A sound digital skills policy will also support the country in building capacities across the different sectors and levels of government, guaranteeing joint leadership for digital government that can reduce the previously mentioned over-dependency on AIG in the future (see Chapter 1: Embracing strategic policy coherence), and can stimulate a more inclusive, balanced and mature digitalisation process throughout the administration.

Strengthening a digital culture in the public sector

As a fundamental building block to support the rapid digital government development during the last years in Panama, diverse initiatives contributed to improving the skills of Panamanian public officers and improving the general capacities and capabilities across the public sector. Diverse training and capacity building activities were frequently mentioned by different actors during the peer review mission in Panama City in November 2018. Special relevance was given to training activities that could support the use of new software, applications or hardware in specific institutional contexts.

The role of AIG in the development of ICT professional skills is very significant. In the last five years, the Institute of Technology and Innovation of AIG (*Instituto de Tecnología e Innovación*, ITI) has contributed to the creation, development and updating of ICT capacities across the Panamanian public sector. IT departments, IT governance, enterprise architecture, cybersecurity, management of databases or geographical information systems are just some examples of the training provided by ITI in 2018. AIG has also taken important steps in mobilising e-learning mechanisms to promote capacities across the administration. The E-Learning Project (*Proyecto E-Learning*) is expanding the Learning Platform of AIG (*Plataforma de Aprendizaje*) to include relevant ICT courses that can reinforce the competencies of

Panamanian public officials. Increasing the number of courses on the platform is one of the current priorities of AIG (AIG, 2018[13]).

To reinforce the ongoing efforts the Panamanian government could consider embracing the reinforcement of digital skills at a broader scale in the public sector as a critical priority for digital government development. The focus should be on the four types of digital skills presented above (Figure 2.2) and particular attention should be given to the following:

3. Promotion of a **digital culture** across the different sectors and levels of government, supporting the development of a mind-set that properly considers the opportunities and challenges of digital technologies across public processes and services.
4. Reinforcement of a **data culture** in the administration, that is capable of supporting a public sector that understands data as a critical asset for improved monitoring, forecasting and delivery capacities (see Chapter 3).
5. Development of a **delivery culture** across the public sector. In a digital age where citizens and businesses are used to the fast development and incredible convenience of services provided by digitally-based providers such as Amazon, Facebook or Google, the delivery of public services needs to achieve new levels of agility (see Chapter 4).

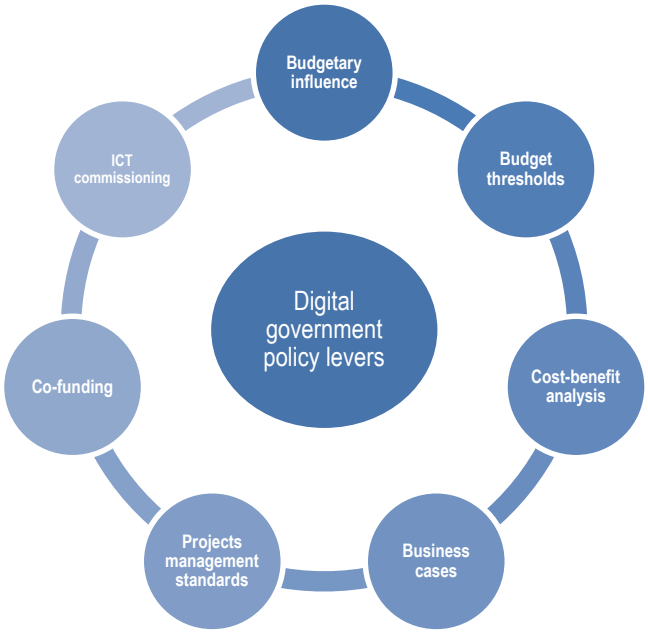
Planning of investments in digital technologies

Policy levers for coherent and sustainable digital government implementation

Given the cross-cutting and progressive digitalisation of all government activities, from automated internal processes to multichannel service delivery, digital investments represent an increasing proportion of central government procurement. Strategic and dynamic planning is required to streamline digital technology investments across sectors and levels of government. The absence or lack of priority given to this critical requirement for the digital transformation of the public sector promotes gaps or leads to duplications in public expenditures, with subsequent losses of efficiency, effectiveness and sustainability.

Chapter 1 highlighted the relevance of having a national digital government strategy and the institutional set up securing the leadership and co-ordination of its implementation, as well as the existence of an updated legal and regulatory framework (see Chapter 1) as important building blocks for effective digital government implementation. Beyond promoting efficiency, the overall co-ordination and planning of investments in digital technologies can also be an important asset to efficiently implement a national digital government policy, securing the alignment and coherence of public efforts. Governments increasingly recognise the need of having policy levers – including budget thresholds, business cases, agile project management models, ICT commissioning – to drive a coherent policy implementation across sectors and levels of government (see Figure 2.6). The development of institutional tools to plan and present investment projects for digital technologies can assist governments to make effective cost-benefit assessments of public financial efforts. This can help prioritising projects and ensuring the efficiency, effectiveness and alignment of procurement activities through synergies to avoid the gaps and overlaps that typically result from agency-driven approaches.

Figure 2.6. Policy levers for sound implementation



Source: Author.

Digital government policy levers are also fundamental for promoting the use of key enablers across the administration. Besides developing and making critical shared tools and mechanisms available, they can sustain a sound digital government. The effective adoption of these key enablers such as interoperability standards, digital identity frameworks, shared services and open source software is one of the most essential challenges faced by governments of OECD member and non-member countries. By actively promoting the adoption of the enablers through the different policy levers (e.g. accomplishment of interoperability standards and digital identity as a requisite for the approval of investments in digital technologies), governments are reinforcing the implementation capacity of their digital government policies (see Chapter 4: Providing the resources and enablers that support delivery and adoption).

The following sections will explore relevant policy levers and discuss their level of implementation in Panama.

Budgetary influence

The capacity to influence the budgetary priorities of a country and how financial resources are distributed across the administration is a critical mechanism for determining policy implementation. Budgetary procedures in the public sector are typically complex negotiation processes where finite resources are allocated to cover various needs. Different ministries representing numerous policy areas compete to obtain the largest possible share of the potential financial resources. Political influence, the capacity of aligning specific objectives with the broader national policy agenda and even technical expertise are fundamental elements to succeed in this determinant policy process.

Building on the cross-cutting role attributed to the digital transformation of the government, economy and society, and depending on the institutional mandate, attributions and political support, the public sector institution responsible for leading the digital government policy could influence the budgetary distribution of resources. Considering the level of expertise necessary to analyse investments in digital technologies, the government Chief Information Officer (CIO) or the institution responsible for the digital government policy could advise the Ministry of Finance regarding the proposals of budgeting received by the different

line ministries. Although some existing examples in OECD countries reflect this practice (e.g. Agency of Digitisation in ***Denmark*** and its role in the Ministry of Finance), this policy lever is not frequently used in public administration and sometimes relies on informal mechanisms of consultation rather than in institutionalised practices.

In Panama, considering the high-level political support for the General Administrator of AIG, budgetary influence could be better exploited by the government to shape broader fiscal and planning prioritisation. Given his/her participation in Cabinet meetings (see Chapter 1: Leadership for sound transformation), the budgetary process could be used to strategically promote policy priorities through approval criteria (e.g. delivery of services to citizens and businesses, strengthening institutional digital capacities) and including the involvement of AIG earlier in the national budgetary process.

The suggested approach could reinforce the efficiency and sustainability of national digital government efforts since the budgetary influence of AIG would encourage a systems thinking approach able to contribute to more coherent and sustainable digital government development. An empowered budgetary role of AIG could also generate opportunities for more integrated processes and improved service delivery, starting earlier in the budgetary process and creating also conditions for reinforced transparency and accountability on public sector digitalisation priorities.

Budget thresholds

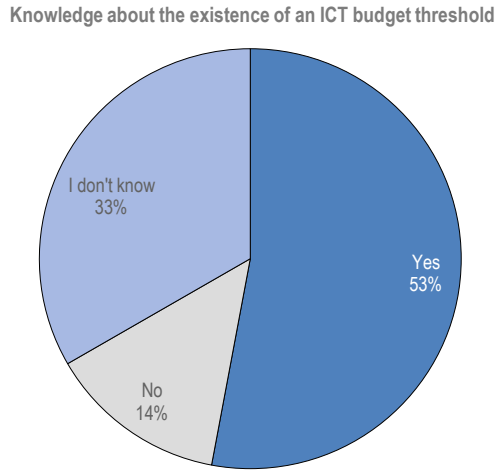
Centralised mechanisms of pre-evaluation of investments in digital technologies are frequently adopted by countries to reinforce the alignment across the administration. This pre-evaluation is typically supported by the establishment of thresholds for investments in digital technologies above a certain budgetary value. Countries such as ***Denmark, Norway*** or ***Portugal*** use this effective policy lever to improve the coherence and sustainability of the investments made, enforcing the use of policy guidelines and standards and ensuring the avoidance of gaps and overlaps in the investments.

This policy lever encourages a systems thinking approach that promotes consistent public expenses across the administration, stimulating co-operation and synergies across the different sectors of government. Moreover, the existence of budget thresholds can improve the transparency, monitoring and accountability of the investments made, allowing not only the government to better oversee in a centralised way the financial efforts made by the administration, but also to create an opportunity for civil society to better track the aforementioned efforts.

The value of the budget threshold varies substantially among OECD member countries and reflects the level of enforcement for efficiency and coherence that the government has in place. The value of the threshold can also reflect more centralised administrative cultures or conversely the greater autonomy of public sector organisations. For instance, while in ***Portugal*** the budget threshold is EUR 10 000, in ***Denmark*** it is around EUR 1 300 000 (DKK 10 000 000) and in Norway around EUR 1 033 000 (NOK 10 000 000).

In Panama, investments in digital technologies above PAB 50 000 (approximately EUR 44 000) need to be pre-evaluated by AIG. This important mechanism gives the Authority an important policy lever not only to oversee investments made across the administration, but also to influence their alignment with national digital government policy (see Chapter 2: Strategies and co-ordination for ICT procurement). The budget threshold is also an important sign of a culture of evaluation and monitoring in the country, contributing decisively to the digital maturity of the Panamanian governance of digital government experience.

Figure 2.7. ICT budget threshold – Knowledge about its existence in Panamanian public sector organisations



Source: OECD (2019[8]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

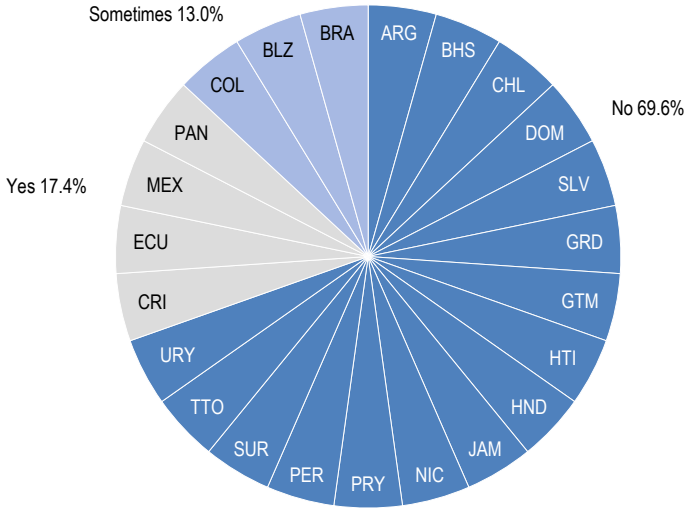
According to the *Digital Government Survey of Panama*, when questioned about the existence of a budget threshold for investments in digital technologies, 53% of the Panamanian public sector responded positively. Since almost half of the respondents were not aware of the existence of a threshold, AIG could consider reinforcing the communication to raise awareness of its role and benefits for the public sector.

Cost-benefit analysis

Given the fast pace of digital disruption, investments in digital technologies are becoming progressively complex. Governments have to deal with increasingly conservative budgets, challenging procurement methods, permanently evolving technological trends and with the increasing expectations of transparency and collaboration from private and civil society stakeholders (OECD, 2016[14]). Different cost structures need to be considered (e.g. specialised human resources, specific hardware, development of tailored software, security tests, usability tests, load tests, legal consulting services) to address dependencies from multiple variables (e.g. economic or social sector to be applied, profile of final users, expected demands, foreseen technological evolution, national or international regulations) (OECD, 2017[15]).

Reflecting the increasing efforts of governments to promote efficiency, coherence and sustainability of investments in digital technologies, 33% of the OECD countries that participated in the Digital Government Performance survey confirmed that financial benefits are always measured and 52% reporting doing it "sometimes" (OECD, 2014[6]). The examples ***Denmark***, ***Norway***, ***Portugal*** and the ***United Kingdom*** are particularly relevant for securing coherence and sustainability of ICT investments across the public sector (OECD, 2016[14]), (OECD, 2017[15]). The panorama in the Latin America and Caribbean (LAC) region is substantially different, with only 17.4% of the countries confirming the measurement of financial benefits, 13% report doing it "sometimes" and the remaining vast majority of the countries (69.6%) not using this approach (Figure 2.8).

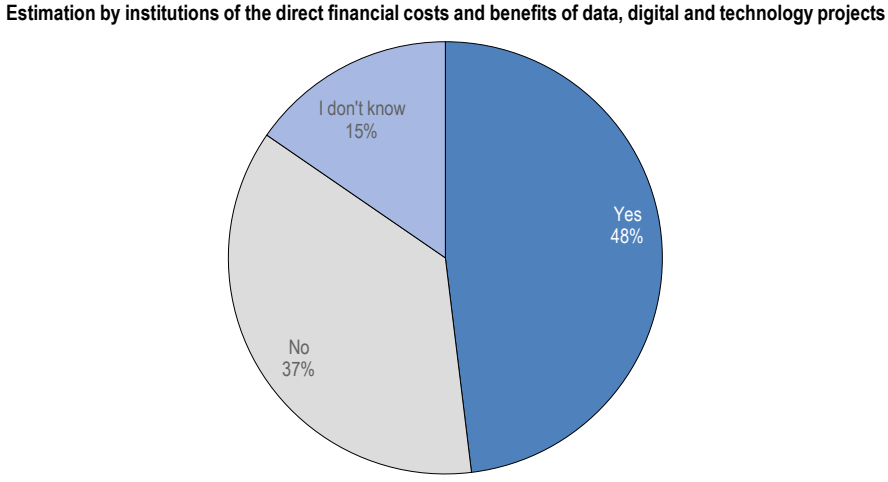
Figure 2.8. ICT financial benefits – Measurement in the central government (LAC)



Source: OECD (2016[16]), *Government at a Glance: Latin America and the Caribbean 2017*, https://dx.doi.org/10.1787/9789264265554-en.

Panama is one of the four countries in the LAC region that has a partial practice of estimating the financial benefits of investments in digital technologies This practice needs to be extended to the rest of the government. When the Panamanian public sector organisations were questioned about the estimation of ICT costs and benefits, 48% confirmed this practice, whilst 37% of respondents to the *Digital Government Survey of Panama* said they did not (Figure 2.9).

Figure 2.9. ICT costs and benefits – Estimation in Panamanian public sector organisations



Source: OECD (2019[8]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

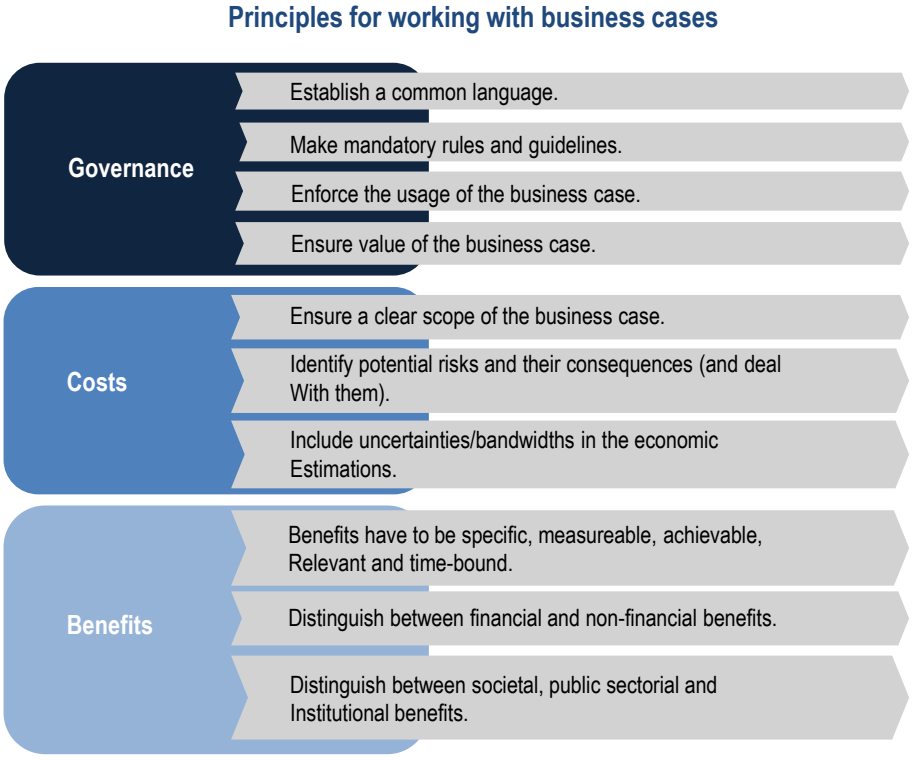
Although the estimation of financial benefits is not mandatory in Panama, almost half of public sector organisations have this practice. The Government of Panama should consider building on this significant adoption and institutionalise its use across the public sector. Since AIG already provides oversight on investments in digital technologies above a certain threshold, the estimation of financial benefits could be considered mandatory when above the threshold and a recommended practice could be provided for investments below the threshold.

Business cases

Key Recommendation no. 9 of the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[1]) underlines the importance of business cases in reinforcing the digital policy of the public sector, contributing to improved planning, development, management and monitoring of the investments in digital technologies. Used as a critical tool to inform the decision-making process on investments in digital technologies and normally associated with a budget threshold, business case methodologies should consider financial but also non-financial benefits, allowing broad planning and understanding of the outreach of policy actions.

By breaking down the economy and management of the project in diverse deliverables, business case analysis contributes to tackling and mitigating project risks. These methodologies also bring transparency and improved accountability since publication of business cases allow civil society to better follow the effective implementation of the projects and the return on the investment (Agency for Digitisation, 2018[17]).

Figure 2.10. A framework for ICT business cases

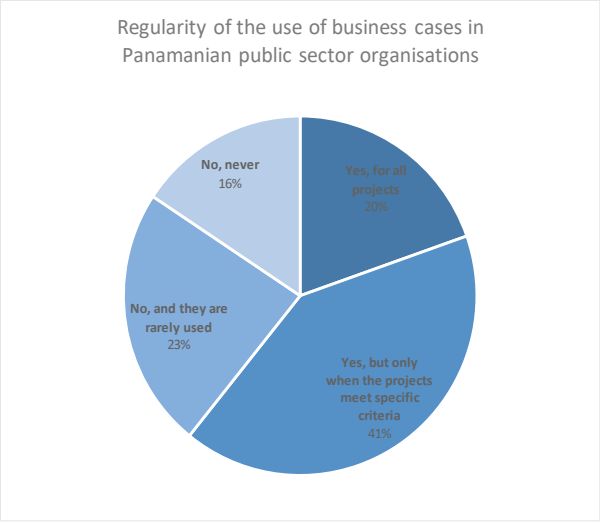


Source: Based on Agency for Digitisation (2018[17]), *Report from the OECD Thematic Group on Business Cases*, Unpublished.

Following a request from the OECD Working Party of Senior Digital Government Officials (E-Leaders), a thematic group bringing together government representatives from several countries has been working to share practices on "what works and what doesn't work" in business cases for investments in digital technologies. Based on the experience and views of its members, the abovementioned E-Leaders Thematic Group on Business Cases produced a framework of Principles for Working with Business Cases, focused on supporting countries to take the full benefit of these methodologies for sound digital government (Figure 2.10). The framework was being updated and reinforced with country practices during the drafting period of the current report.

According to the *Survey on Digital Government Performance*, the majority of OECD member countries reported using business cases. In some cases they apply to all projects and in others only when specific criteria are met (e.g. budget threshold) (OECD, 2014[6]). The results of the survey and the permanent co-ordination underway between OECD member countries, namely through the aforementioned thematic group, demonstrate that there is still room for improvement in order to mainstream the adoption of this important policy mechanism by public sector organisations.

Figure 2.11. ICT business cases – Use by Panamanian public sector organisations



Source: OECD (2019[8]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

In Panama, there is no specific standardised model of business cases for investment in digital technologies. Nevertheless, when questioned in the *Digital Government Survey of Panama* about the use of business cases for their investments in digital technologies, 20% of Panamanian public sector organisations confirmed using one for all projects and 41% when the projects met specific criteria (Figure 2.11).

Public sector institutions in Panama clearly recognised the value of these methodologies during the fact-finding interviews held by the OECD peer review team. The practice underway already demonstrates a significant level of adoption, and the Government of Panama could consider establishing the mandatory use of this important policy lever above the existing budget threshold of PAB 50 000 (approximately EUR 44 000) for coherent and sustainable digital government and increase its maturity. The mandatory use of standardised business cases for investments could help promoting improved efficiency, alignment and robustness to the public efforts and commitments already underway. The involvement of the ecosystem of digital government stakeholders in the definition of the business case, in line with the, the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[1]), would encourage buy-in and the distribution of realised benefits across the government, economy and society.

Agile project management standards

As outlined previously, encouraging the development of co-ordinated efforts across the administration is one of the main benefits of having policy levers in place that support sound planning of investments in digital technologies. In line with Key Recommendation no. 10 of the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[1]), a standardised agile project management mechanism promotes efficiency, stimulates combined efforts across the administration, encourages knowledge sharing

and supports evidence-based policy-making when managing public resources. Agile approaches also encourage government to quickly develop solutions, test them and iterate their work based on regular feedback, Agile project management standards, such as those adopted in the **United Kingdom**, are also able to promote strategic, financial, legal and institutional alignment across the different sectors and levels of government.

When based on agile and shared platforms, advanced data-based monitoring mechanisms can be adopted, contributing to comparative project performance and comparability in the public sector. If widely used across the administration, project management standards can even allow the administration to have dashboards of projects and initiatives underway, to provide a comprehensive picture of the public efforts underway to policy decision-makers.

Fifty-nine percent of the countries that responded to the 2014 *OECD Digital Government Performance Survey* confirmed having a standardised project management model for the central government (OECD, 2014[6]). The results demonstrate the increasing value that governments attribute to methodologies that can allow co-ordinated and streamlined policy action across the administration. The relevance of common management methodologies for strategic policy action can be illustrated in completely diverse contexts such as the cases of SISP Project Management Methodology in ***Brazil*** or the Project Wizard in ***Norway*** (see Box 2.2). The ***United Kingdom*** permanently promotes an agility culture across the public sector to build and run government digital services. An Agile Delivery Community shares information for agile working in the government and provided space for discussion among practitioners on the use of agile ways to deliver government projects and services (GDS, 2019[18]).

In Panama, there is no project management standard used across the administration. Nevertheless, in 2017, AIG published General Norms for the Management of ICT in government (*Normas Generales para la Gestión de las Tecnologías de la Información y Comunicación en el Estado*) (AIG, 2017[19]). The document envisages standardised management of ICT across the public sector, incorporating control guidelines that can strengthen the technological systems and infrastructures in public sector organisations. The norms cover a wide range of subjects such as the use of shared services and the management of software licences, security norms and intellectual property rights, disaster recovery plans and even mainstreaming green ICT. The norms are a good example of how AIG uses its oversight and co-ordination mandate to promote coherent and sustainable development of digital government across the Panamanian public sector.

