OECD Digital Government Studies

Digital Government Review of Latin America and the Caribbean

BUILDING INCLUSIVE AND RESPONSIVE PUBLIC SERVICES

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DEVELOPMENT BANK OF LATIN AMERICA AND THE CARIBBEAN

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Foreword

The fast-paced digital transformation of societies and economies challenges governments' capacity to design and deliver timely and quality services that adapt to changing expectations and needs of households and businesses. In this context, building a mature digital government is critical to seize the opportunities while manage the risks emerging from the digital transformation in the public sector. The OECD Digital Government Reviews aim to assist governments in their digital journey to increase public sector efficiency and contribute to more equitable, inclusive and participatory societies and economies.

For almost a decade, digital government is a top political priority for governments in Latin America and the Caribbean (LAC), but levels of development and maturity vary among countries. As governments across the region advance in their digital transition, adopting more ambitious national -and regional – strategies and investing in a range of digital capabilities should be a priority to best use digital technologies and data to achieve a human-centric and coherent transformation of public administrations, and provide better public services.

The *Digital Government Review of Latin America and the Caribbean* provides a regional assessment and policy recommendations for the LAC region, as a roadmap to improve their digital government maturity, with a focus on five areas:

- Strengthening governance for the digital transformation of the public sector
- Building capabilities, talents and