Having in mind the willingness demonstrated by public sector organisations to improve the alignment and coherence of digital government efforts across the administration, boosting efficiency and sustainability, the introduction of an agile project management standard would constitute a critical asset for building a cohesive digitally- enabled state in Panama. Building on the General Norms mentioned above and being adequately co-ordinated with the budget threshold, the cost-benefit analysis and the business case methodology, the use of this policy lever can contribute to improved outputs and outcomes for the initiatives underway, reducing risks of non-delivery and encouraging synergies and joint efforts across different public sector organisations.

Moreover, a standardised agile project management model can contribute decisively to improve the mechanisms of central monitoring and forecasting, given the amount of potential information collected in structured ways, as well as reinforce the transparency and accountability of the several initiatives underway, allowing the stakeholders outside the government to better follow project implementation.

Co-funding

Considering that oversight and control mechanisms such as budget thresholds, cost-benefit analysis and business cases enforce policy coherence, financial incentives and mechanisms such as co-funding can be critical levers to mobilise institutional wills, secure alignment and strengthen commitments in a positive

way. More than demonstrating centralised control over investments in digital technologies, the existence of co-funding mechanisms managed or strongly influenced by the public sector organisation that leads the digital government policy can stimulate proactiveness towards solutions, entrepreneurship and innovation across the administration.

Box 2.2. Project management standards – The experiences of Brazil and Norway

SISP Project Management Methodology (Brazil)

In Brazil, although its use is not mandatory, public sector organisations are advised to use a project management methodology. The SISP Project Management Methodology (*Metodologia de Gerenciamento de Projetos do SISP*, MGP-SISP) is a set of good practices and steps to be followed in the project management of ICT projects in public sector organisations. It aims to assist public organisations involved in the System for the Administration of Information Technologies Resources (*Sistema de Administração dos Recursos de Tecnologia da Informação*, SISP) (see Chapter 2).

Very detailed, the SISP Project Management Methodology guides users in the steps for the correct development of IT projects and initiatives. Nevertheless, as stated in its online presentation, "the adoption of the methodology will depend on some factors, such as: reality, culture and maturity in project management, organisational structure, size of projects, etc.". In this sense, customising the processes and procedures described in MGP-SISP to each organisation's situation is recommended (SISP, 2011[20]). To facilitate its use, the Secretariat of ICT has designed diagrams and made available a set of templates such as a demand formalisation document, a project measurement worksheet, a project opening term, a project management plan, a schedule and a risk sheet, among others.

Project Wizard (Norway)

In 2016, the Norwegian government established the mandatory use of a best practice project management model for ICT projects over NOK 10 million, in order to maintain high levels of performance in the development of digital government, provide new opportunities for coherence and promote synergies across the administration.

The Agency for Public Management and eGovernment's (Difi) Project Wizard is the recommended (although not mandatory) project management model (www.prosjektveiviseren.no). Understood and conceived as a shared service, this online tool directed at project managers aims to reduce complexity and risks in public ICT projects. Project Wizard describes a set of phases that projects must go through, with specific decision points. It covers full-scale project management, including benefits' realisation.

Although its implementation across the Norwegian public sector is still very recent, the way the platform is structured and the fact that its adoption benefits from substantial institutional support, it appears that Project Wizard has become a strategic tool to improve the development and monitoring of digital government projects across the Norwegian government.

Source: OECD (2018[21]), *Digital Government Review of Brazil: Towards the Digital Transformation of the Public Sector*, https://dx.doi.org/10.1787/9789264307636-en; OECD (2017[15]), *Digital Government Review of Norway: Boosting the Digital Transformation of the Public Sector*, https://dx.doi.org/10.1787/9789264279742-en.

This strategic policy lever is also able to mobilise synergies across different public sector organisations for the development of initiatives and projects in key areas naturally aligned with the vision, objectives and goals of the national digital government policy. Additionally, co-funding should be strongly aligned with the digital government key enablers in place, ensuring that initiatives and projects that will benefit from financial support accomplish strategic systems-thinking prerequisites such as the use of the interoperability guidelines and standards or the digital identity framework.

In the OECD context, few examples can be found of leading digital government organisations that are responsible for managing or capable of deeply influencing co-funding for the development of digital government. Nevertheless, examples such as the ***Portuguese Agency*** for Administrative Modernisation that manages the provision of specific European structural funds, demonstrate how decisive this policy lever can be to effectively influence in a co-ordinated way the development of the digital government policy in the country (see Box 2.3). ***Uruguay*** presents also a relevant example of centralised and strategic management of ICT funds (OECD, 2016[14]).

In Panama, AIG does not benefit from co-funding capacities that would constitute an extra policy lever for the co-ordination and providing strategic leadership of the digital government policy across the administration, Building on the widespread and positive recognition of the mandate of the Authority. If properly combined with the adoption of a new business case model and project management methodology, this strong policy lever could also contribute to the recommended shift from an operational to a more strategic policy role of AIG, allowing the Authority to consolidate the necessary leadership of the digital government policy in Panama (see Chapter 1: Enabling legislation and digital rights).

Box 2.3. Governing the investment in digital technologies in the Portuguese public sector

The Portuguese Agency for Administrative Modernisation (*Agência para a Modernização Administrativa*, AMA), an executive agency located within the Presidency of the Council of Ministers, has substantive powers in terms of the allocation of financial resources and approval of ICT projects.

AMA manages the administrative modernisation funding programme, which is composed of EU structural funds and national resources (SAMA2020). The programme is an attractive source of funding for public sector organisations planning to develop new ICT projects. This mechanism gives AMA important institutional leverage 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 pre-approved by 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.

Source: OECD (2016[14]), Digital Government in Chile: Strengthening the Institutional and Governance Framework, https://doi.org/10.1787/9789264258013-en

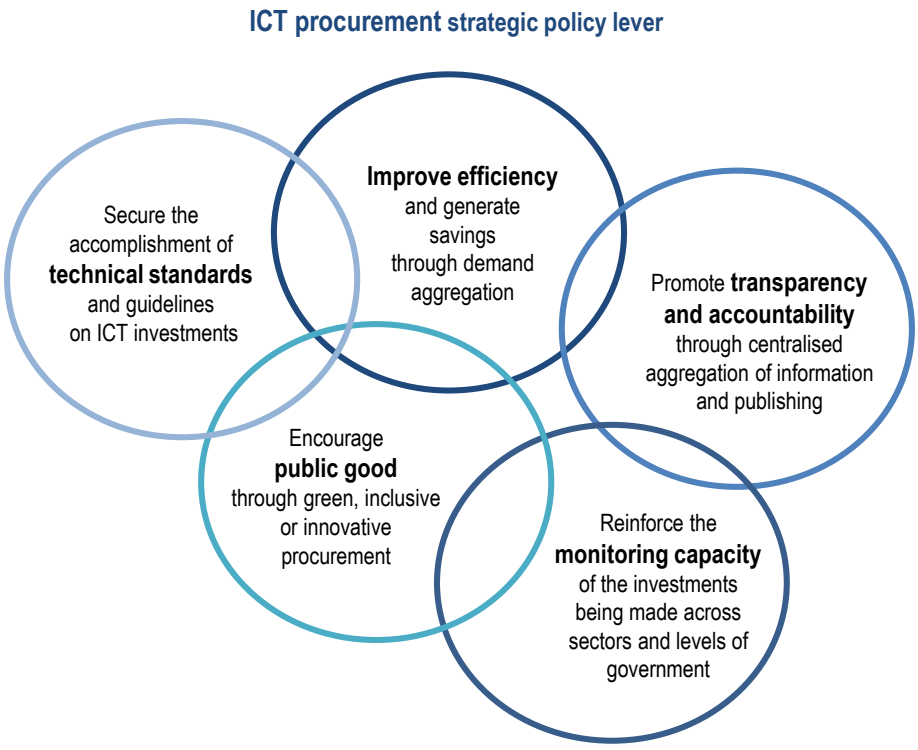
Towards digital commissioning

Why ICT procurement matters

As governments face increasing expectations from citizens and businesses and need to manage limited budgets to respond to them, core government activities such as public procurement become strategic in improving efficiency and effectiveness. In OECD countries, public procurement spending represents about 12% of gross domestic product (GDP), ranging from 5.1% in Mexico to 20.2% in the Netherlands. The large volume associated with procurement procedures raises risks of inefficiency, mismanagement and lack of integrity, but also enables the use of this important policy mechanism for the achievement of broader economic and societal impacts (OECD, 2017[22]). If used strategically, public procurement can contribute decisively to more productive and inclusive economies, more efficient public sectors, more inclusive and more trusted institutions (Gurría, 2016[23]). The *OECD Recommendation on Public Procurement* (2015[24]) promotes strategic and holistic use of this institutional mechanism across sectors and levels of government through overarching guiding principles addressing the entire procurement lifecycle.

Specifically developed to support governments to drive the digital transformation of the public sector, the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[1]) identifies in its Key Recommendation no. 11 the existence of an ICT procurement framework as a fundamental requirement for a sound digital government. Given the progressive penetration of digital technologies in all sectors and levels of government, transforming the way governments operate and relate with citizens and companies, ICT procurement is a strategic policy lever capable of aggregating multiple strategic ends, from efficiency to transparency, from monitoring capacity to enforcement of standards and guidelines (see Figure 2.12).

Figure 2.12. ICT procurement – Different outcomes



Source: Author.

Given the rapidly evolving technological trends that governments face, the procurement of digital technologies is increasingly required to embrace agile approaches for the acquisition of services and goods. Updated legal and regulatory frameworks should support government responses to challenges such as cloud-based solutions, news requirements in terms of data ownership and sovereignty or the transition from legacy systems. Investments on digital technologies are at the forefront of the increasingly complex challenges facing public procurement but also allow for the experimentation and use of innovative and advanced solutions that can be replicated in the future in other sectors and work streams. Moreover, investment in digital technologies is evolving from an efficiency and transparency-centred perspective to a more transformative-driven approach. Issues of innovative procurement and strategic procurement (e.g. green procurement, inclusive procurement) are increasingly a priority for OECD countries.

Strategies and co-ordination for ICT procurement

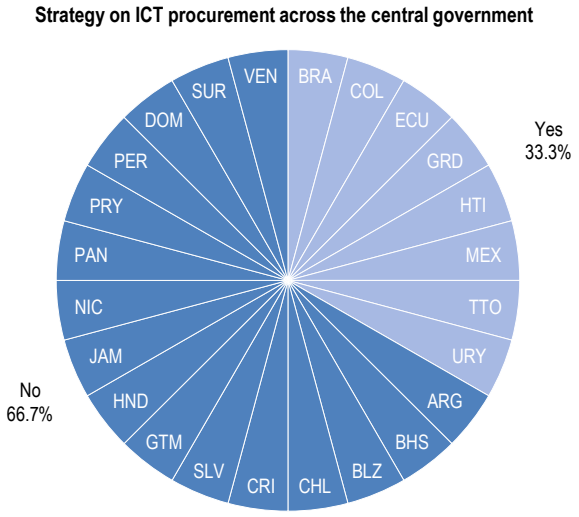
Governments of OECD member and non-member countries attribute a growing relevance to specific strategies and frameworks that can secure a strategic use of ICT procurement in the public sector. As

mentioned above, the opportunities and challenges generated by the progressive adoption of new technological trends (e.g. cloud computing and the emergence of platform-as-a-service or software-as-a-service models), require governments to have strategic vision, leadership and co-ordination capacity to properly to address the changing procurement needs in a context of digital disruptiveness. The existence of specific policies on ICT procurement, materialised in specific strategies, action plans and frameworks, reflects the importance and commitment of governments in this area.

Fifty-two percent of the OECD countries that responded to the *OECD Digital Government Performance Survey* (2014[6]) have an ICT procurement strategy applicable to the central government. The panorama in the LAC region is less positive with one-third of the countries (33%) reporting having the abovementioned strategy, demonstrating room for improvement in the region regarding a clear establishment of procurement as a strategic policy lever for a digitally-enabled state (Figure 2.13).

Panama does not have a specific strategy dedicated to ICT procurement in place (OECD, 2019[25]). Nevertheless, in 2018, AIG approved Resolution No. 49 of 14 June containing Guidelines for the Acquisition of Information Technology and Telecommunication Goods and Services (*Guía para la adquisición de bienes o servicios de tecnologías de la information y telecomunicaciones*), containing very detailed instructions to be followed by public sector organisations when managing their ICT procurement processes (AIG, 2018[26]). The guidelines were approved to support the Panamanian public sector in preparing the AIG process of evaluating investments in digital technologies above the threshold of PAB 50 000 (approximately EUR 44 000) (see Chapter 2: Budget thresholds). The detailed guidelines are meant to guide the Panamanian public sector organisations in a broad range of issues such as the use of open standards, evaluating the platforms and services provided by AIG and considering mechanisms to ensure the sustainability of projects, Although a specific ICT procurement strategy is not in place in Panama, the aforementioned guidelines are an important institutional mechanism to frame and regulate ICT procurement in the public sector, allowing AIG to reinforce its oversight mandate and contribute to the coherence and sustainability of investments in digital technologies across the administration.

Figure 2.13. Existence of an ICT procurement strategy in LAC countries

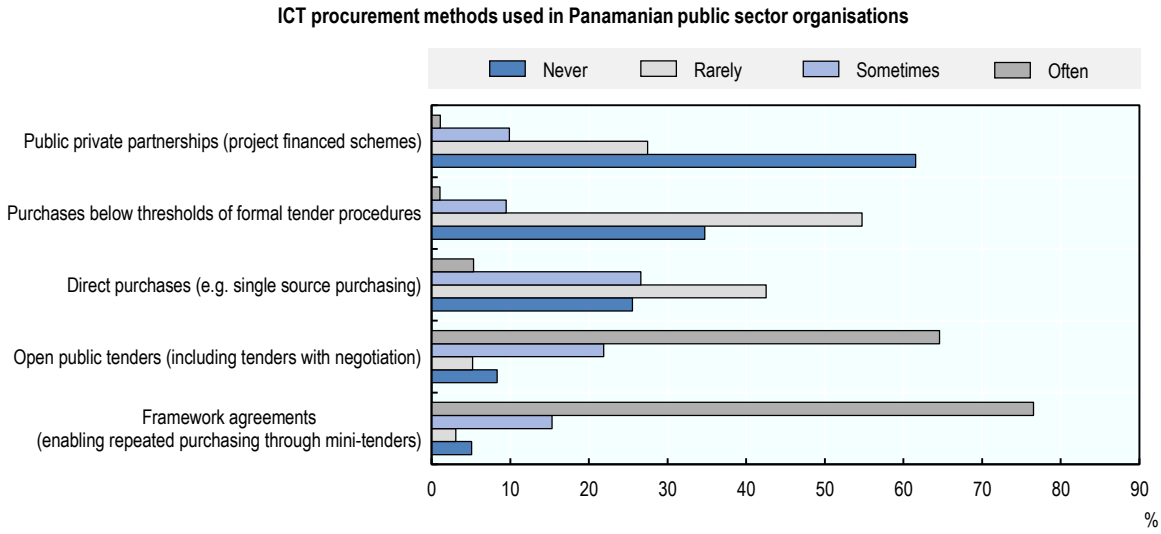


Source: OECD (2016[16]), *Government at a Glance: Latin America and the Caribbean 2017*, https://doi.org/10.1787/9789264265554-en, updated by OECD (2019[8]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

The different methods used to procure ICT goods and services can also provide insightful information about how public sector institutions manage investments in digital technologies. According to the *Digital*

Government Survey of Panama (OECD, 2019[8]), framework agreements that enable repeated purchasing of services and goods through mini-tenders are often used by 76.5% of Panamanian public sector organisations. Open tenders are also frequently used (64.6%) according to the survey. The regular use of these two methods for the procurement of ICT goods and services demonstrates strong compliance with the regulations in place, reflecting a significant maturity in the investments in digital technologies in Panama.

Figure 2.14. ICT procurement – Methods used by Panamanian public sector organisations



Source: OECD (2019[8]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris.

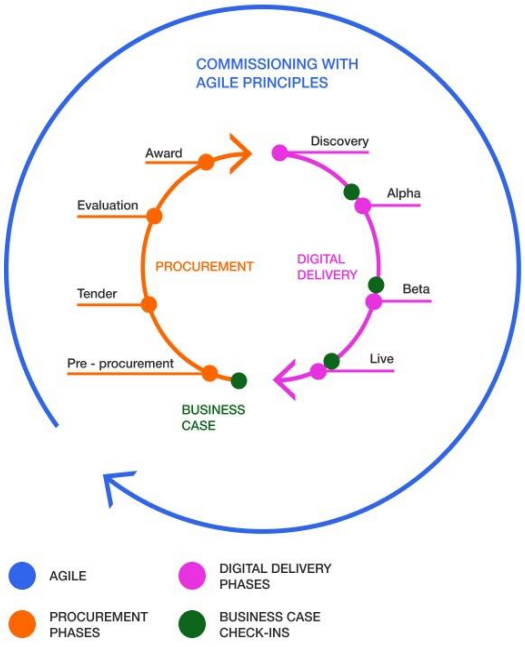
The necessary update of the procurement law was one of the most clearly highlighted requests underlined by the ecosystem of stakeholders during the 2018 fact-finding interviews . A consensus was found about the inadequacy of the current legal and regulatory framework to support an agile acquisition of ICT goods and services. The legal and regulatory framework in place was also considered insufficient to support the development of public e-procurement in the country. Given the strategic importance recognised by AIG to increase efforts towards an updated legal and regulatory framework in these areas, improvements are already being undertaken in order to overcome the abovementioned barriers and obstacles for more agile ICT procurement in Panama.

From ICT procurement to digital commissioning

In order to better respond to the speed and complexity of the digital evolution underway, countries are increasingly expected to adopt agile procurement approaches. The digital disruption determines that different cost structures need to be considered for investments in digital technologies (e.g. specific hardware and software, specialised capacity building, new requirements in terms of usability and security), as well as its necessary application to diverse and ever-mutating contexts (e.g. transformation in the different sectors of government, new legal and regulatory frameworks, citizens' digital rights). In this sense, an evolution from an ICT procurement approach, focused on the technology itself to an ICT commissioning culture, where providers are involved earlier in the commissioning process, through agile mechanisms and proper feedback loops as part of business case check-ins is required to deliver value and realise benefits in the digital age (OECD, 2017[15]; 2018[21]).

Building on an increasing consensus among countries about the aforementioned shift, the OECD Thematic Group on ICT Commissioning, led by the United Kingdom and bringing together representatives from several governments, has been working since 2016 on the concept of agile commissioning and how it can be usefully applied to investments on digital technologies (see Figure 2.15 and Box 2.).

Figure 2.15. Agile commissioning



Source: GDS/OECD (2019[27]), *The ICT Commissioning Playbook*, https://playbook-ict-procurement.herokuapp.com/.

Box 2.3. The ICT Commissioning Playbook

Focused on practical advice for specific situations or "plays", the thematic group developed a Playbook on ICT Commissioning that could support governments in embracing this advanced paradigm (GDS/OECD, 2019[27]). The group agrees that an agile commissioning approach should encourage governments to:

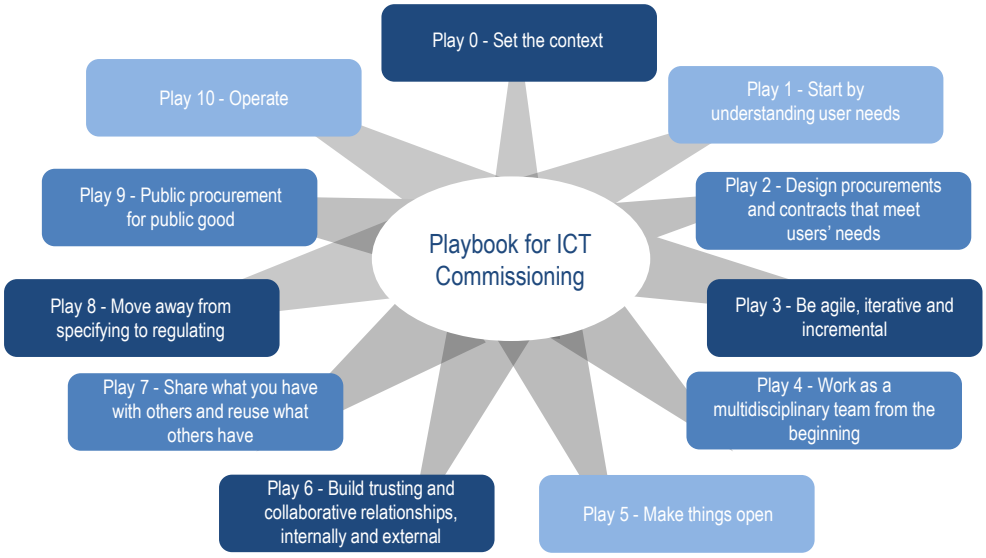
- open up data throughout the procurement and contracting lifecycle;
- promote more modular and agile approaches to contracting;
- secure procurement transparency to help tackle corruption and improve value for money;
- stimulate and access a more diverse digital and technology supply base;
- stimulate more flexible, digital, agile and transparent interactions focused on joint delivery; and
- share and reuse platforms and components, and better practices for delivering successful programmes (Smith, 2017[28]).

As a result of the inputs received from the governments and other interested stakeholders, the thematic group was able to agree on a set of principles that could support the public sector in the shift towards ICT commissioning. Setting the context, understanding users' needs, guaranteeing agility, embracing openness and transparency, sharing and reuse, and public procurement for good are some of the principles highlighted that can help governments evolve from an efficiency and transparency-centred perspective to a more transformative-driven approach on investments in digital technologies (see Figure 2.16).

Source: GDS/OECD (2019[27]), *The ICT Commissioning Playbook*, https://playbook-ict-procurement.herokuapp.com/.

Building on the progressive consensus found among senior officials in charge of investments in digital technologies in the OECD countries' public sectors, the digital transformation of procurement goes far beyond having advanced e-procurement systems/platforms in place. A real transformation of acquisition processes should be really understood from a digital by design perspective, where digital technologies are embedded from the start in the design, development, delivery and monitoring of procurement frameworks and processes. Efficient, open, trustworthy, interconnected and intelligent e-procurement platforms are only a part of the abovementioned shift towards commissioning approaches that take full advantage of the innovative potential of digital technologies.

Figure 2.16. ICT commissioning – Draft of principles



Source: Based on GDS/OECD (2019[27]), *The ICT Commissioning Playbook*, https://playbook-ict-procurement.herokuapp.com/.

Additionally, the digital transformation of public sector procurement should be understood as including the potential and expected capacity to use and reuse data as a core asset to improve procurement procedures; through better monitoring and forecasting; and in making procurement procedures simpler, less bureaucratic, more transparent and accountable. Commissioning is, in this sense, one of the positive outputs of a sound data-driven public sector (see Chapter 3).

During the fact-finding mission, the Panamanian institutions consensually agreed on the potential for improving the management of investments in digital technologies, and that AIG more clearly stated as a short-term policy priority, that the Government of Panama should use this opportunity to leapfrog towards a commissioning approach. Building on the experiences from some OECD member countries such as Australia, Canada, New Zealand, United Kingdom, Panama has the opportunity to improve its policy of investments on digital technologies, making it more aligned with user needs, involving the providers throughout the procurement lifecycle and, in this sense, decisively enabling agile commissioning to seize the digital transformation underway. The foreseen short-term update of the ICT procurement legal and regulatory framework should fully integrate this ambitious mind-set.

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3 Data driven public sector

This chapter analyses the experience of the data-driven public sector in Panama. It introduces a model for data governance featuring the facets of leadership and vision, capacities for coherent implementation, regulation, the data value cycle, and data architecture and infrastructure. The chapter then considers the application of data to unlock public value in terms of anticipatory governance, the design and delivery of policy and services, and performance monitoring and evaluation. Finally, the chapter explores the role of data in building trust with a discussion of transparency, data protection, citizen consent and ethics.

Introduction

As governments undergo digital transformation, there is a growing recognition of the importance of data to underpin, shape and inform the activity of the public sector. Governments produce, collect and use data on an ongoing basis. However, this can be done in ways that emphasise existing siloes and without respecting standards or considering how it might duplicate data stored elsewhere. Sometimes this is down to a deliberate decision; other times it is simply that organisations are unaware of the impact of their choices. In other ways, the legal or governance structures in a country may be an obstacle to the easy use or reuse of the data that governments already hold. This is indicative of an inadequate understanding or recognition of data as a strategic asset for public sector organisations.

As governments have matured in their recognition of data as a strategic asset, much effort has focused on the importance of Open Government Data (OGD), leading to the publication of public sector datasets to stimulate private sector innovation, provide opportunities for the economy at large and increase government accountability (OECD, 2018[1]). In other cases, the use and reuse of data internally within government to make policy, design services or monitor performance is patchier. However, neither scenario is yet delivering fully on the potential for governments to transform the way in which they serve the public. Indeed, whilst progress has been made on approaches to both data within government and OGD, it is important that approaches to the role of data recognise that both are fundamental to transforming government rather than issues that can be handled separately.

Box 3.1. *OECD Recommendation of the Council on Digital Government Strategies*: Principle 3

The [OECD] Council […] on the proposal of the Public Governance Committee […] recommends that governments develop and implement digital government strategies which:

- Create a data-driven culture in the public sector, by:
- developing frameworks to enable, guide, and foster access to, use and re-use of, the increasing amount of evidence, statistics and data concerning operations, processes and results to (a) increase openness and transparency, and (b) incentivise public engagement in policymaking, public value creation, service design and delivery;
- balancing the need to provide timely official data with the need to deliver trustworthy data, managing risks of data misuse related to the increased availability of data in open formats (i.e. allowing use and re-use, and the possibility for non-governmental actors to re-use and supplement data with a view to maximising public economic and social value).

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

Principle 3 of the *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[2]) (Box 3.1) discusses the need for frameworks that support the re-use of data and set the basic foundations to unlock the value of raw and isolated data to provide a foundational building block for the delivery of a twenty-first century, digital government. It is in this context that the OECD has proposed the concept of a data-driven public sector (DDPS) (van Ooijen, Ubaldi and Welby, 2019[3]). Countries that have implemented a strategic approach to the use of data throughout the public sector are better able to anticipate societal trends and needs and consequently develop more effective long-term plans. Additionally, data plays an important role in the ongoing design and delivery of public services and efforts to analyse and evaluate all types of government activity in order that the information helps to make improvements and offers transparency about success and failure, in ways that strengthen accountability and stimulate public engagement and trust.

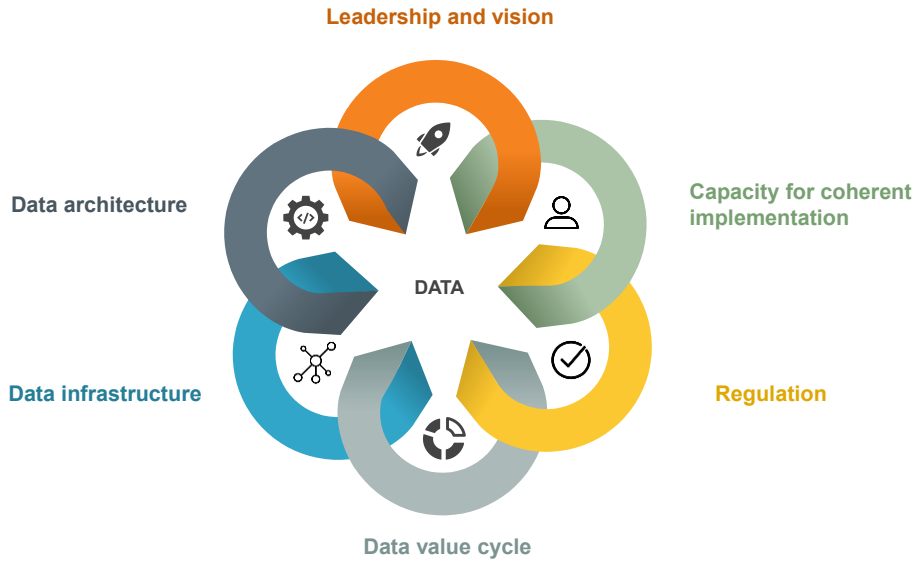
Figure 3.1. Opportunities of a DDPS

Anticipatory governance	Design and delivery	Performance management
• Forecasting to proactively identify developments and future needs • Foresight to prepare for multiple plausible alternative outcomes	• Better predicting policy solutions • Engaging with citizens as co-value creators • Responding better to citizens' needs	• More efficient use of resources • Increase in resources • Higher quality and evaluation • Continuous improvement

Source: van Ooijen, C., B. Ubaldi and B. Welby (2019[3]), "A data-driven public sector: Enabling the strategic use of data for productive, inclusive and trustworthy governance", https://doi.org/10.1787/09ab162c-en.

In order to maximise the value of data when applied in these ways, it is essential for countries to recognise the foundational role of data. The OECD has refined this concept of DDPS to propose a comprehensive model for data governance that reflects the importance of several areas in successfully delivering on the promise of data (Figure 3.2) (OECD, 2019[4]; OECD, 2019[5]).

Figure 3.2. Data governance in the public sector



Source: OECD (2019[5]), *Digital Government Review of Argentina*, OECD Publishing, Paris.

The data governance model identified in Figure 3.2 considers six different elements as critical to the success of the DDPS in a country. They are:

1. leadership and vision
2. capacity for coherent implementation
3. regulation
4. data architecture
5. data infrastructure
6. data value cycle.

This reflects the importance of establishing how authority, control and shared decision-making take place in the context of managing data assets between those with a shared interest in those data assets, whether within one or across multiple organisations (Ladley, 2002[6]). Whilst certain aspects of that data governance are done by individuals carrying out a particular functional role, this is not a transactional set of tasks but a strategic competency that covers the activities, capacities, roles and instruments to successfully enshrine a data-driven culture within the activity of a government.

Although some of these areas may be covered by existing practices within a country, any lack of strategic co-ordination or clarity of leadership may result in sub-optimal outcomes and disconnected or siloed approaches. In some countries this may result in a focus on a particular aspect of the data governance agenda, perhaps by implementing technical or operational elements (such as data standards) or prioritising legislation (perhaps on interoperability) but not considering the broader, government-wide concerns of leadership, data strategy and the necessary co-ordinating guidelines and bodies that might be required.

This chapter will consider how the experience of Panama fits into this data governance model before exploring how data has been applied according to the opportunities of a DDPS shown in Figure 3.1. It will conclude with a consideration of how Panama is approaching the role of data in establishing trust.

Data governance in Panama

Leadership and vision

The Panamanian Government strategy (Gobierno de Panama, 2014[7]) recognises that development of information and communications technology (ICT) would only be an effective tool for modernising the state if accompanied by measures allowing for internal collaboration and interoperability. This strategic commitment built on the provisions made in Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[8]) for all government databases to be interoperable.

Furthermore, the country's commitment to leadership in terms of the transparency and accountability of government through the use of OGD was marked by Law No. 33 of 25 April 2013 that created the National Authority of Transparency and Access to Information (*Autoridad Nacional de Transparencia y Acceso a la Información*, ANTAI) (Asamblea Nacional, 2013[9]). Alongside ANTAI, there have been important efforts to encourage the modernisation of the National Institute of Statistics and Census (*Instituto Nacional de Estadística y Censo*, INEC) and the role they both play in supporting the open government and open government data agenda in Panama.

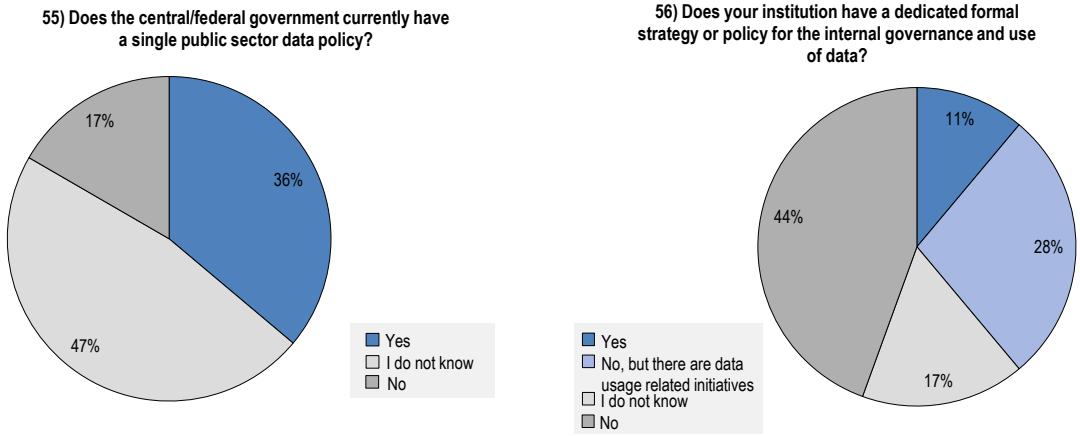
This recognition of the importance of OGD and Panama's commitment to it is supported by Executive Decree No. 511 of 24 November 2017 (Ministerio de la Presidencia, 2017[10]) and exemplified by the National Action Plan for OGD (*Plan de Acción Nacional de Datos Abiertos de Gobierno*) (Autoridad Nacional de Transparencia y Acceso a la Información, 2017[11]) which identified several important strengths of Panama's approach to OGD as well as highlighting areas in which greater efforts were needed. A strong OGD policy framework is supported not only by the work of ANTAI but also by a director-level appointment within the National Authority for Government Innovation (*Autoridad Nacional de Innovación Gubernamental*, AIG) that focuses on the open data strategy. A commitment to OGD was also shown by six of the organisations that participated in the institutional survey having Chief Data Officers with a remit focused on open data.

This evidence of high-level political support for a strategic approach to OGD should be commended but, as Panama, AIG and ANTAI look towards their future ambitions for the country, there is an important need for this understanding of OGD to be complemented by a broader vision for the possibilities of the DDPS. When asked to identify the country's data strategy, AIG and several other institutions highlighted the National Action Plan for OGD (Autoridad Nacional de Transparencia y Acceso a la Información, 2017[11]).

Although this is an excellent resource, identifying several important crosscutting elements for the future of data governance in Panama, it is not a document designed to implement a DDPS approach.

Figure 3.3 shows that only 36% of institutions identified there being a national data strategy. Irrespective of the content of the National Action Plan and its focus on OGD, this figure suggests an awareness gap between the centre and the institutions themselves. This may in part be due to the closed way in which the National Action Plan for OGD was prepared, as the survey indicated that this was carried out entirely at the centre by ANTAI and AIG with limited participation. As Panama considers the development of any renewed data strategy that places the concept of DDPS at its heart, there would be benefits to approaching it in line with the *OECD Recommendation of the Council on Digital Strategies* (OECD, 2014[2]) in terms of wider participation and engagement of those across government. The survey showed that those outside the centre would likely add value to that process; Figure 3.3 shows that several institutions have experience in preparing their own internal data strategies. Of the 51 institutions that supplied answers, 6 (or 11%) have an institutional data strategy but a further 13 (26%) have put in place initiatives to support internal data governance and the use of data.

Figure 3.3. National and institutional data strategies in Panama



Note: Based on the response of 51 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 55: "Does the central/federal government currently have a single public sector data policy?" and Question 56: "Does your institution have a dedicated formal strategy or policy for the internal governance and use of data?".

Several OECD countries are now exploring how to create a focal point for leading and stewarding discussions about the role of data (including but not limited to OGD) in their digital transformation. In ***Korea***, there is a Chief Data Officer for the country, as well as specific requirements for a similar role in every public institution. This approach is legislated for in ***United States*** where the Foundations for Evidence-Based Policymaking Act of 2018 stipulates, "the head of each agency shall designate a non-political appointee employee in the agency as the Chief Data Officer of the agency" (115th Congress of the United States, 2019[13]). A similar ambition is being explored in ***Peru*** following the recommendations of the recent Digital Government Review (OECD, 2019[14]). Creating a specific role is a symbolic statement about the importance of data. It is also practically valuable in identifying the role and establishing the suitable mandate to lead and steward the development of national and institutional data strategies, and deliver the necessary change to embed a data-driven culture.

In Panama, ten institutions have a Chief Data Officer with six of those being focused on open data only. A further 21 institutions are planning to introduce a Chief Data Officer in the near future. Nevertheless, this excludes the government itself, which does not currently have a figurehead for leading the strategic

conversation, and decisions, about the role of data. AIG has responsibility for co-ordinating this activity, but there is a need to provide clearer leadership and ensure that the country has a clear strategy for achieving its ambitions to be a DDPS. The role of Chief Data Officer can provide a clarity of purpose in thinking through the requirements and needs associated with the data strategy for Panama. Such a strategy needs to consider the role of data for internal use in helping the government to function more effectively, the application of data for external impact and the interactions that stimulates with the public, as well as the role and opportunities for OGD to stimulate the economy and offer greater transparency and accountability.

Although questions of data infrastructure (see Chapter 3: Data architecture and infrastructure) are important, the survey responses identifying the biggest challenges to the application of data in the Panamanian public sector are instructive about what any national or institutional Chief Data Officer should prioritise in their data strategy. Many challenges were recognised as being medium barriers but the following issues were identified as being a strong barrier more often than weak:

1. Guidance on the governance and use of data in policymaking and service design.
2. Data gathering methods, sources, quality and relevance for policymaking and service design.
3. Capability training on data management and use for policymaking and service delivery.
4. Lack of clear value proposition and cost benefit for the use of data in policymaking.
5. Need for checks and balances and accountability for data-driven decision-making in policymaking, service design and service delivery.

This contrasts with the areas of relative strength where the issue was identified as being a weak barrier more often than strong:

1. Data storage capacities are not an important issue in policymaking, service design or organisational governance and management.
2. Information technology (IT) infrastructure is not seen as a barrier to policymaking or service design.
3. Digital security risk management is not seen as an issue for organisational governance and management.

Collectively, these observations underline that Panama has been able to demonstrate leadership and resolve issues from a technology point of view but that there are gaps in the guidance, training, rationale and evaluation of data-driven activity. These are areas for which leadership and vision are more important than the implementation of technology.

Capacities for coherent implementation

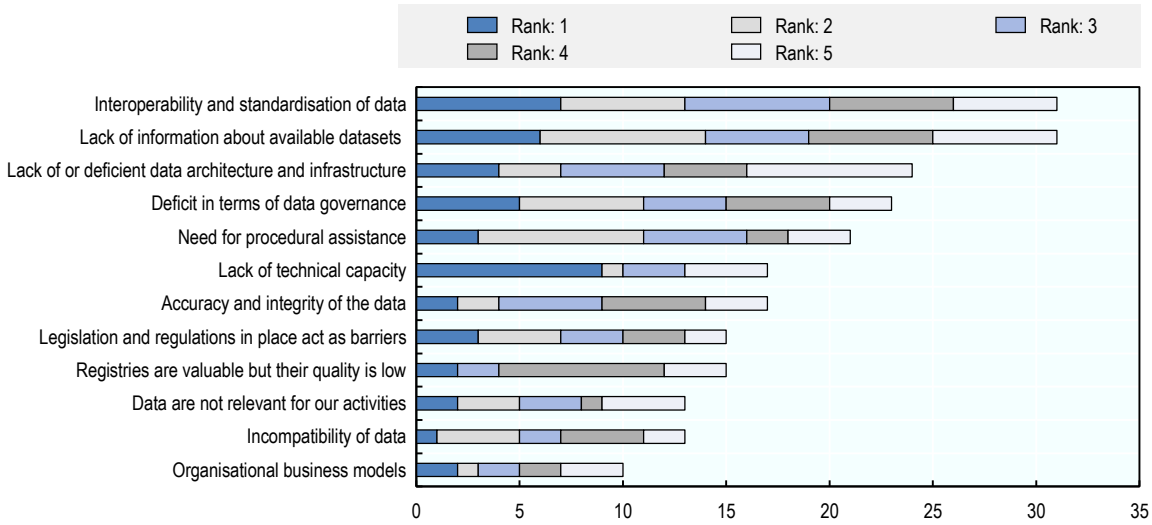
Leadership and vision are of critical importance in creating the strategic conditions for successful implementation of a DDPS but countries need to also address their capacities for coherent implementation within and between government institutions.

Panama has seen effective co-ordination and activity between ANTAI and AIG in its approaches to OGD but this has not had such a significant impact in the discussion about data more broadly and its role in the transformation of institutions throughout the public sector. Panama has introduced the appropriate legal framework to make it possible for the practical activities of data sharing and re-use to take place across the public sector with Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[8]) requiring the interoperability of all government databases and establishing the once-only principle for data collection and re-use. Moreover, Resolution No. 12 of 16 November 2015 (Consejo Nacional para la Innovación Gubernamental, 2015[15]) established the National Interoperability and Security Committee to co-ordinate efforts for data interoperability and involve executive representative (representing the highest authority with decision-making power) and technical representative (which should be the information technology director) from a number of institutions. Furthermore, Resolution No. 15 of 3 May 2016 (Consejo Nacional para la

Innovación Gubernamental, 2016[16]) set out the interoperability framework for Panama and the steps that were expected for how institutions would achieve its implementation with resolutions so far having been made for the security, transportation, agriculture and logistics sectors (Consejo Nacional para la Innovación Gubernamental, 2016[16]; Consejo Nacional para la Innovación Gubernamental, 2018[17]).

However, Figure 3.4 shows that there is something of a gap between the theory of the interoperability framework managed by the National Interoperability and Security Committee and the experience of institutions across the Panamanian public sector. The most frequently identified barriers to the coherent implementation of a data-driven culture include a lack of information about available data, a lack of interoperability for that data or the standards which shape its architecture and the processes by which that data can be accessed and applied. More than one organisation identified that data are dispersed across multiple institutions that do not want to share that data with other organisations, resulting in the duplicated collection of the same information and less effective government as a result. Others cited that the lack of canonical data supplied through registers results in challenges of accessing complete or accurate information.

Figure 3.4. The biggest barriers to the use of data within institutions



Note: Based on the response of 46 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 69: "Please indicate the five biggest challenges/barriers regarding the use of data by your institution".

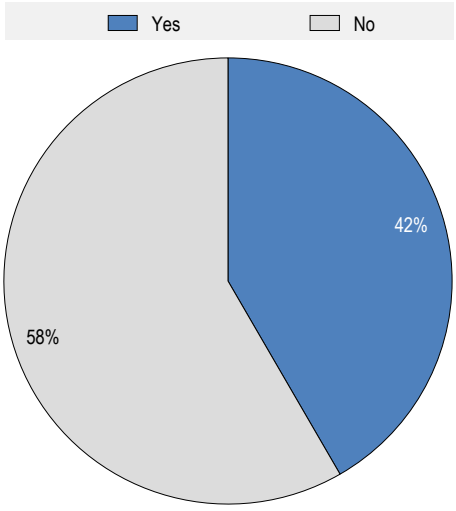
This suggests that AIG may need to revisit its role as central co-ordinator and explore ways of enforcing particular behaviours or becoming more involved in on the ground delivery to close this gap between theory and practice. Whilst a steering committee like the National Interoperability and Security Committee has provided an important forum for setting the agenda for this aspect of data governance, a shift in approach may yield dividends. Under the oversight of a Chief Data Officer for the country, the development of country and institutional DDPS strategies should empower a network of Chief Data Officers and data professional communities of practice to identify the priorities for resolving some of the most pressing issues with data sharing and interoperability. This may require additional financial, practical and technical support to ensure that the good work in creating the conditions for success can address these outstanding areas to allow DDPS to flourish.

Whilst regulation (see Chapter 3: Regulation) should be considered in terms of hard levers like legislation and softer measures like guidelines, an important area for shaping the capacity for coherent implementation of DDPS is the availability of capable staff.

Law No. 33 of 25 April 2013 (Asamblea Nacional, 2013[9]), which created ANTAI, also made provision for an Information Officer and associated team to exist within each public institution and for them to be given the responsibility for proactive transparency, open data and information requests. However, this role and this team are not always in place and, as discussed in Chapter 3: Leadership and vision, the focus of this responsibility is more informed by an OGD agenda than by the implementation of a DDPS. Several institutions do have a team of people that focus on statistical information or data analytics, with the size of those resources ranging from 1 or 2 to more than 20. However, these are discrete teams created to process data that may otherwise have been handled on paper, rather than resources empowered to support their colleagues in considering the role of digital and data in the ongoing delivery of government itself.

There is huge potential in maximising the role of the Information Officer and any associated team. Nevertheless, in order for that team to act as the champion of a data-driven culture within their organisation, they need to be supported by leadership roles at both the national and organisational level that are currently absent. In order to support efforts around both OGD and DDPS, the Government of Panama should consider it an immediate priority to develop a strategy for appointing people into those roles and co-ordinating that activity across different sectors and levels of the public sector.

Figure 3.5. Does your institution have a strategy/initiative to develop or enhance in-house data-related literacy and skills among public officials?



Note: Based on the response of 48 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 24: "Does your institution have a strategy/initiative to develop or enhance in-house data-related literacy and skills among public officials?".

As discussed in Chapter 2, skills are an important area for countries with ambitions of capturing the possibilities offered through implementing digital government strategies. There is an important need to focus on the skills and capabilities of the Panamanian public sector in general and it is critical that attention is given to the strategy for developing or enhancing in-house data related literacy and skills. As seen in Figure 3.5, 58% of the institutions that responded to the survey do not have such a plan in place. Such a strategy should pay attention to specific professional skills such as data scientists and data analysts but an arguably more important factor in this area is considering how teams across the public sector can

acquire a sufficient grounding in data literacy that allows anyone to consider the opportunities of DDPS in their particular role.

This should increasingly be a priority for all sectors of the public service as they approach the policy needs of areas such as education, business, health and welfare. In the case of education in particular, Panama has an opportunity to work with external partners to equip their schools with the necessary digital and telecom infrastructure to train students (and teachers) to take full advantage of the digital transformation. An important part of any national curriculum should be the role of data literacy in the context of digital training, which is not currently seen in Panama's masterplan for education.

Regulation

Panama has several hard regulatory instruments in place that relate to transparency of the public sector, OGD, interoperability and the protection of personal data. Amongst these, the following are particularly important for efforts to implement DDPS:

1. Law No. 6 of 22 January 2002, which handles transparency of the public sector (Panama's Freedom of Information legislation).
2. Law No. 33 of 25 April 2013, which created ANTAI and makes provision for an Information Officer and associated team to exist within each public institution with responsibility for proactive transparency, open data and information requests (Asamblea Nacional, 2013[9]).
3. Executive Decree No. 511 of 24 November 2017 (Ministerio de la Presidencia, 2017[10]), which established the government's OGD policy.
4. Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[8]), which requires all government databases to be interoperable and established the once-only principle for data collection and re-use.
5. Resolution No. 12 of November 16 2015 (Consejo Nacional para la Innovación Gubernamental, 2015[15]), which created the National Interoperability and Security Committee.
6. Resolution No. 15 of 3 May 2016 (Consejo Nacional para la Innovación Gubernamental, 2016[16]) set out the interoperability framework for Panama and the steps that were expected for how institutions would achieve its implementation.
7. Executive Decree No. 51 of 4 February 2013 (Ministerio de la Presidencia, 2013[18]) created the Panamanian Spatial Data Infrastructure.
8. Resolution No. 4 of 9 October 2014 (Consejo Nacional de Tierras/Autoridad Nacional de Administracion de Tierras, 2014[19]) approved the Operating Regulations of the Panamanian Spatial Data Infrastructure.
9. Law No. 81 of 26 March 2019 (Asamblea Nacional, 2019[20]), which regulates the protection of personal data (see Chapter 3: Data protection).

This legal framework has been effective in placing OGD on the agenda for many institutions, with 30 out of 49 agreeing that "the potential and value of open data for the achievement of policy goals is acknowledged by the leadership of my institution". However, despite the focus on interoperability, it is less clear that the legal framework has transformed the ease with which data sharing can take place. Figure 3.4 highlights the extent to which access to data and interoperability is seen as a challenge.

This gap between the intent of these legal frameworks and the practice of institutions across Panama may owe something to the limitations around skills and capability discussed in Chapter 2 and earlier in this chapter. Panama appears to lack softer instruments such as guidance on the governance and use of data, as well as support for implementing the interoperability framework, publishing government data or structuring metadata. Box 3.2 discusses how organisations in ***Denmark***, ***Mexico,*** the ***United Kingdom*** and the ***United States*** that have similar responsibilities to AIG in terms of building capability and delivering

digital transformation have produced guidance and resources to build capability but also to effectively establish standards and norms for delivery without implementing harder measures to enforce it.

Box 3.2. Guidance published and curated by central digital authorities to support teams elsewhere in government

The GOV.UK Service Manual (United Kingdom)

A resource produced through collaboration between different communities of data, digital and technology professions, this covers the delivery of digital services to reflect the country's service standard. Although it is the responsibility of the Cabinet Office's Government Digital Service, it is used by teams at every level and in every sector of government.

Source: https://www.gov.uk/service-manual

Wikiguías (Mexico)

The Wikiguías are a series of recommendations for implementing standardised digital services on Mexico's single government website gob.mx. The content consists of the framework for contributing to the single government website as well as the guidelines for implementing according to the provisions of Mexico's Digital Services Standard.

Source: https://www.gob.mx/wikiguias

18F Digital Service Delivery Guides (United States)

A set of technical guides produced by 18F that focus on disseminating best practice in the area of user-centred development.

Source: https://18f.gsa.gov/guides/

Fællesoffentlig Digital Arkitektur (Denmark)

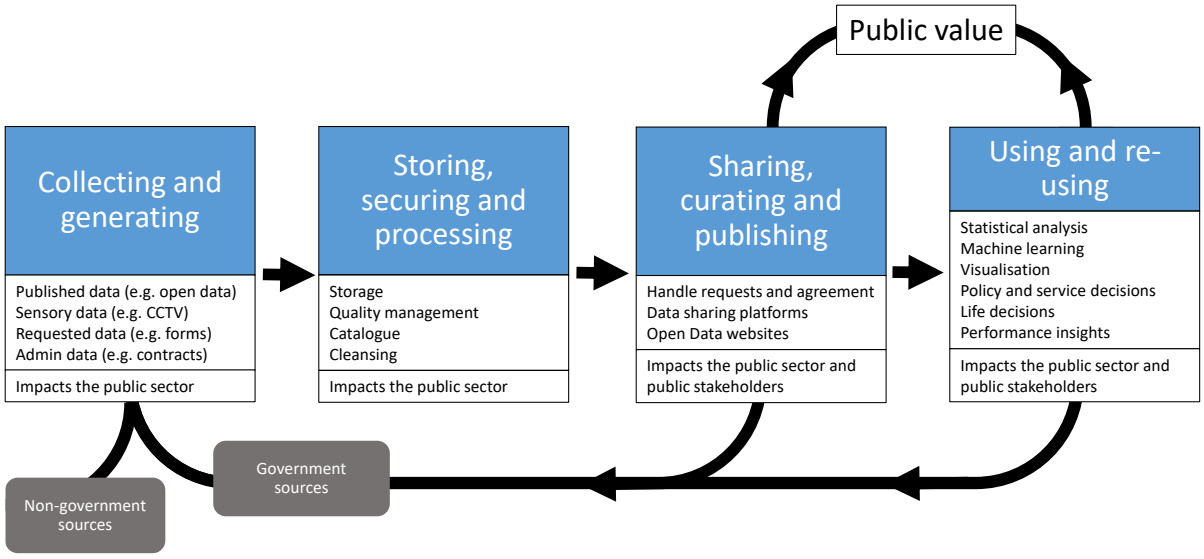
A website documenting and exhibiting architecture, architectural rules and corresponding standards and guidelines adopted and implemented in connection with the common public architecture work.

Source: https://arkitektur.digst.dk

Data value cycle

The Government Data Value Cycle (Figure 3.6) presents four phases of data in government from its initial collection and generation, through its storing, securing and processing, on to the sharing, curating and publishing of that data and then finally into its use and re-use. The first two stages of the process are entirely about how the public sector manages and looks after its responsibility to the data it collects and holds whilst the final two stages offer opportunities to add public value either through the improvement of policy and services or the opportunities generated by OGD.

Figure 3.6. Government Data Value Cycle



Source: van Ooijen, C., B. Ubaldi and B. Welby (2019[3]), "A data-driven public sector: Enabling the strategic use of data for productive, inclusive and trustworthy governance", https://doi.org/10.1787/09ab162c-en.

The process by which data (raw, isolated and unstructured datasets) is transformed into information (where relationships between data are identified) and knowledge (understanding those relationships) provides the basis for decision-making at the strategic, tactical and operational levels of government (taking action). This building of public sector intelligence and creation of public value does not happen in a linear fashion but through a cycle, which involves feedback loops throughout the process. Data can inform and affect the nature of decision-making processes which in turn can lead to the production and collection of different or more data (OECD, 2015[21]).

In Panama, certain aspects of the cycle are currently well administered with strong indications from the survey of public sector institutions that the infrastructure associated with storing and managing data is a strength (see Chapter 4: Government as a Platform capabilities). Furthermore, there is a healthy culture of organisations publishing their open data either through the national open government data website (*Datos Abiertos de Panamá*, https://www.datosabiertos.gob.pa) established by Executive Decree No. 511 of November 24 2017, with 720 datasets published from 32 institutions at the time of this report or through their own institutional website. Of the 49 organisations that responded to that question, 25 are publishing open datasets, with 8 of them doing so through the national website. There are some initial encouraging signs of an open data ecosystem beginning to emerge with initial conversations between academics, civic-minded software engineers and the government starting to take place late in 2018.

However, in general, there was limited evidence that these phases are seen as reinforcing and supporting one another in contributing to a coherent approach to making policy, delivering services or evaluating performance. In designing future data strategies, whether at a national or institutional level, it is important for Panama to keep the Government Data Value Cycle (Figure 3.6) in mind and recognise how a focus on each stage of the cycle allows data to flow more easily into the next. This results in the ability to enable a digital-by-design approach to public services that can proactively address the needs of citizens and businesses in the delivery of end-to-end services.

It could prove valuable for Panama to map the needs for data across the public sector and identify where existing data flows easily and where there are barriers to sharing and interoperability. Whilst this can help to establish the priorities for developing Application Processing Interfaces (APIs) or publishing particular

datasets, there is an adjacent need to provide support for public servants in understanding how to make data open, useable and reusable. Such efforts should consider training and guidance for the application and reuse of data in their day-to-day work as well as applications in other parts of government and externally. This activity will rely on the development of a cross-government network of practitioners with access to the necessary resources (whether human or financial) to transform Panama's approach to data.

Data architecture and infrastructure

Whilst it is vital for countries to implement strong leadership, set clear vision and create the right practical and regulatory conditions for success, it is equally important to address the architecture and infrastructure that shape the data and inform access to it in order to transform the Government Data Value Cycle (Figure 3.6). This includes how the architecture of data reflects standards, interoperability and semantics related to the generation, collection, storage and processing of data (the first half of the Government Data Value Cycle). It also requires an infrastructure to support the publication, sharing and re-use of data (the second half of the Government Data Value Cycle), including catalogues, sources of reliable data and the means by which that information can be accessed whether through APIs or the necessary data sharing arrangements. This architecture and infrastructure are critical to empowering government teams to apply the value of data in meeting the needs of citizens and designing solutions that transform policy outcomes.

For the citizen, one of the areas where approaches to data generate the most friction is when they are required to provide information, which government may already hold. The once-only principle of citizens not having to provide information which government should already be able to access is enshrined in Panamanian law through Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[8]). This law sets the expectation for the interoperability of databases and the sharing of data between different organisations whilst Resolution No. 15 of 3 May 2016 (Consejo Nacional para la Innovación Gubernamental, 2016[16]) provides a further set of principles that should be followed.

Box 3.3. Platforms in Panama that support data sharing

AIG has developed a number of platforms that underpin the collection and exchange of information within Panama. The National Health Electronic Management (*Gestión Electrónica de Salud Nacional*), GESNA) and the National Agro-commercial Integrated System (*Sistema Integrado Agrocomercial Nacional*, SIAN) are being used to source statistical data for completing census returns that help the country to plan for future needs. The data that is collected is then made available to other parts of the government.

One of the biggest opportunities for Panama is the National Intelligent System to Monitor Alerts (*Sistema Inteligente Nacional de Monitoreo de Alertas*, SINMA). A component of the Smart Nation strategy, it has been developed by AIG for use by many institutions as a cross-government platform to support the monitoring of public services and provide a route for citizens to report, or be alerted to, emergencies. The platform improves interoperability and simplifies the interaction and exchange of information between relevant actors in transit, natural disasters, social programmes and security, as well as others. Efforts so far show the potential for this approach to form the basis for a strategic approach to other aspects of transforming Panamanian public services.

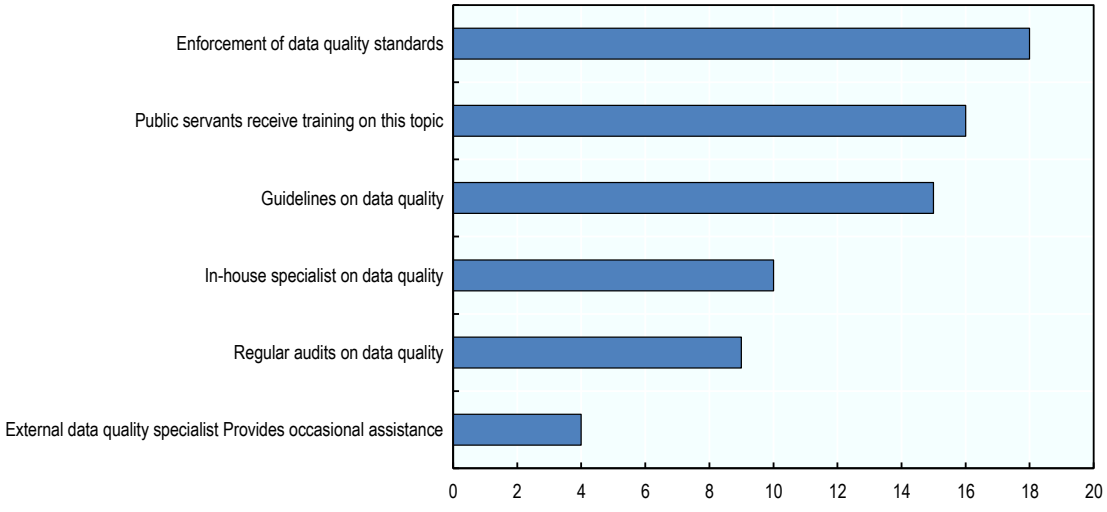
The full value of this approach has not yet been realised but there are important indications of a platform for success. The work on the National Health Electronic Management (*Gestión Electrónica de Salud Nacional*, GESNA), the National Agro-commercial Integrated System (*Sistema Integrado Agrocomercial Nacional*, SIAN) and the National Intelligent System to Monitor Alerts (*Sistema Inteligente Nacional de Monitoreo de Alertas,* SINMA) discussed in Box 3.3 show a clear commitment not only to the theory but to the practice of making interoperability possible across the Panamanian public sector. Greater support,

whether through legislation, increased mandate or political will towards the ongoing efforts of AIG needs to exist for the agenda of ensuring interoperability between platforms and government organisations and the true realisation of the once-only principle in the way in which teams across Panama are able to access and support data from elsewhere.

Data quality

An important aspect of data architecture is ensuring the quality of data during the generation and collection stage of the Data Value Cycle. Of the 51 institutions surveyed for this review, 12 had no steps in place to ensure the quality of their data, 22 had a single measure in place, 6 had two and 8 had three measures. Figure 3.7 shows the relative popularity of the six different measures that were identified. The most popular approaches of enforcing data quality standards, providing public servants with training and producing guidelines are all positive ways of building a culture of data awareness rather than focusing efforts on external resources, auditing of data or concentrating the knowledge of data within a particular set of in-house specialists.

Figure 3.7. Measures for ensuring the quality of data

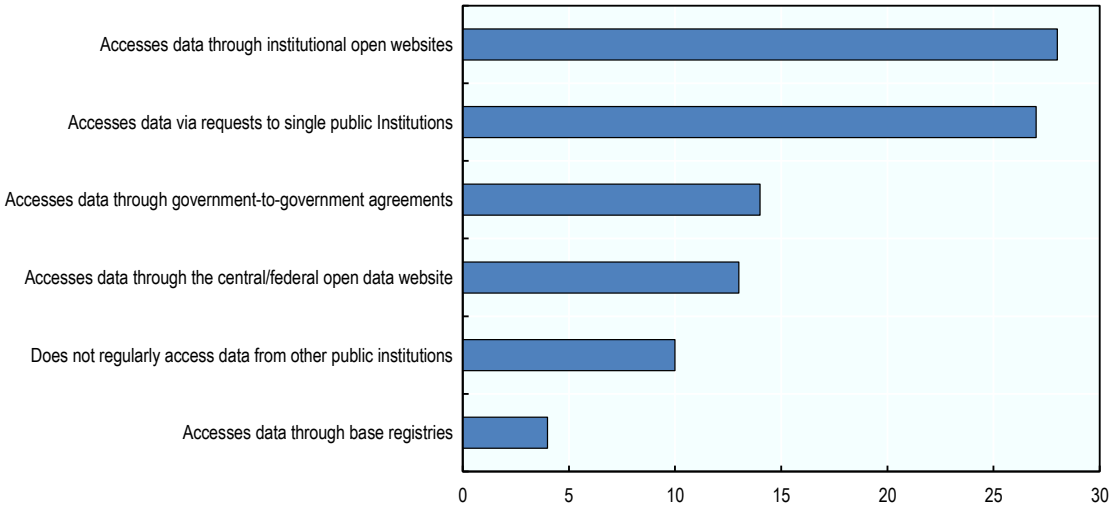


Note: Based on the response of 51 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 64: "How do you ensure the quality of your institutional data?"

Data access and sharing

Several of the most frequently identified issues with regard to the use of data in Figure 3.4 relate to data infrastructure. In particular, the 31 organisations were clear that there was a lack of information about what data was available and there was a consistent message about the need to address the practical challenges to streamline and support the sharing and interoperability of data. Figure 3.8 shows that the most frequently used route for accessing government data is via institutional open data websites (not via *Datos Abiertos de Panamá*, www.datosabiertos.gob.pa). Whilst this is an endorsement of Panama's OGD focused approach at an institutional level, it highlights an inevitable barrier to the application and re-use of personal data within the government as well as the ongoing fragmentation caused by multiple open data websites. The reasons which some of those organisations gave were instructive with several organisations citing long processes in requests for information and being given permission as well as challenges with the data architecture as reasons why they did not access data from other organisations more frequently.

Figure 3.8. How data is accessed from other public institutions



Note: Based on the response of 49 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 67: "Please indicate through which method(s) your institution regularly accesses data from other public institutions".

Box 3.4. Basic Data in Denmark

The 2010 OECD e-government study of Denmark highlighted the importance of providing high-quality basic data registries to support the activity of government teams but also to stimulate the effectiveness of OGD efforts. Although the country had some existing registries, coupled with the necessary legal frameworks, their adoption was limited as they did not reflect the needs of their users.

To move away from pure adherence to the law and towards the provision of an enabler that responds to needs, the government undertook a three-year programme for implementing basic data registries in Denmark. This effort revisited the whole approach to data governance within the public sector, including changing the legal framework as well as building partnerships outside of government to capture views and identify valuable sources of data.

As a result, public authorities in Denmark now register various core information about individuals, businesses, real properties, buildings, addresses and more. This information, called basic data, is re-used throughout the public sector and is an important basis for public authorities to perform their tasks properly and efficiently, not least because an ever-greater number of tasks have to be performed digitally and across units, administrations and sectors.

However, basic data also has great value for the private sector, partly because businesses use this data in their internal processes and, partly, because the information contained in public sector data can be exploited for entirely new products and solutions, in particular digital ones. In short, good basic data, which is freely available to the private sector, is a potential driver for innovation, growth and job creation.

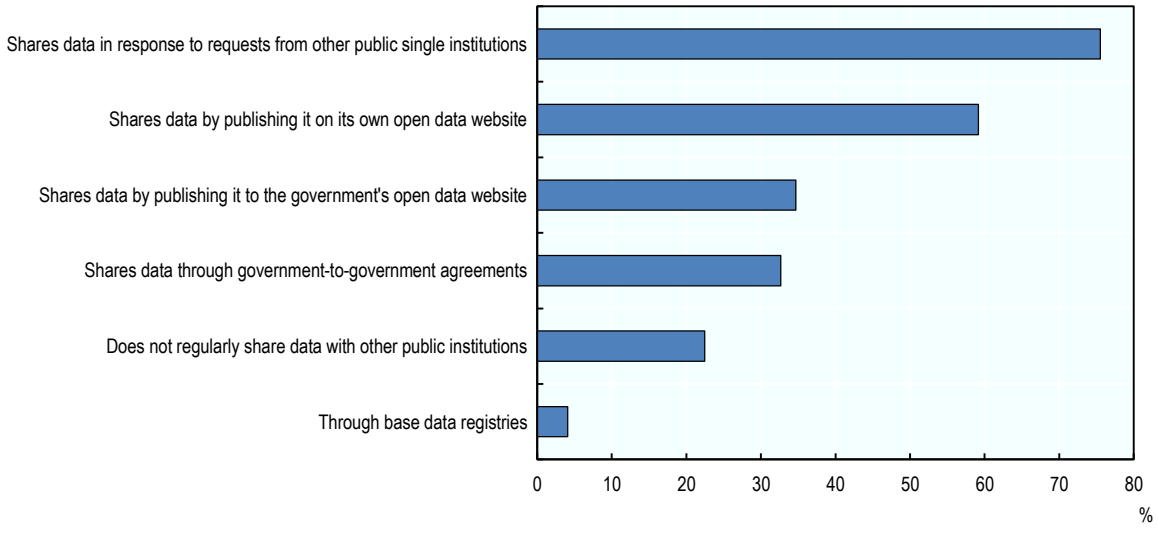
Source: Good Basic Data for everyone – a driver for growth and efficiency (The Danish Government and Local Government Denmark, 2012[22])

These concerns also highlight a lack of access to base registries or a comprehensive solution for data sharing within and between institutions. In Panama, significant progress has been made in creating the regulatory and oversight mechanisms for interoperability at a theoretical level but progress in this area is less clear at the institutional level where the majority of surveyed institutions highlighted challenges with access to that data. There is a clear demand for data within Panama, with Figure 3.9 showing 78% of organisations actively sharing data with other organisations. Currently, this is happening in a variety of ways – through the government's open data website, their own open data website, government-to-government agreements and in response to ad hoc requests. There is only minimal sharing taking place through an approach of base registries. The most widely consulted data is that held by the Electoral Tribunal about citizens and for which interoperable data sharing arrangements can be made within the public sector, and with the private sector (for a fee).

One of the identified enablers for digital government is the presence of base registries providing canonical sources of information relating to populations, addresses, qualifications and others (an example of this is discussed in Box 3.4). The audit and maintenance of these sources by an identified and responsible party can provide a valuable reference for other services and reduce the potential for duplicated data to be collected elsewhere. In Panama, Executive Decree No. 719 of 15 November 2013 (Ministerio de la Presidencia, 2013[23]) established the means by which such important data sets and web services would be made available for use by government teams through their publication in a catalogue and availability within the interoperability platform (see Chapter 4: Data and interoperability). However, if such registries exist in Panama then, as shown in Figure 3.9, there is little to no awareness of them. Moreover, in those cases where sources of canonical data were identified, the provided information did not reflect the sort of canonical record of data expected to be found in a base register.

Nevertheless, whilst these registers are not yet in place, or mature in their adoption, the presence of enabling legislation provides an important foundation on which Panama might build. The examples of interoperable platforms discussed in Box 3.3 show that this agenda is building momentum but that this would benefit from the strategic approach to data flows across the Panamanian public sector discussed throughout this chapter.

Figure 3.9. How data is shared with other public institutions



Note: Based on the response of 49 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 65: "Please indicate through which method(s) your institution regularly shares data with other public institutions".

Data catalogues

One way for countries to communicate the availability of data is through a "data catalogue". The ambition for such a catalogue should not be to index every piece of data published by a government but to prioritise that data which is identified in the mapping of data flows across the public sector as contributing to the delivery of other services or which would obviate the need to collect duplicated data. In Panama, Resolution No. 15 of 3 May 2016 (Consejo Nacional para la Innovación Gubernamental, 2016[16]) refers to making web services available free of charge through a catalogue of services.

However, this was not referenced by any of the surveyed institutions and only 4 of the 51 surveyed institutions (Judicial Branch [*Órgano Judicial*], Mass Transportation of Panama [*Transporte Masivo de Panamá*], Superintendency of Insurance and Reinsurance of Panama [*Superintendencia de Seguros y Reaseguros de Panamá*] and the Attorney General of Accounts [*Fiscalía General de Cuentas*]) identified as having a single exhaustive inventory of data within their institutions with a further 19 having a non-exhaustive institutional data inventory. These represent important resources within their organisations but these initiatives will be limited in their impact if they are not designed or co-ordinated in order to facilitate access from outside the organisation and simplicity of re-use between them. Failure to do this will leave public servants needing to look in several places and unable to rely on the available data to be timely or licensed in a way that will allow for simple re-use.

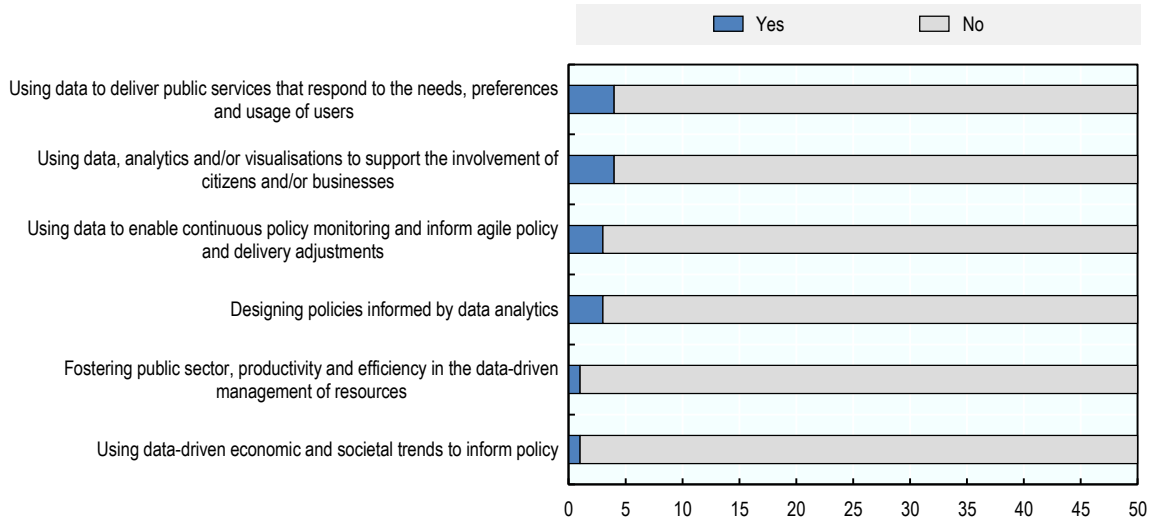
Nevertheless, it is insufficient to create a website for indexing datasets if the level of engagement from government does not stimulate interest in the datasets it contains, promote an understanding of its benefits or encourage external parties to apply the data. In order to establish a culture that naturally considers how data could be applied, the Panamanian government needs to think about how it brings civil society actors and private sector entrepreneurs together with public servants to explore how Panamanian government data can improve lives, whether through government policy, voluntary activities or commercial solutions to everyday problems. The experience of ***Spain*** underlines the value of such an approach. The infomediary sector, those companies which analyse and treat public and/or private sector information to create value-added products to support efficient decision-making, created 5 000 jobs and enjoyed turnover of between EUR 1 500 million and EUR 1 800 million in 2015 (ONTSI, 2016[24]).

Applying data to unlock public value

The data governance approach is fundamental to the success of a country wishing to adopt a DDPS approach. Ensuring that there is leadership, capacity to deliver and the necessary legal frameworks as well as an approach that enhances the Data Value Cycle should be the priority for Panama. Getting this right will allow the country to explore ways in which the opportunities for a DDPS can be exploited. Nevertheless, there are important insights from the survey conducted with the institutions about how Panama may wish to enhance the implementation of a data-driven approach to policymaking, service design and delivery, and the monitoring and evaluation of activity.

Data relating to the performance of the economy, tourism and construction are critical to how Panama plans its policy agenda. Furthermore, Panama is a committed observer of international indicators and uses these benchmarks to set government priorities. This has resulted in a focus on the competitiveness of Panama and the need to simplify bureaucracy, particularly for businesses. However, as shown by Figure 3.10, only a very limited number of Panama's public sector institutions have considered the role data could play in the policy and delivery lifecycle as objectives. This suggests that these opportunities are not high on the list of organisational priorities and may be one of the factors in the ongoing challenges for sharing between organisations and cross-sectoral thinking around the standardisation of systems or schemas.

Figure 3.10. Objectives contained within institutional data strategies



Note: Based on the response of 50 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 56: "Does your institution have a dedicated formal strategy or policy for the internal governance and use of data (i.e. providing directions to leverage data for improved policymaking, service design and delivery and/or organisational management, performance and productivity)? Part d) If yes, which of the following strategic objectives are specified in the policy?"

Data-driven anticipatory governance

A data-driven approach can strengthen the effort of countries in exploring anticipatory governance approaches. Anticipatory governance refers to systematic efforts by governments to consider the future in order to inform policy decisions today. It allows governments to respond proactively rather than reactively, based on knowledge and evidence rather than experience and protocol. Using data can enable more proactive decision-making and policy planning, better detection of societal needs as they emerge and facilitate better predictions for future needs. Data-enabled prediction and modelling techniques support governments in anticipating societal, economic or natural developments that are likely to occur in the future. They may also capture early warnings and better assess the need to intervene, design the appropriate policy measures and anticipate their expected impacts more precisely (van Ooijen, Ubaldi and Welby, 2019[3]).

Only the Ministry of Social Development (*Ministerio de Desarrollo Social*, MIDES), one of the minority of organisations with a dedicated statistical unit, has recognised the possibilities for a data-driven approach to economic and societal trends in shaping policy as an objective of the data strategy. Three organisations, the Social Security System (*Caja del Seguro Social*, CSS), ANTAI and MIDES, have a stated objective in their strategies for an anticipatory approach to evidence-informed policy design.

However, despite this lack of strategic direction, the survey identified several experiences of data influencing the anticipatory governance of Panama, suggesting that there is an active data-driven policy community for AIG to work with, and champion, in establishing a DDPS culture:

1. The Ministry of Economy and Finance (*Ministerio de Economía y Finanzas*, MEF) compile monthly reports tracking social indicators to inform the policy agenda.
2. The Institute for the Development and Use of Human Resources (*Instituto para la Formación y Aprovechamiento de Recursos Humanos*, IFARHU) has been analysing the experience of 600 000 students eligible for Universal Scholarship to understand their experience in relation to other data and social indicators.

3. The National Energy Secretariat (*Secretaría Nacional de Energía*) is forecasting behaviours around fuel and electricity consumption to understand how climate affects demand.
4. The National Institute of Women (*Instituto Nacional de La Mujer*, INAMU) has developed a system of indicators that are regularly collected in order to provide an analytical basis for the creation of public policy.
5. The Ministry of Health (*Ministerio de Salud*) and CSS are using the GESNA platform for planning the provision of health care and associated services for 255 356 registered patients (over 40 years old) and 340 719 medical interventions (a single patient can have more than one medical intervention)
6. The Ministry of Agriculture (*Ministerio de Agricultura*, MIDA) and the Institute of Agricultural Marketing (*Instituto de Mercadeo Agropecuario*, IMA) collect detailed data on 14 752 farmers and 7 409 producers in the SIAN platform, assisting them to work with other sectoral agencies and programmes in planning and offering targeted assistance.

Box 3.5. How analysis of data and having an interoperability platform helped a Portuguese service reach an extra 600 000 people

In Portugal, the insights from data have transformed the way they provide support to some of the most vulnerable households in the country. The government created a Social Energy Tariff (SET) to subsidise energy costs. The service required eligible users to sign up and register but the initial data showed that those who should have benefitted from the tariff were not registering for it.

When research was carried out to understand why that was the case, they learnt that it was because citizens did not know that they had to ask for the special tariff. As a result, the decision was made to automate the process. However, in order to do this, data needed to be shared between the *Direção Geral de Energia e Geologia*, energy companies, the tax system and the social security system.

This required them to use Portugal's Interoperability Platform for the Public Administration (iAP). The Interoperability platform provides access to a diverse set of services to meet needs both within and outside government. It works alongside identity, payment and notification platforms to provide a set of capabilities for government teams to deploy. The iAP is managed by a dedicated technical team.

As a direct result of being able to use the iAP for simply automating the SET, the number of households receiving the tariff increased from 154 648 to 726 795, providing financial support to 7% of the Portuguese population with the cost of their energy without requiring them to validate their eligibility.

Source: Information provided by Portugal to the OECD.

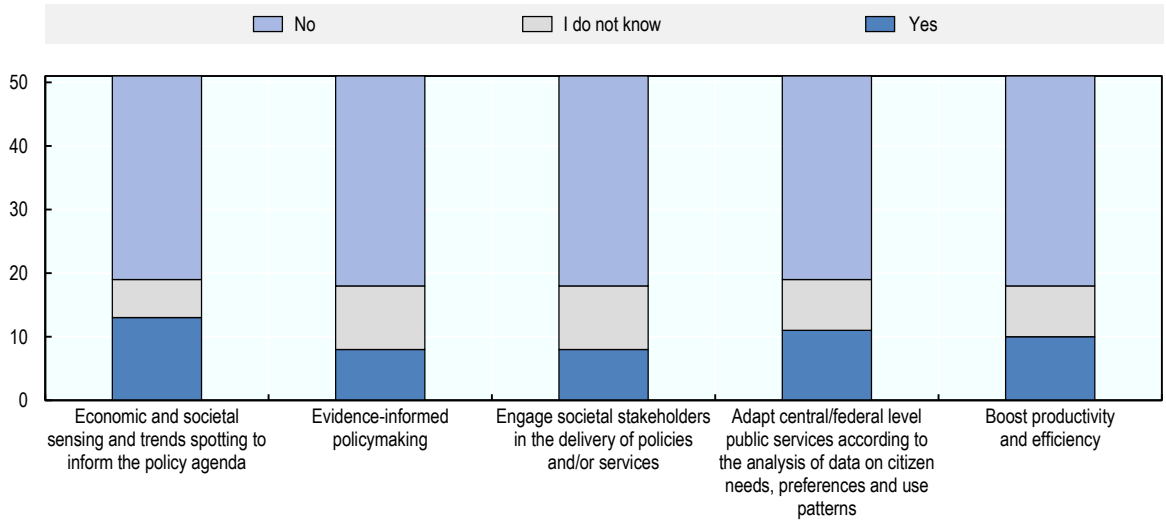
Data-driven design and delivery of policy and services

One of the most compelling opportunities for the DDPS is the way in which the application of data can reshape the opportunities for design and delivery in terms of better predicting policy solutions, engaging with citizens as co-value creators and better responding to the needs of citizens.

Four organisations have identified the opportunities for using data to engage citizens and other stakeholders with policy, the Authority of Micro-, Small- and Medium-sized Enterprises (*Autoridad de la Micro, Pequeña y Mediana Empresa*, AMPYME), ANTAI, IFARHU and CSS. Figure 3.11 shows that eight organisations are actively exploring initiatives that can do this, including the Electoral Court (*Tribunal Electoral de Panamá*), particularly active during elections to offer special visualisation tools that help the

public to comment and participate in the process, and MIDES and MEF in their presentation of the annual Multidimensional Poverty Index.

Figure 3.11. Has your institution implemented policy initiatives to analyse data in these ways?



Note: Based on the response of 51 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 72: "Has your institution implemented policy initiatives to analyse data for evidence-informed policymaking?"; Question 73: "Has your institution implemented policy initiatives to analyse data for evidence-informed policymaking?"; Question 74: "Has your institution implemented policy initiatives to use data to engage societal stakeholders in the delivery of policies and/or services?"; Question 75: "Has your institution implemented policy initiatives to adapt central/federal level public services according to the analysis data on citizen needs, preferences and use patterns?"; and Question 76: "Has your institution implemented policy initiatives to share and analyse data to boost public sector productivity and efficiency?".

AIG's SmartNation initiative shows excellent promise in terms of establishing data sharing within the Panamanian public sector with interoperability achieved between 72 institutions and some of the associated datasets being released to the population as OGD. However, with very few institutions providing examples of how data is being used to deliver cross-government services or improve existing services, there remain underdeveloped opportunities for adopting a DDPS culture to transform the citizen and business experience of government in the way modelled by OECD countries such as Portugal in Box 3.5.

This opportunity extends to the application of OGD for service delivery both within and outside of the public sector. Panama is an active participant with the Open Government Partnership and since 2012 has implemented several activities to support the Open Government agenda. One of the areas in which this has been successful is the creation of ANTAI in 2013 and the subsequent development of the national open government data website (*Datos Abiertos de Panamá*, www.datosabiertos.gob.pa). However, with the majority of datasets detailing budgeting, national statistics, legislation and procurement, this activity has centred on questions of transparency and accountability rather than the opportunities for broader social and economic value creation.

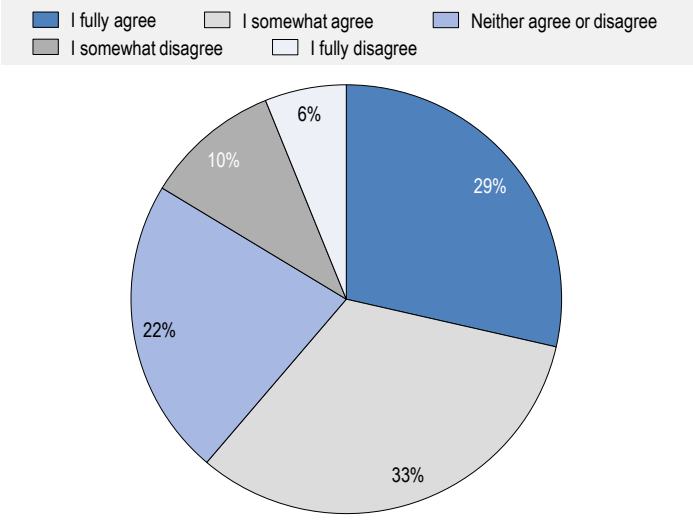
Weather forecasting data has been opened up and although universities have done studies with the data and it has been integrated into the SIAN platform by AIG to support the farming sector, it has not stimulated much interest from app developers. Those responsible for public transport and transport infrastructure in Panama City are sharing data with global service providers like Google and Waze as well as with citizens and government institutions helping to deliver better policies for developing these services. However, this has not yet translated into the emergence of localised innovative businesses supporting public policy or

service delivery. Panama's government should consider investing more in the opportunities for OGD by partnering with external collaborators for service delivery. As an example, the Ministry of Labour and Labour Development (*Ministerio de Trabajo y Desarrollo Laboral*, MITRADEL) has developed a platform to which over 500 companies post their employment needs and which then sources employees for them. The data that is associated with the roles employers are recruiting, the locations where they are looking and the skills which employers are looking for are an interesting source of data that could stimulate training courses, the location of a new business and even competitors in the jobs market.

Happily, the survey indicated an appetite for pursuing this agenda with Figure 3.12 showing that 62% of institutions agree that *"the potential and value of open data for the achievement of policy goals is acknowledged by the leadership of my institution"*. Such a cultural receptiveness to the role of OGD can help to stimulate new services as well as the economy and provide support to the emerging OGD ecosystem by strengthening the relationship between academics, civic-minded software engineers and government's own data practitioners.

Figure 3.12. How far institutional leadership acknowledges the potential and value of open data

Respond to the following statement: The potential and value of open data for the achievement of policy goals is acknowledged by the leadership of my institution



Note: Based on the response of 49 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 91: "Respond to the following statement: The potential and value of open data for the achievement of policy goals is acknowledged by the leadership of my institution".

Data-driven performance monitoring and evaluation

The third pillar of opportunities in a DDPS is the role of data in monitoring and evaluating the performance of government policies and services. In accessing real-time information about the way in which a service is being used, governments are able to respond to the demands of the public in a more timely fashion. Equally, when designing policy interventions, the importance of thinking about how to baseline, and then measure, the return on investment and impact of a given set of activities is important for understanding the value of an investment and consequently building trust and demonstrating accountability to the public.

Only AMPYME has identified the potential benefits to public sector productivity and efficiency in the use of data in their data strategy. MIDES, ANTAI and CSS were the only organisations with strategic objectives

to consider how data might allow for continuous policy monitoring. Moreover, the peer review team encountered limited evidence of a strategic overview from the government as a whole in terms of data being used to understand and reflect on the continuous improvement of either policy or service delivery.

Box 3.6. Measuring the performance of digital government services in the United Kingdom

Transactions explorer

One of the early activities undertaken by the Government Digital Service after its founding in 2011 was to create an index of all government transactions. The *Transactions Explorer* was publicly available and listed transaction volumes against each responsible government organisation: the first version contained 671 services reporting 1.5 billion transactions a year.

The Government's Digital Strategy

The UK published its Digital Strategy (United Kingdom Cabinet Office, 2013[25]) after this data had been collected and published. It was informed by what had been found and included three specific commitments for measuring the performance of government services:

1. All services with more than 100 000 annual transactions would be redesigned.
2. Creating a Service Standard against which all new or redesigned services would be measured.
3. Consistent management information about service performance.

Key Performance Indicators

To create consistent management information four Key Performance Indicators were developed:

- Cost per transaction – to establish whether the end-to-end service was cost-effective.
- User satisfaction – to identify the outliers where improvement should be focused.
- Completion rates – see where there might be process flaws or ambiguities in the service.
- Take-up levels – how is a digital channel performing relative to telephone or face-to-face options.

As this data was added to the list of services and transaction totals, it allowed a deeper understanding of the demand for government services and the identification of services where contracts, processes, or overheads raise further questions for research and discovery.

The Service Standard

Launched in 2014, the UK's Service Standard guides services in their efforts to transform government services. Originally consisting of 26 points with 3 focused on reporting performance, it today is only 15 points with a single, comprehensive measure focused on collecting, measuring and publishing performance across the whole of a service and the end-to-end experience of users.

Towards a future of continuous improvement for the end-to-end experience of a service

Eight years on from the *Transactions Explorer*, the landscape of performance measurement is very different in the UK. The focus has shifted away from attempting to use four standardised metrics to capture performance and towards understanding end-to-end user journeys, including the interactions between digital and offline parts. The priority is measuring and improving whole services regardless of the channel being used, not individual online transactions.

Panama's 311 Citizen Contact Centre (*Centro de Atención Ciudadana*) offers a valuable model for other parts of Panama to aspire to. It collects satisfaction feedback on every interaction with citizens and publishes a monthly, per-agency report on the volume of reports and performance in terms of case closures. Other than monthly institutional performance open datasets, this information is not made publicly available and so the Panamanian government should consider exploring how to increase its visibility with the public. Such transparency should not be understood as a way to highlight poor performance that could generate broader civic criticism but as an aid to ensure that empowered teams can apply the insights in support of evolving an improved service.

One of the most encouraging areas of data being applied to transform the government was the creation of an e-Government performance framework. The e-Government Indicators (*Indicadores de Gobierno Digital*) consist of 24 different digital government metrics (procedures, citizen attention, access to information, governance) embedded in current laws and aligned to well-known international indices, and 10 dimensions for central and local government digital transformation. These provide a means for Panama to look less at compliance with external indices and develop an internal framework for understanding performance and helping to prioritise the focus for transformation. The e-Government Indicators allow AIG to baseline its impact and look ahead to the next phase of Panama's digital evolution. Data is collected relating to the satisfaction and performance of services and AIG publishes comma-separated values (CSV) files detailing the results of comparisons between institutions. Whilst near real-time dashboards are providing institutions and their ministers with insights into what is happening, its application for improving the delivery of services is not universal and depends on the commitment of a given institution to consider data in its approach to delivery.

It should not be considered sufficient just to measure on a periodic basis and publish this data; any of those measurements should be considered in light of how the insight can be applied to improve services or government. Therefore, the measurement approach should develop from the pure collection of statistics and become something that can hold people to account. Consequently, the performance framework should not only consider the user's experience but the efficiency, impact and return on investment as well.

Data for trust

The way in which countries approach the digital government agenda influences the well-being of citizens in terms of being responsive to their needs, protective of their welfare and trusted to act with respect and competence (Welby, 2019[26]). Increasingly citizens are aware of the realities of how their data can be exploited and misused and have high expectations of government in its handling of their personal information. As a result, there is an imperative for governments to consider a range of issues including transparency, data protection, consent models and ethical approaches to the use of data in order to ensure that these approaches to data build trust rather than diminish it.

Transparency

The Panamanian Government has made commitments to the open government agenda through greater citizen participation, government accountability and increased transparency (Gobierno de Panama, 2014[7]). ANTAI has taken the lead, with AIG's support, on efforts to increase the transparency of Panama's public sector with several notable efforts:

1. Infrastructure Transparency Initiative – public infrastructure projects are disclosed into the public domain through a collaboration between government, industry and civil society. These reports are subject to periodic checks to assess the accuracy of what has been published, compliance with transparency expectations and the progress of a given project.

2. Reforms to public procurement law and standardisation of documents – Law No. 22 of 27 June 2006 (Asamblea Nacional, 2006[27]) establishes important principles in terms of streamlining and improving levels of transparency within the procurement system whilst legal documents for public procurement have been made more consistent.
3. OGD – as already discussed, Panama has implemented various efforts to support its publication.
4. *PanamaCompra* – the online procurement platform has gone through several iterations to support its users and make procurement more transparent.
5. *PanamaTramita* and the 311 Citizen Contact Centre (see Chapter 4: Channels for accessing services) – the creation of a single point of access and contact limits the ability for fraudulent or corrupt processes to be introduced into the experience of government.

The presence of extensive accountability data within the national open government data website (*Datos Abiertos de Panamá*, www.datosabiertos.gob.pa) indicates that Panama is making progress on the way in which the Government contributes to enhancing transparency in society through the data it publishes. Yet, the fact that the majority of those datasets detail budgeting, national statistics, legislation and procurement seem to reflect the fact that a greater focus has been given to questions of transparency and accountability rather than the opportunities to foster OGD availability, accessibility and reuse for broader social and economic value creation.

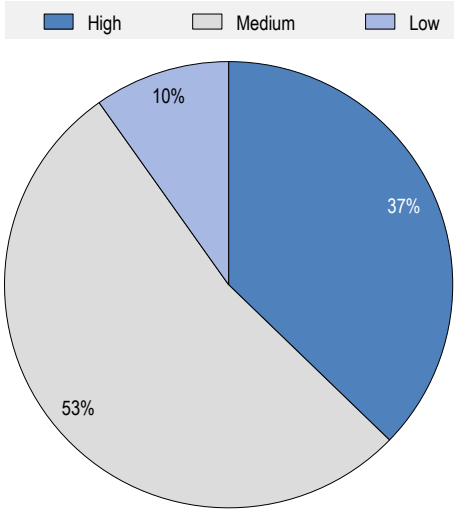
Data protection

An important development in Panama is Law No. 81 of 26 March 2019 (Asamblea Nacional, 2019[20]) which regulates the protection of personal data. Following Panama's adherence to the Budapest Convention on Cybercrime (Council of Europe, 2001[28]) in 2013, this is an important step in considering how to defend the rights of citizens and businesses in the safe and effective use of their data.

According to Figure 3.13, this legislation has had an impact on the priority of data protection and privacy in Panama. However, a number of institutions did not know about the forthcoming law and others expressed concern that the legislation may lack meaningful enforcement measures. This emphasises the importance of implementing an independent Information Commission to regulate the way in which the public sector, or businesses, handle data and to whom the public can appeal in the event of any concerns about the use of that data. Nevertheless, this important building block allows Panama to work with a consenting public to make full use of data in ways that encourage trust.

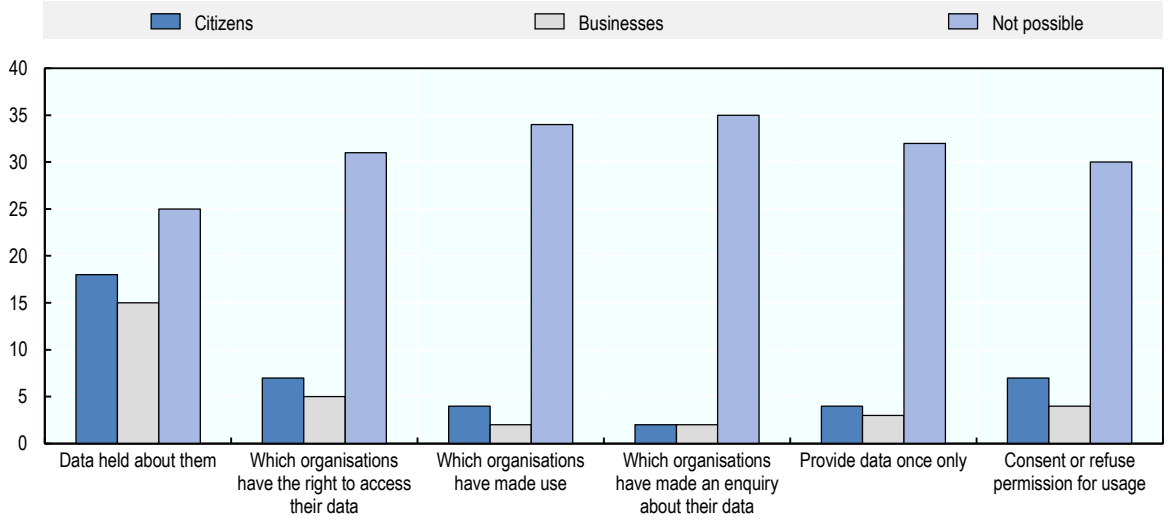
Furthermore, the creation of this framework reflects the global attention being surfaced through the creation of transnational data protection frameworks including the *European Union General Data Protection Regulation* (GDPR) (European Union, 2016[29]). As Panama contributes to the regional digital government conversations of the e-Government Network of Latin America and Caribbean (*Red de Gobierno Electrónico de América Latina y el Caribe*, Red GEALC), there are opportunities to build on the *OECD Recommendation of the Council concerning Guidelines on the Protection of Privacy and Transborder Flows of Personal Data* (OECD, 2013[30]) and explore how to achieve a similar, regional, approach to cross-border data sharing (see Chapter 4: Cross-border services).

Figure 3.13. Priority of data protection and privacy in Panama's digital government agenda



Note: Based on the response of 51 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 81: "How would you describe the level of priority given to privacy and personal data protection in your country's digital government agenda?".

Figure 3.14. Extent to which citizens or businesses are able to view how their data is used



Note: Based on the response of 45 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 84: "Please check the boxes in the table below to indicate whether citizens and businesses can do the following in practice (e.g. through a website or a mobile application)".

Seeking consent from citizens and managing government's access to their data

A further way in which the role of data can influence the trust of citizens is the mechanisms by which governments allow citizens to provide consent for their data to be reused by other parts of government and to manage that access on an ongoing basis.

As Figure 3.14 shows, there is currently only limited provision for either citizens or businesses in having practical means for managing access to their data. Twenty-five of the 45 institutions that answered this particular question offer no way to identify data held about the requesting citizen or business. Even amongst those that responded positively, it was clear that there was no simple route to obtaining this information for a citizen or business. The Judicial Branch (*Órgano Judicial*) highlighted that everyone in Panama has the right to request information from public institutions or private companies that provide a public service. This is coupled to a right for requesting the State to correct or eliminate information that is incorrect, irrelevant, incomplete or outdated. Should such a request not be actioned in 30 days then it is possible to escalate the issue and make a request for *Habeas Data* to the Judicial Branch (*Órgano Judicial*). It is similarly difficult for citizens or businesses to discover which organisations have the right to access their data or have used or enquired about it. Although a handful of organisations suggested that it was possible for citizens or businesses to provide data only once or consent and refuse permission for usage, there was no evidence provided to support this.

Box 3.7. *Carpeta Ciudadana*

In Spain, *Carpeta Ciudadana* enables a citizen to know and control access to their data by public organisations. It provides a summary of the citizen's information grouped by subject and displays the number of files currently open, or in the pipeline, at the time of their query, grouped by ministry or agency. It then links the user to further details about the files.

Carpeta Ciudadana shows information about the exchange of information between public organisations and the condition of consent placed upon it. The list of data that has been requested and shared with administrative bodies to complete a formality or query also displays whether the citizen has given explicit or tacit consent for its re-use.

Carpeta Ciudadana is not just focused on the digital experience of the citizen, additionally presenting logs of any face-to-face interactions between the citizen and public administration.

Source: Information provided by Spain to the OECD.

Following the implementation of GDPR, European Union member states are now obliged to consider the needs of citizens in communicating how their data is being used. For some countries, such as Spain (Box 3.7), this extends mechanisms that were already in place, whilst for others it necessitates a new approach to this interaction. Although Panama is not covered by GDPR, the lessons that are available for considering how citizens might grant consent and manage access are important, particularly in the context of Panama's ambitions for expanding and enhancing digital identity (see Chapter 4: Government as a Platform capabilities).

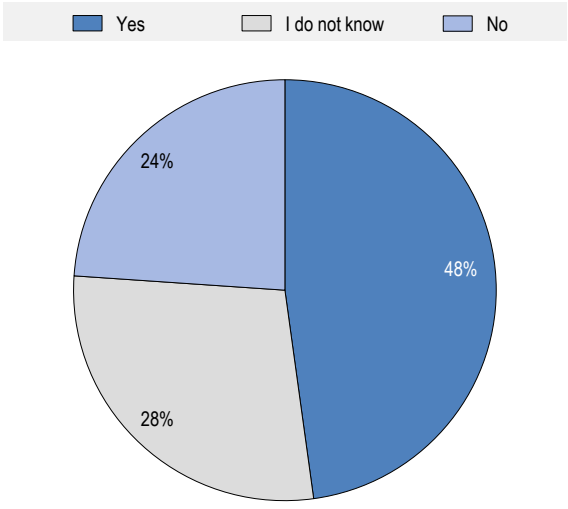
Ethics

As governments explore the opportunities to disrupt the existing way in which services are delivered through the application of technology, data becomes an important raw material. The exchange of data from one organisation to another may add value but it also means data being used in ways that may not have been clearly stated when it was first collected. Moreover, as governments put data to work in anticipating the future demands of a country, it is important that any personal data is anonymised and that, as far as possible, bias is identified and understood. This is especially true when it comes to the role of machine learning and the data being used to train neural networks. Whilst algorithms can provide powerful ways for delivering services more quickly and distilling more information than humans could, it is not without its risks (van Ooijen, Ubaldi and Welby, 2019[3]; O'Neil, 2016[31]).

Around the world, different countries and organisations are exploring how they might define and enshrine an ethical approach to the role of data in designing policy, delivering services and evaluating performance with traditional methods, or via the transformation offered by disruptive technology. Several countries and organisations have given a focus to the ethical use of data in the specific context of artificial intelligence (AI). The Working Party of Senior Digital Government Officials (E-Leaders) Thematic Group on the DDPS is collecting the experience of its participant members with the aim of developing a distilled framework for ethics more generally within the DDPS.

In Panama, a Basic Course in Ethics for Public Servants has been devised as part of the Open Government agenda. It seems to introduce, improve and consolidate knowledge for public servants on ethics and anti-corruption that promote standards of conduct and provide the necessary skills to prevent, detect and denounce it. However, this does not broaden out its scope to consider the treatment of data in designing and delivering policy and services.

Figure 3.15. Institutional appetite for support with data ethics



Note: Based on the response of 46 institutions.
Source: Based on information provided in response to OECD (2019[12]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 80 e): "Would you benefit from central/federal government support on data ethics?"

Nevertheless, one in three of the institutions surveyed for this review understood that there was an expectation on them and requirement to ensure data is managed and used in an ethical way. Central support is available to these organisations but only 5 of the 51 organisations had made use of it, this was despite 22 organisations expressing an appetite for support in this area (Figure 3.15). In terms of those needs the following areas were highlighted:

- support with collecting and disclosing data, especially regarding confidentiality and data protection
- policies about how data should be governed within institutions
- additional budgetary support to implement data related policies and establish the necessary technical infrastructures.

These responses highlight the importance of Panama extending the resources available for building capability and efforts to raise awareness about the support and services AIG can offer.

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4 Service design and delivery

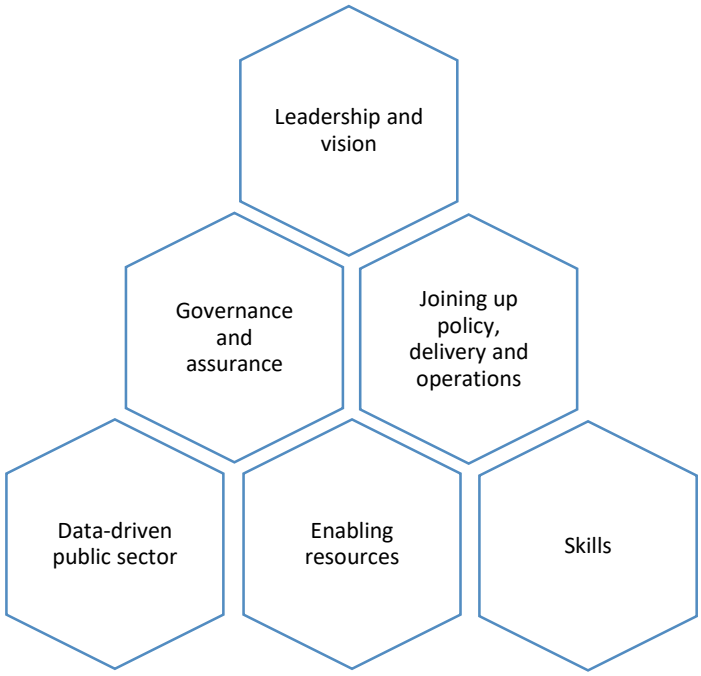
This chapter analyses the service design and delivery landscape in the Panamanian public sector. It discusses the existing culture for service design and delivery, and details the resources and enablers that support delivery and adoption. The chapter highlights the challenges of digital inclusion including the country's connectivity infrastructure, digital literacy and accessibility. It then considers Government as a Platform capabilities including the channels for accessing services, standards and guidance and digital identity (DI). Finally, the chapter looks at the issues of data and interoperability, emerging and disruptive technologies, and the potential for cross-border services in the Latin America and Caribbean region.

Introduction

Service delivery is the central point of contact between a state and its citizens, residents, businesses and visitors. It has a major impact on the efficiency achieved by public agencies, the satisfaction of citizens with their government and the success of a policy in meeting its objectives. Alongside confidence in the integrity of government, the reliability and quality of government services is an important contributor to trust in government. The quality of these interactions between citizen and state shape not only their experience of government, but influence the opportunities they access and the lives they build.

In this context, users are unforgiving of services that compare poorly with experiences of high-quality delivery, whether from the private sector or elsewhere in government. To meet rising quality expectations, particularly in the digital age, governments need to focus on understanding the entirety of a user's journey across multiple channels, as well as the associated internal processes, to transform the end-to-end experience. Doing this may require adjusting and re-designing processes, defining common standards and building shared infrastructure to create the necessary foundations for transformation as well as ensuring the interoperability of public agencies to facilitate the data flows that will make integrated, multi-channel services possible.

Figure 4.1. Foundations for transformed service design and delivery



Establishing a vision for the transformation of service design and creating the necessary conditions for successful delivery require several important foundations to be in place (Figure 4.1):

1. **Leadership and vision:** politicians recognise the application of digital, data and technology at the heart of the country's future, establishing an agenda that is shared by all ministers and the leadership of the public service to understand the needs of citizens and include them in designing their resolution.
2. **Governance and assurance:** there is a clear definition of "good" in respect of services and a credible approach to quality assurance. Multiple delivery partners can work towards a shared ambition, governed by controls on spending and criteria detailed in "'Service Standards", informing how teams approach the problems of their users.

3. **Joining up policy, delivery and operations:** rather than policy being designed by one team, a service being commissioned from a supplier and, on launch, being handed over to a third team; transformed services are built by multi-disciplinary teams that bring together different perspectives. Uniting what might otherwise be siloed individuals as a team, focused on solving a particular problem together.
4. **Data-driven public sector:** transformed services are hard to achieve without a strategic approach to the role of data where it can be readily shared within government and its quality assured to support innovation. As a result, services are developed that do not just replace existing processes but redesign them bringing value, both to providers (i.e. public sector organisations) and users (see Chapter 3).
5. **Enabling resources:** technology should be seen as a way of helping to support teams meet the needs of citizens rather than an end in itself. The central provision of enabling technology and other resources can meet common needs, such as those around identity or hosting, or provide guidance on best practice approaches.
6. **Skills:** the redesign of services can reshape the roles required to meet the needs of citizens. There may be a need to retrain long-standing members of staff or expand the profile of roles within government and find ways to work towards a common purpose with their supplier ecosystem (see Chapter 2: Digital culture and skills in the public sector).

In the case of Panama, these six areas are being addressed to greater or lesser extents. This chapter will consider the existing culture of service design and delivery in Panama before assessing the resources that support efficient and innovative service delivery. This will look at connectivity and inclusion, Government as a Platform (GaaP) capabilities, data and interoperability, emerging and disruptive technologies, and cross-border services.

Culture for service design and delivery in Panama

Policies and laws

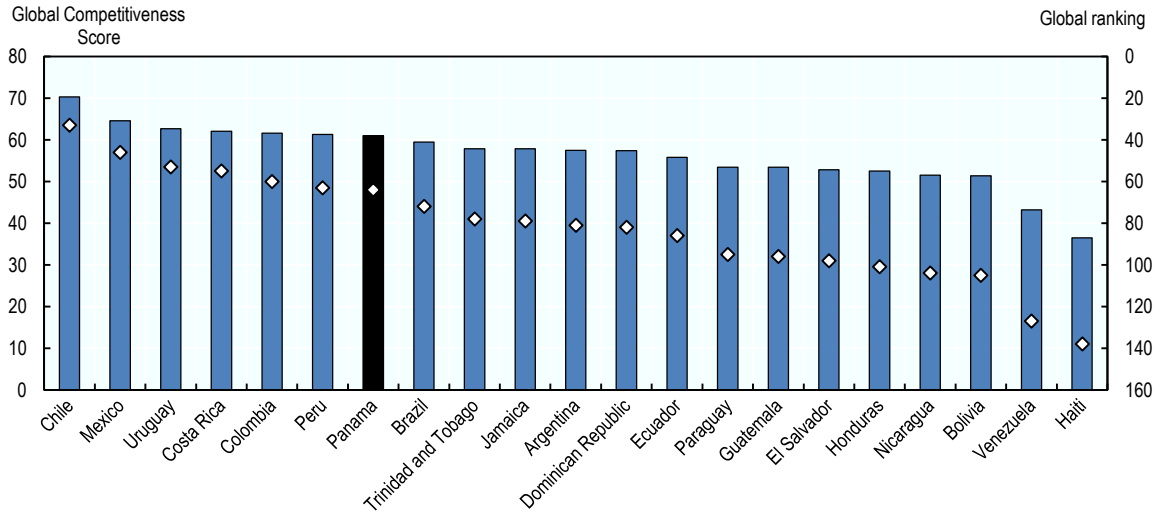
The Panamanian Government (Gobierno de Panama, 2014[1]) has set out the objective for Panama of providing efficient and effective government services in three ways:

1. Providing efficient and effective personalised government services available to all citizens at no cost that are transparent, simplified, timely and free from corruption.
2. Transform the management of public services to encourage greater participation of the public and demonstrate greater transparency of government.
3. Consolidate many of the similar responsibilities of the state to create single entities with responsibility for a given subject.

These objectives create the environment in which Panama has considered its priorities for delivering new and transformed services. The National Secretariat for Competitiveness and Logistics (*Secretaría Nacional de Competitividad y Logística*) and the Centre for National Competitiveness (*Centro Nacional de Competitividad*, CNC) identify areas where the country needs to improve its performance according to indices provided by organisations such as the World Economic Forum (Figure 4.2) (World Economic Forum, 2018[2]) and the World Bank (The World Bank, 2019[3]).

Additionally, in line with Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[4]), each institution is also expected to set out its annual plans for the simplification of procedures (see Box 4.1). These plans are expected to contain projects that improve the relationship between businesses and citizens, reduce bureaucracy and increase productivity. Central to the success of those plans is the ambition of *Panama en Linea* (PEL) to unify and consolidate efforts for meeting the needs of citizens and companies.

Figure 4.2. The World Economic Forum Global Competitiveness Index 4.0



Note: Top 10 countries in Latin America and the Caribbean Global Competitiveness Index. Overall ranking is shown on the secondary axis.
Source: World Economic Forum (2018[2]), *The Global Competitiveness Report 2018*, https://www.weforum.org/reports/the-global-competitveness-report-2018.

Box 4.1. Decree on Simplification of Procedures

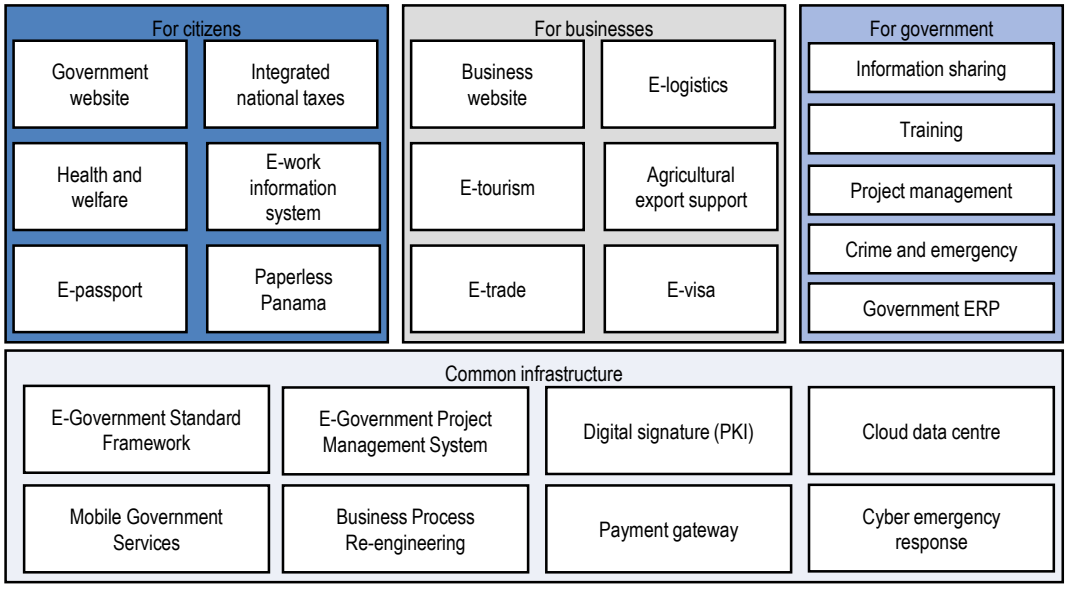
In accordance with Law No. 83 of 9 November 2012, Executive Decree No. 357 of 9 August 2016 establishes that institutions are required to prepare a plan for the simplification of procedures. In those plans, institutions list and categorise processes according to the following criteria:

1. Level 1: The procedure is listed on *PanamáTramita.*
2. Level 2: A form can be accessed through *PanamáTramita*, downloaded, filled out and taken to the relevant institution.
3. Level 3: A form can be accessed through *PanamáTramita* and while the process can be initiated on line through *Panamá en Linea* (PEL), a face-to-face visit to the institution must be carried out to complete it.
4. Level 4: The process can be completed via PEL and tracked through *PanamáTramita.*
5. Level 5: The procedure has been eliminated and no action is required by the citizen to meet this need.

Two levels of digitalisation are defined – either with or without reengineering. This makes it possible to identify those processes where immediate value can be added by simply putting the interaction on line against those services that would benefit from a longer-term redesign and reengineering.

These efforts are supported by the 311 Citizen Contact Centre (*Centro de Atención Ciudadana*) which facilitates citizens and businesses to make suggestions for improvements to procedures and a route to reporting any institution that requests a document that is not listed on *PanamáTramita*. The Executive Decree also requires an institution to justify any new procedure before its implementation and sets out the process by which a citizen or business might challenge its introduction.

Figure 4.3. AIG provided applications and platforms



Source: Autoridad Nacional para la Innovación Gubernamental (2016[5]), *Agenda Digital 2014-2019 Panamá 4.0*, http://innovacion.gob.pa/descargas/Agenda_Digital_Estrategica_2014-2019.pdf.

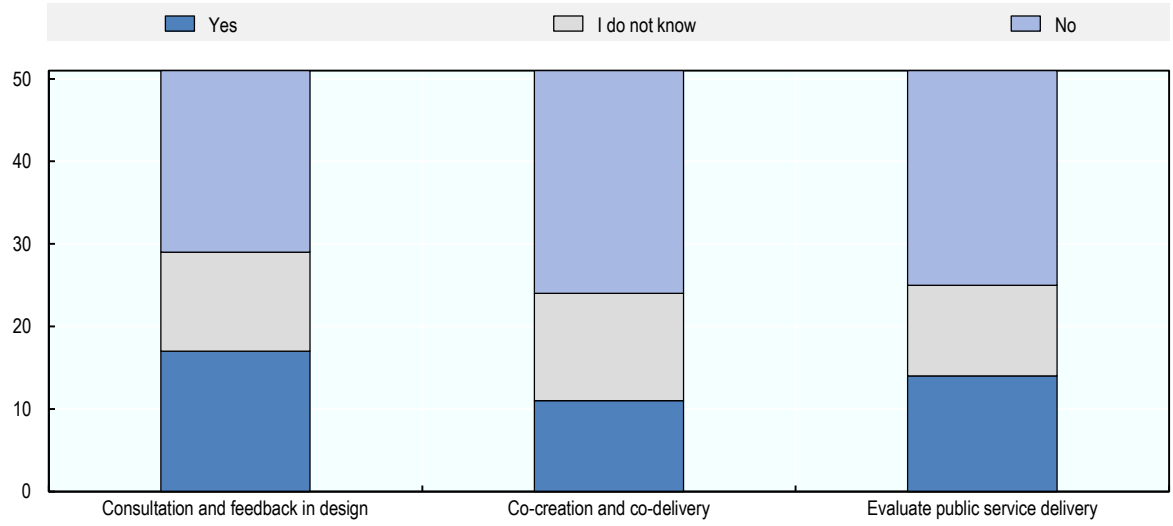
Practices and tools

Additional priorities are set by AIG in terms of identifying the 450 most important procedures and forms as well as the development of multi-channel applications and cross-government technical platforms. Those technical platforms (Figure 4.3) cover four areas: citizens, entrepreneurs, government and common infrastructure.

In 2012, AIG began working with the Justice system in Panama to transform the experience of justice across its several branches of government. This collaboration involved all the necessary stakeholders and saw a transformative approach taken to the end-to-end experience in delivering the Accusatory Penal System (*Sistema Penal Acusatorio*, SPA). They took the existing, complex process and broke it into its constituent parts in order to arrive at an understanding of the needs of both those accessing the services and those providing them. This made it possible to prioritise particular elements of the journey and address different elements over time. By 2018, this resulted in transforming not only existing digital elements but also the issues related to physical infrastructure and analogue interactions in the entire experience of justice. There is no longer any paper involved and, according to information obtained during the fact-finding interviews, it has reduced the time involved by 96%. This kind of end-to-end transformation that addresses the entirety of a service in both its back office and public facing experiences provides an aspirational model for the rest of Panama, and other countries, to follow.

However, apart from this excellent example, the language and characteristics of service design were less visible in the way in which public servants in Panama discuss their approaches to transform service delivery. AIG's vision and strategy for providing the support required to deliver services in Panama are technology-led. Achieving successful digitisation and administrative simplification is equated with the implementation of common technology providing online access to government rather than in a design-led transformation of the underlying services. Several of these platforms are well used but there is a danger of seeing platforms and technology proliferate to solve ad hoc needs rather than strategic efforts to join up government and design end-to-end services.

Figure 4.4. Extent to which institutions have formal policies for consultation and feedback, co-creation and co-delivery, or evaluation of public service delivery



Note: Based on the response of 51 institutions.
Source: Based on information provided in response to OECD (2019[6]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 37: "Is there a formal policy in your institution for Consultation and feedback in public service design?/Co-creation and co-delivery of public services?/Evaluation of public service delivery?".

The language of teams and the process by which prioritisation happens is not reflective of users' needs. This is reflected in the survey of institutions where, as Figure 4.4 shows, only 33% (17 out of 51) of institutions have the expectation of involving the public in consultation over service design, 27% (14 out of 51) do so in the evaluation of services and 22% (11 out of 51) in pursuit of co-creation. As a result, apps and different technologies are being built that respond to particular problems rather than considering more strategic design questions such as the importance of resolving barriers to the implementation of the once-only-principle for data exchange and a channel agnostic approach to services that reflects the diversity of the country's population. Although there are examples of involving the public and putting them at the centre of shaping certain outcomes, the dominant culture of service design and delivery in Panama is not one that gives the public a sizeable voice.

This lack of decision-making based on an understanding of the needs of citizens highlighted that government tends to be more reactive to needs that come up in the course of implementing its agreed direction rather than proactively focusing on what is important and strategically thinking about how best to deliver the transformation of Panama's public services in general. The voice of the private and public sectors is represented through an annual public-private dialogue between AIG and the CNC facilitated as part of the National Competitive Forum (*Foro Nacional para la Competitividad*), as well as special working groups and a study commissioned by AIG to CNC. However, the OECD peer review team found little evidence of actively making space for citizens to inform the understanding of their needs or contribute to the ongoing design and development of their services. The notable exception was the citizen survey commissioned by AIG for the CNC in identifying the priorities for simplification, which generated over 1 000 responses and benefitted from accessing citizens through the *InfoPlazas* network (see Chapter 4: Digital inclusion).

Capturing an understanding of the needs to which existing services have been responding is critical to prioritising future transformation efforts. Increasing the involvement of citizens can also generate the momentum for adoption. Several stakeholders recognised that awareness of some of the services, and the transformation which the Panamanian government has achieved, is low amongst the public. One

response is Panama's plan to invest in a communication campaign from June 2019 to promote these activities whilst another is to fund activities within the *InfoPlazas* network focusing on the digital skills of communities in order for them to be comfortable in transitioning to an online experience.

Government services are generally needed at a point in time rather than being offered as a consumer product and should not be judged on the same metrics of success in terms of repeat visits or time on site. The priority, therefore, is to design a service that meets needs and is delivered in a coherent, readily accessible way. The key to unlocking adoption is to provide services so good that people choose to use them, rather than needing to spend a lot of effort in persuading them to shift channels. Building a culture within Panama that places users at its heart and is driven by their needs will ensure that the government's efforts to transform services are well received by the public and can promote public trust.

The ambition for a coherent and pan-governmental transformation of Panama was stated on several occasions. For AIG this may require moving beyond the softer behaviours of consensus building and consultancy on request towards a bolder and more directive set of strategic activities such as a service standard with an associated assessment process that develops and enforces the delivery practices of the ecosystem to transform Panamanian government services.

Providing the resources and enablers that support delivery and adoption

Support for the design and delivery of services comes in many forms. These activities meet the needs of service teams in the work of researching, designing and implementing a given approach but also speak to the challenges of adoption and ensuring that the public experience the benefits as fully as possible.

For the public, this can take the form of enhanced connectivity and increased digital literacy, single government domains that rationalise and unify the information provided by government, or common branding for non-digital service channels such as telephone call centres or face-to-face locations.

In the case of government teams, the resources that make it easier to deliver proactive government services include the interoperability and ease of sharing data (as discussed in Chapter 3), the enabling role of innovation and disruptive technologies and the provision of reusable solutions to common problems. However, the opportunities for collaborating with resources like these can sometimes rely on serendipity and prior relationships to discover what might be available. During the OECD peer review mission, the review team held one meeting where the participants discovered a solution to a long-standing problem because they had been brought around the table together; this is not efficient or sustainable and Box 4.2 discusses how the ***United Kingdom*** has implemented a "Service Toolkit" approach to surfacing these reusable resources.

In this section, the review considers questions of digital inclusion, Government as a Platform capabilities, data and interoperability, emerging and disruptive technologies and innovation, and cross-border services.

Digital inclusion

Digital divides are a significant obstacle to the successful and effective delivery of digital government strategies. As such, countries should not focus on following a "digital by default" approach that excludes all other routes to accessing government services except for digital ones, no matter how well designed they are. Nevertheless, governments should consider the role of digital infrastructure, digital inclusion and accessibility in their digital government efforts.

Box 4.2. The United Kingdom's Service Toolkit

In the United Kingdom, the digital transformation of government is led by the Government Digital Service (GDS), a part of the Cabinet Office. As a central function, they provide leadership, set standards, offer guidance and build technological solutions. Collectively, these resources form a Government as a Platform ecosystem of support and reference that enables service teams to deliver more effectively.

Although GDS has a remit within central government, the value of their work is recognised across every level of the UK's public sector, making it essential to provide a reference point for the different resources that they provide. This is done through the Service Toolkit, a single page bringing together all the things that are available to help teams building government services.

The Toolkit contains links to:

1. Technology and digital standards.
2. Guidance on specific technology and digital topics as well as design and style guidance for using the UK's single domain and common approach to design.
3. GOV.UK services – technologies available to teams building and running government services like payments, notifications, digital identity and data registers.
4. Monitoring services for data on service performance.
5. Buying skills and technology for building digital services.

Each of the things that are included within the toolkit are the responsibility of a team who consider how to continually make these standards, guidance and tools better suited to the needs of colleagues within the public sector. Adopting this "product" mentality to internal resources is a valuable means of prioritising development and removing the obstacles that reduce the impact and effectiveness of the collected resources.

Source: GOV.UK, *Design and build government services* (https://www.gov.uk/service-toolkit)

Connectivity infrastructure

There have been important interventions to extend the ability to get online throughout the country in ways that in some cases benefit the public and in others government actors. Underpinning Panama's digital infrastructure is the advanced connectivity offered by six fibre optic submarine cables. One of the opportunities for public sector organisations is in nationally available cloud infrastructure, the Government Cloud (*Nube Computacional Gubernamental*, NCG) and the National Multi-service Network (*Red Nacional Multiservicios*, RNMS) which securely connect government through more than 4 000 data links managed by AIG.

Of the institutions surveyed for this review, 41 knew of its availability to some parts of Panamanian society whilst 18 were using it themselves. This state-provisioned, Panama-based, secure and private cloud is available for all institutions, obviating the need for them to develop such solutions themselves. In the case of municipal governments this is particularly important, as 90% of them do not have the budget to consider developing what might be needed. All that is charged are the costs of cloud consumption. The ambition is for NCG to be the platform for all government software covering Infrastructure as a Service, Platform as a Service and Software as a Service capabilities.

Law No. 59 of 11 August 2008 (Asamblea Nacional, 2008[7]) to promote universal access to ICTs created the National Internet Network (*Red Nacional Internet*, RNI*)* to implement Internet connectivity across the country. With 39.3% of Panamanian society lacking Internet access at home (International

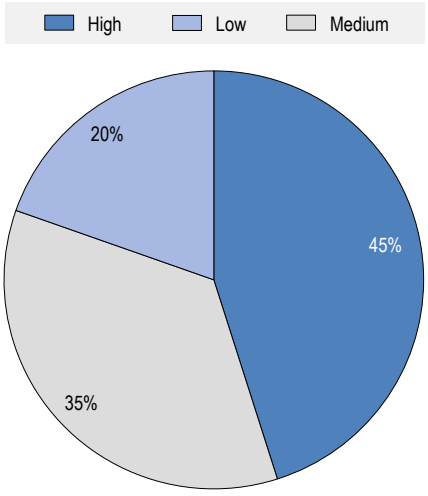
Telecommunication Union, 2018[8]), the RNI allows every citizen access to free Wi-Fi on their personal devices within certain filtering parameters to protect citizens and guard against misuse. This network for connectivity now provides 86% of the country's population with free access to the Internet and there are ongoing ambitions for this to increase in line with the National Broadband Plan (Gubernamental/IDB, Autoridad Nacional para la Innovación, 2013[9]).

Digital literacy

One significant intervention in attempting to close the digital divide in terms of the inequality between those who may have access to the Internet or knowledge of its benefits, compared to those who do not, is the *InfoPlazas* programme operated by the National Secretariat of Science, Technology and Innovation (*Secretaría Nacional de Ciencia, Tecnología e Innovación*, SENACYT) and funded by the Inter-American Development Bank (IDB) (Banco Interamericano de Desarrollo, 2015[10]). Whilst the RNI is an important effort in providing access to Internet for the 39.7% of Panamanians without access in their homes, the 312 *InfoPlazas* have a remit that is more than Internet access alone in offering training and building knowledge to take full advantage of online services. Furthermore, this nationwide network could offer the ideal setting in which to involve local communities and citizens in the discovery of needs and development of solutions to their problems.

The *InfoPlazas* network is a valuable piece of physical infrastructure to support digital literacy, entrepreneurship and other cross-government agendas as well as for encouraging more proactive and user-driven approaches. It should be seen as a critical enabler for the 41 out of 51 institutions in Figure 4.5 that view digital inclusion as a medium to high priority, with the greatest focus being on rural communities, those with low income and indigenous communities.

Figure 4.5. Priority of digital inclusion in Panama's digital government agenda



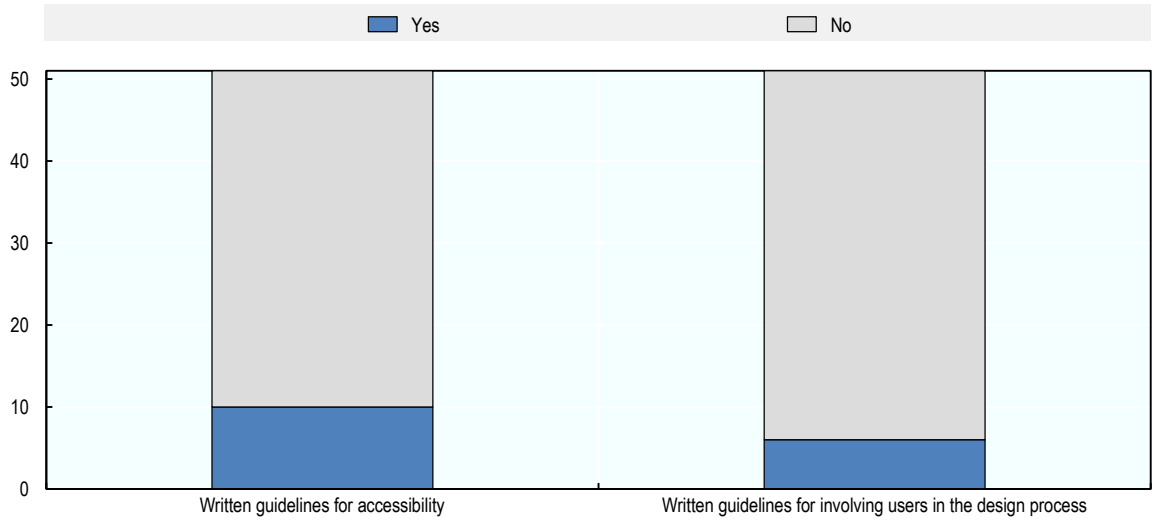
Note: Based on the response of 51 institutions.
Source: Based on information provided in response to OECD (2019[6]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 39: "How would you score the priority given to digital inclusion in your country digital government agenda?".

Accessibility

Alongside the connectivity to access the Internet and the skills to be able to enjoy its benefits, a third important area of inclusion is the accessibility of services. Such is the priority of this issue that countries

often pass legislation to ensure access in the context of the built environment, even whilst it is overlooked when it comes to digital services. Panama is no different with Figure 4.6 showing only ten organisations were aware of written guidelines concerning accessibility. This should be seen as a priority for Panama to address, perhaps by emulating the experience of the European Union (EU) where the Directive on the Accessibility of Websites and Mobile Applications has enshrined in the law the requirement for websites and mobile apps to meet common accessibility standards built around the four principles of the Web Content Accessibility Guidelines (WCAG) 2.0 (European Union, 2016[11]).

Figure 4.6. The existence of centrally produced written guidelines for accessibility and engagement in Panama



Note: Based on the response of 51 institutions.
Source: Based on information provided in response to OECD (2019[6]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 41: "At the central/federal level, do you have written guidelines regarding accessibility of digital government services to meet all users' preferences/engagement of final users in the service design process?".

Government as a Platform capabilities

Several countries around the world have been exploring a Government as a Platform approach to meeting the frequently experienced challenges of delivery government services by providing common, reusable capabilities. The OECD defines it as "building an ecosystem to support and equip public servants to design effective policy and deliver quality services that also encourages government to collaborate with citizens, businesses, civil society and others" (Welby, 2019[12]). The ecosystem being established in Panama provides several valuable contributions that support the delivery of services, but it is not yet providing a full complement of such capabilities.

Panamá en Linea (PEL) is best understood as two separate projects working together: first, *PanamáTramita*, a list of all government procedures and requirements that provides the necessary information for citizens to complete the interactions and make requests of government; second, the technical platforms which allow for the development of government procedures, an authentication mechanism and the technical support for interoperability. It hints at an ambition for the future where there is a seamless user experience from the perspective of the citizen.

The transaction engine that sits behind PEL makes it possible for institutions to develop procedures and create services based on an associated workflow. This platform is designed to make it possible for government institutions to develop the skills of their own staff to maintain and deliver new online services.

This technical solution to the challenge of developing an online workflow is complemented by work on process mapping that has produced a blueprint for 450 procedures and developed a mechanism for understanding the existing landscape of services in Panama.

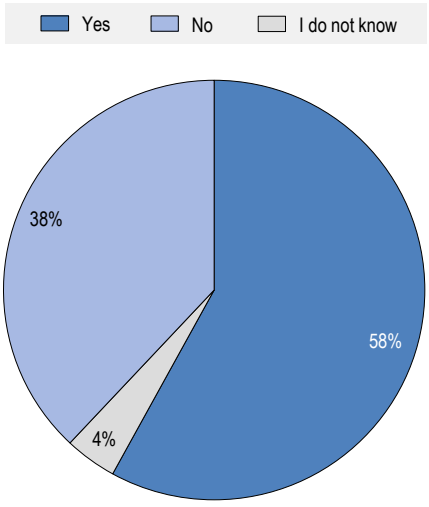
Several platforms have been implemented to provide support in different sectors. In the health sector, there is a collaborative effort to digitise health records with participation from both public and private sector actors. At a local level, *Municipios Digitales* has facilitated the implementation of a standardised website for 74 out of the country's 77 municipal authorities. In addition, the OpenBravo Municipal Government Resource Planning platform (covering financial, administrative and integrated accounting systems) has been implemented in 66 municipalities allowing for interoperability and the development of online procedures and payments through the PEL platform. This has allowed municipal governments to focus on the needs of their users rather than developing systems. Moreover, the National Payments Portal (*Portal Nacional de Pagos*) offers a single route for consolidating all debts across the public sector whilst the Document Management System (*Sistema de Gestión Documental*) platform provides a secure and confidential way of distributing electronically signed, official documents.

AIG is investing in central capacity to manage the platforms and applications that have been developed. This ensures new initiatives can be explored whilst ensuring that the Government as a Platform service offering remains reliable and of high quality.

Channels for accessing services

The ambition of the PEL agenda is to create a single route into accessing government services acting as a common brand that can support citizens in navigating the complexity of government and not needing to understand its structures. However, whilst these technical platforms may support the digitalisation of government interactions, there is not yet a single route into their access or rationalisation of the web estate for Panama's public sector.

Figure 4.7. Inclusion of institutional digital services within *PanamáTramita*

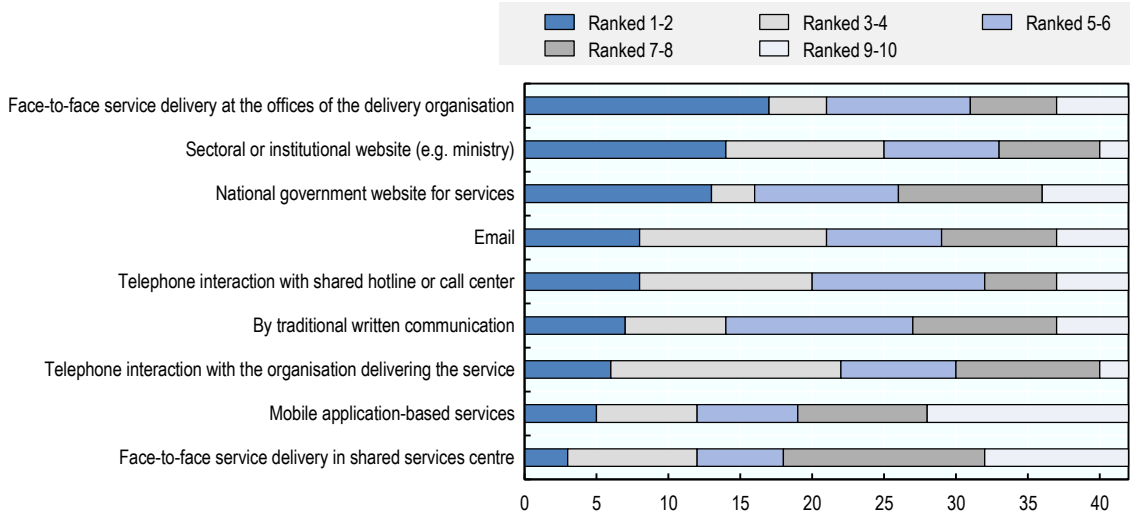


Note: Based on the response of 50 institutions.
Source: Based on information provided in response to OECD (2019[6]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 51: "Are the digital services provided by your institution showcased and/or available in the main national citizens and/or businesses website for government services?".

An important foundation for service delivery in Panama has been the development of the website *PanamáTramita* (www.panamatramita.gob.pa/). In indexing the 2 700 procedures which take place between citizens or business and central government and another 1 463 with the local government, it is creating an important map of activity within the government that can provide the basis for prioritising any future transformation of the state. As established in Executive Decree No. 357 of 9 August 2016, any new procedure or additional requirements must be justified before they are included within *PanamáTramita, which* prevents public officials requesting documents or creating new processes that are not already detailed, limiting the growth of bureaucracy. However, whilst *PanamáTramita* may be an effective catalogue of services, it is not the only way for them to be accessed. Figure 4.7 shows that 69% (29 out of 42) of public service-providing institutions include their services on *PanamáTramita*. This means that a third of organisations do not.

Moreover, Figure 4.8 shows that there is a preference amongst the institutions for services to be accessed through their own specific websites rather than the centralised site. Although Panama has developed a strategy of providing all services through the single access point of *PanamáTramita*, the persistence of separate, institutional websites has the potential to confuse users and undermine those strategic efforts at common branding and consistent user experiences.

Figure 4.8. The relative importance of different channels in accessing services in Panama



Note: Based on the response of 42 institutions.
Source: Based on information provided in response to OECD (2019[6]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 46: "Please indicate the relative importance of each of the following channels in delivering transactional services for your institution".

Figure 4.8 also demonstrates the importance of non-digital channels in Panama with particularly strong support for the ongoing provision of face-to-face channels through the offices of the organisation delivering the service. However, the lowest recorded enthusiasm was for shared service centres, like *InfoPlazas*. As seen in Box 4.1, it is only at Stages 4 and 5 that the need for a face-to-face interaction is removed and whilst the desire will exist for users to shift away from the more expensive and less efficient physical interactions, it is clear that there is an ongoing appetite for these channels. Indeed, for those organisations prioritising the digital channel, there was a consistent drop in their promotion of telephone and face-to-face interactions.

The online channel is complemented by the 311 Citizen Contact Centre through which citizens have free access to all institutions at every level of the Panama public sector 24 hours a day, 7 days a week, 365 days

a year. Through this channel, citizens can make complaints or report problems, propose ideas and enquire about particular issues whilst also carrying out procedures with the state. Crucially, the 311 Citizen Contact Centre also maintains a record of all events carried out between a citizen and the government, allowing for a single view of the user and their experience with government.

However, despite these efforts to create that single view of a citizen from the perspective of the government, the same is not the case when the government is seen by the public. Whilst the 311 Citizen Contact Centre is an effective single front door for Panamanian services, it does not share the branding of PEL and is potentially a further source of competition to the various websites or proliferation of platforms and apps elsewhere. There is, therefore, something of a fragmented user experience with competing institutional channels for different services, indicating that the importance of designing good end-to-end services is not always understood at an institutional level.

Box 4.3. Thematic Group on the Design and Delivery of Services

In 2017, the Working Party of Senior Digital Government Officials (E-Leaders) Thematic Group on the Design and Delivery of Services set out to revise the best practices and main challenges for providing digital services and improving the experience of citizens when interacting with government. Bringing together the experiences of Australia, Canada, Chile, Egypt, Mexico, New Zealand, Portugal and the United Kingdom they proposed the following General Digital Service Design Principles:

1. **User-driven**: optimise the service around how users can, want or need to use it, rather than forcing users to change their behaviour to accommodate the service.
2. **Security and privacy-focused**: uphold the principles of user security and privacy whenever a digital service is provided.
3. **Open standards**: prioritise freely adopted, implemented and extended standards.
4. **Agile methods**: build services using agile, iterative and user-centred methods.
5. **Government as a Platform**: build modular, API-enabled data, content, transactional services and business rules for re-use across government and third-party service providers.
6. **Accessibility**: support social inclusion for people with disabilities as well as others, such as older people, people in rural areas and people in developing countries.
7. **Consistent and responsive design**: build the service with responsive design methods using common design patterns within a style guide.
8. **Participatory processes**: design platforms and methodologies that take into account civic participation in researching, updating and developing services.
9. **Performance measurement**: measure performance such as digital take-up, user satisfaction, digital service completion rates and cost per transaction for better decision-making.
10. **Encourage use**: promote the use of digital services across a range of channels, including emerging opportunities such as social media.

Source: Working Party of Senior Digital Government Officials (E-Leaders) Thematic Group on the Design and Delivery of Services, E-Leaders Lisbon Meeting, 2017.

Standards and guidance

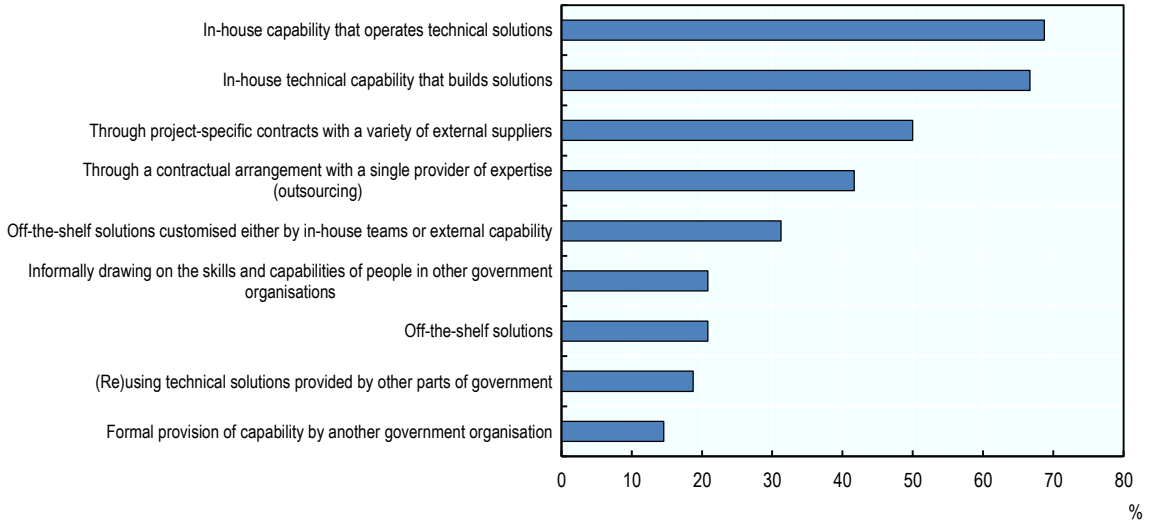
Around the world, countries are exploring ways to establish the criteria for assessing the delivery of services and judging their quality. This has resulted in at least 21 service standards being produced for different tiers and jurisdictions of government around the world alongside guidance and resources to

support digital government teams in their approach to delivery and understanding of performance (Pope, n.d.[13]). The summary proposed by the Working Party of Senior Digital Government Officials (E-Leaders) Thematic Group on the Design and Delivery of Services is discussed in Box 4.3. Panama does not have a comparable design assurance process for government teams or external suppliers although six organisations identified there being written guidelines on how to involve the public in informing and shaping the design of services. Nor has Panama developed an easily accessed set of reference materials for supporting the dissemination of knowledge throughout the sector (the example of the ***United Kingdom***'s Service Toolkit is discussed in Box 4.2).

Instead, Panama has developed a repeatable model for identifying the interaction patterns of a given service and providing the necessary technical components that allow teams to create a digital representation of the approach. This has allowed Panama to move quickly in the digitisation of services. Whilst success may currently be measured by the number of processes accessible online, the next phase of Panama's digital government efforts to reengineer end-to-end services, which are data-driven and proactively meet the needs of citizens, may require a different approach. The adoption of a service standard and the production of guidance to resource, empower and encourage teams across the government may prove beneficial.

This support should be targeted at both those working within government and its supplier ecosystem. Figure 4.9 shows that 69% (33 out of 48) of institutions in Panama favour in-house capabilities but there are equally strong roles for external companies with 41% (20 out of 48) of delivery being done through wholly outsourced activities and 50% (24 out of 48) of organisations using external suppliers for project specific activities.

Figure 4.9. Approach to designing, building and maintaining online services



Note: Based on the response of 48 institutions.
Source: Based on information provided in response to OECD (2019[6]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 48: "How does your institution design, build and maintain online services?"

Digital identity (DI)

In personal interactions with the people we know we do not request proof of their identity. Even when we meet someone for the first time, we accept that they are who they say they are. However, in dealings with businesses and government, such questions cannot be taken on trust and an identity must be proven. As a result, individuals have ended up with physical tokens to show someone, which prove an identity. These

approaches do not support successful digital government. Successful digital governments offer services that work for people wherever they are and without the need for any physical interaction to prove identity.

Technology has been applied to this problem through the creation of digital signatures and the adoption of password-based account services. These solutions tend to lack co-ordination and result in government and citizens juggling multiple authentication credentials. Increasingly, governments are looking to develop DI strategies that resolve this complexity and provide a single, verifiable and secured identity for citizens to interact with government services and maybe even the private sector too. In a benchmarking exercise the OECD conducted to assess the DI experience of 13 countries for a forthcoming study of Chile, 7 separate identity models were identified, 2 of which are discussed in Box 4.4.

Box 4.4. DI in Italy and New Zealand

The Italian Public Digital Identity System (*il Sistema Pubblico di Identità Digitale,* SPID)

SPID enables Italian citizens to access online government services through a single DI (username and password). It allows public administrations to replace their locally managed authentication services with a resulting cost saving in ongoing running costs and the work involved with credentials. Moreover, compared to these legacy approaches, SPID increases the level of assurance that the person accessing the service is who they claim to be.

The basic level of authentication offered by SPID uses a single factor model with a pair of username and password credentials. The password is user-generated in accordance with a stated password policy and must be changed at least every three months. Resets to the password are only possible after successfully answering security questions. In addition to this basic authentication, more advanced levels of authentication offer greater security.

Italy has decided that SPID will be mandated in future and that all government services will retire any legacy authentication models. To do this they have developed a simple process by which it can be added to a government service, documented at https://developers.italia.it/en/spid.

SPID is confirmed as the Italian approach for providing eIDAS-compatible services (see **Box 4.7**) within the EU.

New Zealand's RealMe Scheme

The RealMe scheme allows citizens to access multiple government services with the same username and password. Users wanting to access a service are handed to the RealMe platform as part of their journey and, after authentication, handed back to the service. RealMe stores no information but simply validates that a user can access a service: the individual retains control over what information they share and when they share it.

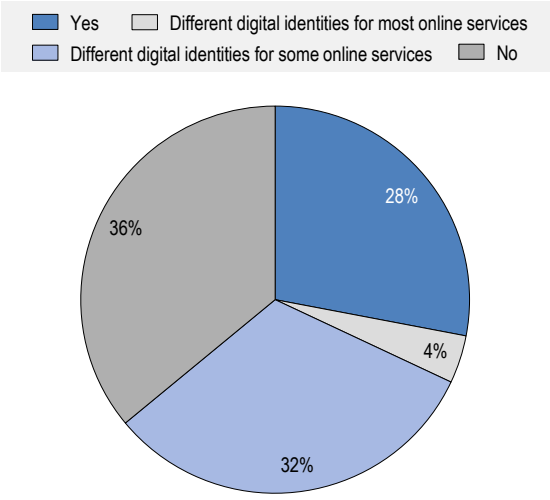
The RealMe service was developed in partnership by the Department of Internal Affairs and the New Zealand Post. It responds to the needs of government whilst also providing the basis for DI in the private sector. Users can use it for a range of services including opening a bank account, enrolling to vote, transferring foreign currency, applying for a loan or allowance, and renewing their passport online.

Source: Provided by Italy and New Zealand in response to the OECD survey Benchmarking Digital Identity Solutions (Unpublished).

In Panama, the foundations for DI were recognised in Executive Decree No. 719 of 15 November 2013, which made provision for services using the electronic signature to be treated as though they had been conducted on a face-to-face basis. In the *Agenda Digital 2014-19 PANAMÁ 4.0* (Autoridad Nacional para la Innovación Gubernamental, 2016[5]), the ambition for DI was presented with the expectation that all

users would be authenticated via a mechanism administered by the Electoral Court of Panama (*Tribunal Electoral de Panamá*) built on top of the country's public registry and its physical identity infrastructure. The intention was that any government applications delivered under the umbrella of PEL would do so with the backing of this DI model, eliminating the need for interaction in person and simplifying outstanding legal barriers to the transformation of services. Despite the existence of the necessary legal frameworks to implement DI and recognise electronic signatures, the efforts to implement this enabler of digital government have stalled, with a pilot test of a DI (*Cédula Inteligente*) only recently initiated. Figure 4.10 highlights the fragmentation of the situation. Of the 14 institutions that were aware of the proposed single identity service, only 6 were using it, whilst 3 were in the process of developing their own solution. A further 18 acknowledged that citizens could create and manage different Dis in order to access the services they require.

Figure 4.10. Institutional approaches to DI in Panama



Note: Based on the response of 50 institutions.
Source: Based on information provided in response to OECD (2019[6]), *Digital Government Survey of Panama, Public Sector Organisations Version*, Unpublished, OECD, Paris, Question 52: "Is there a single digital identity system being used by the central/federal government in your country?"

Whilst a technical solution is necessary, it is only one part of the response required to realise the transformative impact of DI. A further issue is the governance for DI. Responsibility has fallen to the Electoral Court of Panama (*Tribunal Electoral de Panamá*) because they are the organisation that holds the analogue records and has responsibility for analogue identity mechanisms. However, with DI so integral to the transformation of the state, AIG needs to assume increased responsibility for the strategic outcomes associated with its design, delivery and implementation rather than acting primarily on a consultative and co-ordinating basis.

A second area for concern is Panama's tendency to focus on technology. Rather than implementing technology that addresses the identity step in a formerly analogue process, DI mechanisms built with data-driven interoperability in mind can have a transformative impact on avoiding particular steps, reusing existing data sources and rethinking the way in which a citizen or business might interact with the state. DI should be a springboard for Panama to redesign the state in a way that recognises the context of their citizens, not simply to implement technology and digitise interactions.

Data and interoperability

Panama has done important work in terms of the foundations for interoperability. Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[4]), requires all government databases to be interoperable; Resolution No. 12 of November 16 2015 (Consejo Nacional para la Innovación Gubernamental, 2015[14]) created the National Interoperability and Security Committee with a standing representative from AIG; and Resolution No. 15 of 3 May 2016 (Consejo Nacional para la Innovación Gubernamental, 2016[15]) set out the interoperability framework for Panama and the steps expected for how institutions would achieve its implementation.

The RNMS is a data exchange network that connects government institutions across the country with secure telephony and connections into the NCG. It forms the basis for the technical response to the challenge of interoperability through which institutions can publish and access data for delivering cross-government services.

Work on the various platforms is a clear indicator of a commitment to developing mechanisms that make interoperability possible across the Panamanian public sector but this is still nascent. Indeed, although Panama has the once-only-principle enshrined in Law No. 83 of 9 November 2012 (Asamblea Nacional, 2012[4]), the OECD peer review team was informed on multiple occasions of services where citizens or businesses would need to provide information already held by one part of government to another in order to address their issue. Greater support, whether through legislation, increased mandate or political will towards the ongoing efforts of AIG and the enforcement of the existing law, is needed for interoperability to be assured between platforms and government organisations. An increase in the integration of data and systems will enable Panama to consider the design of end-to-end services that respond proactively to the needs of citizens as well as providing a focus for surfacing and addressing the challenges of legacy technologies.

Nevertheless, as Panama looks to develop a more coherently joined-up approach to government in general, it is important to recognise that interoperability is not solely a technical challenge. In the case of SPA and Justice (discussed earlier) and the Platform for the Integration of the Logistic and Trade Systems in Panama (*Plataforma Tecnológica para la Integración de los Sistemas de Logística y Comercio Exterior de Panamá*, PORTCEL), the delivery of cross-cutting platforms that enable the delivery of transformed services for these sectors was made possible by getting people to work together. The capacity for collaborating in order to deliver is every bit as important as the capacity to exchange data. This does not diminish the value of addressing the full data governance issues discussed in Chapter 3 but recognises that a focus on people may prove fruitful.

Emerging and disruptive technologies and innovation

Disruptive technologies, such as artificial intelligence (AI) and distributed ledger technology (DLT), are increasingly the focus of debate when it comes to the future of service delivery in both the public and private sectors. The opportunities offered by these technologies to governments for enabling a more effective policymaking process, enhancing the trust and integrity of record keeping and delivering services that are personalised and proactive, are seductive. Maximising their public value presents challenges in understanding where their use is worthwhile whilst at the same time maintaining the regulatory care and attention that is required. The National Secretariat of Science, Technology and Innovation (*Secretaría Nacional de Ciencia, Tecnología e Innovación*, SENACYT) is an active partner with AIG in exploring the role of innovation in society more broadly and there is a great opportunity for the two to work more closely together in the future.

The existing regulatory and legal frameworks in which countries operate can sometimes be constraining in terms of allowing governments and businesses to respond to the changing priorities of society and for innovators to embrace the opportunities of emerging, disruptive technologies. This is because they can be

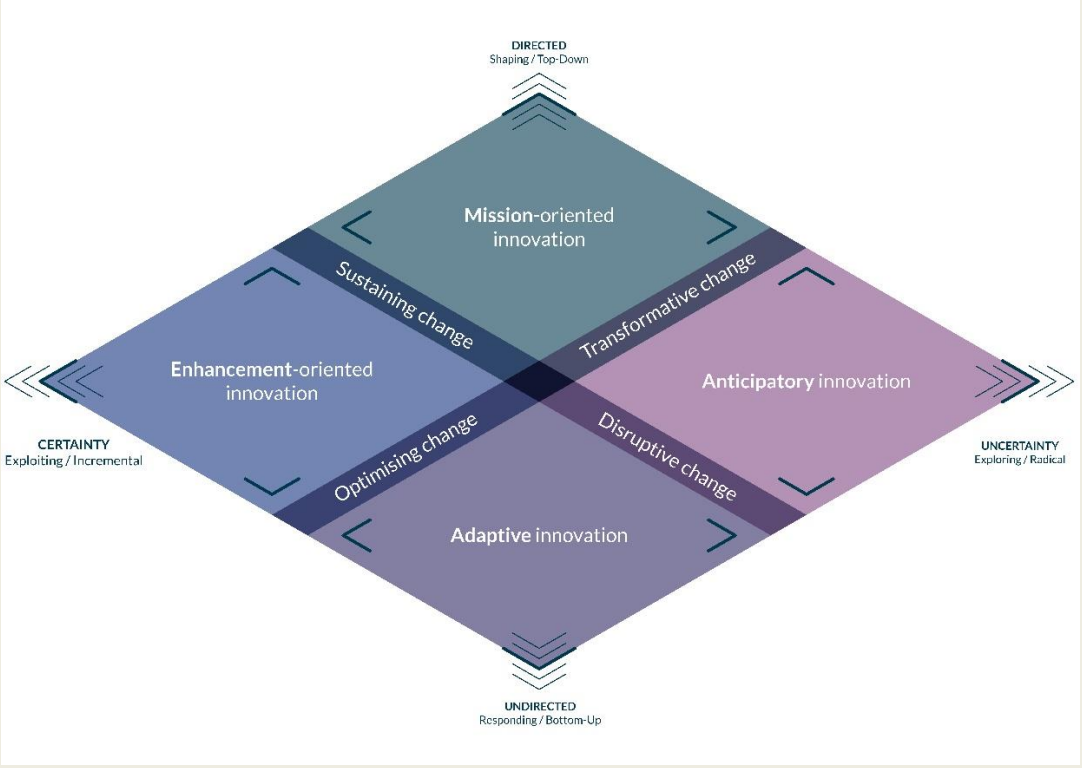
specifically tailored towards the particular industries, technologies, processes or analogue systems available when they were introduced. In light of the new challenges, which the digital transformation introduces to regulating industry and government, it is important to find ways to augment and evolve existing practices rather than introducing new, onerous, overheads on either those being regulated or carrying out the regulatory activities. As such, enforcement and compliance methodologies should increasingly put users at the centre, be they individuals or organisations (OECD, 2018[16]). One way of supporting these efforts is to build partnerships between academics, the private sector and innovation labs to explore the implication of emerging and disruptive technology and facilitate spaces for working closely together with implementing organisations that will test thinking in practice, not in theory. In Panama, the regulatory body is attempting to shift the focus away from technologies and towards the regulation of services. This focus on the outcome, rather than the technology, can set an important precedent for the way in which Panama responds to future opportunities.

Box 4.5. Public sector innovation facets

The OECD Observatory of Public Sector Innovation (OPSI) has identified that public sector innovation has multiple facets with different change taking place at the intersections between them. The model below identifies these facets as:

1. **Enhancement-oriented** – starting with the question of "How might we do X better?", it is not about questioning what is being done but rather how it is done and whether it can be done differently and hopefully better.
2. **Mission-oriented** – asking "How might we achieve X?", with X ranging from the world-changing (going to the moon) to the significant but relatively contained (ensuring better services). It starts with a driving ambition to achieve an articulated goal, though the specifics of how it might be done are still unclear or fluid.
3. **Adaptive** – starts with the question "How might our evolved situation change how we do X?". Adaptive innovation is about realising that things happen that do not fit with what is expected.
4. **Anticipatory** – starts with the question of "How might emerging possibilities fundamentally change what X could or should be?", with X being the relevant government response or activity. Anticipatory innovation is about recognising and engaging with significant uncertainty around not only what works but also what is appropriate or possible

Figure 4.11. Public sector innovation facets



Source: OECD Observatory of Public Sector Innovation (https://oecd-opsi.org/projects/innovation-facets/).

As the digital government agenda in Panama matures, what was once “innovative” becomes more of a mainstream activity. For AIG, this presents a challenge in balancing the need for a focus on operational excellence and continuous improvement of government services with the horizon-scanning role of stimulating and supporting innovation. The OECD Observatory of Public Sector Innovation has developed a model for considering the different facets of innovation and the change that it precipitates, which could prove valuable for Panama in understanding how to evolve its approach to innovation (Box 4.5).

There were only limited references to emerging or disruptive technologies during the review. This reflects the current focus of the Panamanian public sector on delivering the fundamentals of digital transformation rather than being distracted by the promise and hype of the future. Nevertheless, there are some important sectors in Panama’s economy where exploring the role of emerging and disruptive technologies may prove fruitful such as those associated with the Panama Canal. Following existing work to digitally transform trade through the development of PORTCEL, the sea, land and air logistics cluster is exploring emerging and disruptive technologies in conjunction with their international partners. The importance of Panama to global trade provides an important opportunity for Panama to develop expertise, stimulate innovation and incubate new businesses.

The plan to build AIG’s Centre of Excellence for Digital Government and Innovation at the *Ciudad del Saber* (City of Knowledge) and next door to SENACYT will locate AIG closer to the academic and private sectors based there with facilities that support AIG’s mandate and allow a greater contribution to developing the digital transformation and innovation ecosystem in Panama. Working with them to build public-private partnerships could provide the necessary funding and expertise to explore applications of emerging and disruptive technologies that may otherwise be impossible. Panama has shown a strong commitment to supporting innovation within the private sector, but it may now be valuable to pursue the encouragement of partnerships supporting innovation in the delivery of public services in the country by working with multilateral funding organisations to support these efforts. In the ***United Kingdom***, the GovTech Catalyst has provided GBP 20 million to support a competition where public sector organisations can find innovative solutions to operational service and policy delivery challenges, whilst in Portugal a EUR 10 million funding program for data science and the use of artificial intelligence in the public administration has funded:

1. Pattern analysis on prescriptions (enabled by other efforts to ensure 90% of these interactions are already electronic) to identify situations where excessive prescription of antibiotics may represent a health risk.
2. Analysis of the skills present in the unemployed labour force compared to the needs of the job market to identify those who are most at risk of becoming long-term unemployed and in need of targeted training.
3. Development of models to allow better targeting of inspections by public bodies of food safety and business activity.

Box 4.6. Panama Digital Hub

The Panama Digital Hub is an alliance between public, private and academic sectors to establish Panama as a centre for digital innovation. The Panamanian Chamber of Information Technology, Innovation and Technology (*Cámara Panameña de Tecnologías de Información, Innovación, y Telecomunicaciones*, CAPATEC) and SENACYT have taken the lead in developing the strategy.

The strategy focuses on three things:

- Building international calibre innovation that launches new products and services for an international audience through acquiring skills in research and development.
- Building export capacity for those products and services
- Identifying ways to ensure that these activities are sustainable and embedded in Panama so that they outlast the period of the strategy.

The Digital Hub has four pillars designed to strategically strengthen the opportunities for economic development through digital innovation and entrepreneurship:

1. Human talent.
2. Physical and social infrastructure.
3. Financial resources.
4. Legal and regulatory framework.

In July 2018, Executive Decree No. 455 of July 2018 set out five priorities for the next phase of the Digital Hub programme:

1. Establishing a National Institute of Advanced Scientific Research in Information and Communication Technologies (*Instituto Nacional de Investigaciones Científicas Avanzadas en Tecnologías de Información y Comunicación*, INDICATIC).
2. Creating the International Center for Technological Development and Free Software (*Centro Internacional de Desarrollo Tecnológico y Software Libre*, CIDETYS).
3. Developing a timetable and action plan for establishing a Regional Data Exchange Center.
4. Facilitating and encouraging Fintech companies to innovate and base themselves in Panama through the development of a regulatory sandbox.
5. Updating the tax platform and the associated rules affecting the digital economy and e-commerce.

Source: Panamá Hub Digital (https://www.panamahub.digital)

The geography of Panama places it at the confluence of global trade and at the heart of international conversations as well as with an important interest in climate change. Several of the world's leading technology companies recruit remote workers in Panama and the ambition to become a logistical hub for the region's humanitarian aid sector reflects the opportunities for international organisations to base themselves in the country. Multiple areas within Panama's economy and society offer interesting opportunities to stimulate start-ups and model transformed delivery of service whether in trade, ecology, tourism or other services based on its already established base of multinationals and its privileged connectivity. As the country develops its "digital hub" strategy (Box 4.6), expands its own data protection frameworks (see Chapter 3: Data protection) and builds advanced data and interconnectivity infrastructure (see Chapter 4: Digital inclusion), the digital economy in Panama will benefit and provide increasing opportunities for the country to increase its global reach and explore new markets. Aside from the delivery

of services that cross borders (see Chapter 4: Cross-border services), Panama should expand its efforts to attract inward investment in the areas of digital, data and technology to create a conducive environment for innovation.

Cross-border services

Citizens, businesses and governments increasingly consume content, access services and transact without regard to national borders or geographic context. The *OECD Recommendation of the Council on Digital Government Strategies* (OECD, 2014[17]) identifies the potential of international co-operation for knowledge sharing, strategic co-ordination and collaboration across borders to use digital, data and technology to deliver better outcomes for their citizens.

The geography and geopolitics of Panama and the importance to its economy of trade, and in particular the role of the Panama Canal, means that this is not a new discussion in terms of developing the country's expertise. The logistics sector was defined as a priority by the Government in order to speed up the movement of goods through the border, minimise delays and generally introduce the benefits of digital transformation. PORTCEL is an important intervention to reduce the use of paper, ensure that data is easily shared and reduce the time it takes to cross the border (Gobierno de Panama, 2014[1]). By following open standards and working in partnership with regional and international partners, it facilitates the seamless movement of goods, vehicles and workers between jurisdictions. The survey highlighted other examples of cross-border data exchange and service delivery in Panama:

1. the work of the National Customs Authority (*Autoridad Nacional de Aduanas,* ANA) in terms of customs declarations and information about drivers and vehicles
2. the National System of Civil Protection (*Sistema Nacional de Protección Civil*, SINAPROC) works with neighbouring Costa Rica
3. and the Ministry of Commerce and Industry (*Ministerio de Comercio e Industria*, MICI) in its interactions with the World Intellectual Property Organization.

However, there are many areas where the country is not yet thinking about the experience of services that are shaped by having to cross a border. This gap was particularly noticeable in discussions about the immigration service. Whilst this would not be seen as a priority for Panamanian citizens, the process by which someone receives permission to work impacts on several hundred people a day and generates significant internal effort. The 12-step process takes 1 to 2 months to complete and can only be initiated, in person, once they are physically in the country.

Cross-border services should respond to the needs of citizens and businesses in terms of the design and priority of issues to address. In order to enable such development to take place, there needs to be a recognition of the following critical activities (OECD, 2018[18]):

1. Alignment of legal frameworks.
2. Adoption of common data and architecture standards.
3. Interoperability of DI.
4. Mutual recognition of digital certificates.

As has been discussed elsewhere in this review, these are areas that Panama must address to fully realise the potential opportunities at a domestic level. However, such efforts would benefit from being approached with an awareness of the need for developing regional and international partnerships such as that modelled between ***Finland*** and ***Estonia*** (OECD, 2015[19]). As such, this is not something that can be implemented in the short term. Developing cross-border services requires political will as well as investment in terms of budget and capabilities.

Box 4.7. Cross-border recognition of credentials

Argentina's driving licence

In Argentina, the *Mi Argentina* mobile application allows citizens to access a digital version of their driver's licence. It has the same legal power as the physical equivalent and is automatically generated if the citizen is already in possession of a valid driver's licence. The National Digital Driver's Licence is built on top of the Argentinian Digital Identity System (*Sistema de. Identidad Digital*, SID) which provides remote validation of citizens' identity using biometric data.

Because so many Argentinians regularly travel across the border to neighbouring Chile and Uruguay, efforts have been made with their respective governments for this digital licence to have the same validity in those countries. This approach has benefitted from the Digital Agenda Group of the Southern Common Market (MERCOSUR) working together to identify and prioritise public services that could be delivered across borders.

Source: Lanzan la versión digital del registro de conducir que se podrá "llevar" en el celular (Jueguen, 2019[45]), Argentina just made driving licences digital (Public Digital, 2019[46])

European Regulation 910/2014 (eIDAS)

In the EU, cross-border recognition and legitimisation of identity mechanisms are backed not by the re-use of a particular set of credentials, as in the case of Argentina, but by a focus on developing an agreed standards approach to those technical solutions.

The eIDAS regulation provides an important legal basis to the delivery of cross-border services and the easy movement of citizens from one jurisdiction to another within the single market. Established in EU Regulation No. 910/2014 of 23 July 2014, it has been providing the legal underpinnings to the conditions under which member states have developed and enhanced DI solutions that could be recognised by other countries and reused by their citizens to access services throughout the single market.

From 29 September 2018, any organisation delivering public services in an EU member state must recognise electronic identification from all EU member states. The development of DI approaches on the basis of standards makes it possible for services to be accessed across a region without people needing to create them every time.

Source: eIDAS – The Ecosystem (European Union, n.d.[47])

The experience of the EU in developing the European Digital Single Market provides a possible template for Latin America and Caribbean countries to emulate despite the significant differences between their respective political and economic alignments. The EU's desire to simplify the way in which businesses and customers transact across borders is underpinned by efforts to address any regulatory barriers to moving from individual national markets to a single, EU-wide rulebook. The EU estimates benefits of EUR 415 billion per year in economic growth, job creation, competition, investment and innovation in the EU. Several of the opportunities here exist for the private sector with associated efforts from governments to make it easy to open businesses or comply with tax regimes but the agenda also commits to strengthening joint efforts on cybersecurity, making DI portable and guarding citizen data rights (European Commission, 2015[20]).

The countries of Latin America and the Caribbean have been working together to strengthen their co-operation and knowledge sharing on digital government through the e-Government Network of Latin America and the Caribbean (*Red de Gobierno Electrónico de América Latina y el Caribe*, Red GEALC).

Panama is clearly a leader in the regional discussion on digital transformation with their presidency and hosting of the V Ministerial Meeting of the Red GEALC in 2018, a demonstrable success. This role affords the country an opportunity to help define and shape a cross-border strategy for the Central American region. Efforts to develop cross-border services in the region will further benefit from the support of the IDB and Panama's role within the Organization of American States (OAS) and the Asia-Pacific Economic Cooperation (APEC).

These efforts to achieve closer relationships between countries in the region lead naturally into the development of cross-border services to simplify the movement between countries for work, study, business or leisure. Whilst this might be accepted in principle, putting it into practice may prove harder given the differing levels of digital development and domestic politics in the relevant countries. Therefore, adopting a standards-based approach to these activities would be advisable. Not only would it allow those countries that can identify and deliver value quickly to explore how such an approach might become more widely adopted (as seen by Argentina's work on their digital driving licence in Box 4.7), but it would mean that these benefits were not limited to the Central American region. As seen in the trade agreement signed between the EU and Japan, having a clear and effective approach to data protection has allowed for a mutual recognition of equivalency between those regimes and the opening up of particular industries to trade that might otherwise have been limited (European Union/Government of Japan, 2018[21]).

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Digital Government Review of Panama

ENHANCING THE DIGITAL TRANSFORMATION OF THE PUBLIC SECTOR

This review explores how Panama can enhance and harness digital government to achieve broader strategic goals at both national and local levels. It looks at institutional governance, legislation, and inter-departmental co-ordination, including institutional capacities and skills for delivering quality public services. It identifies opportunities for making public service delivery more efficient and inclusive, as well as for expanding the strategic use of data. The review provides policy recommendations to help Panama enable and sustain the digital transformation of the public sector.

This publication is a contribution to the OECD Going Digital project which aims to provide policymakers with the tools they need to help their economies and societies prosper in an increasingly digital and data-driven world.

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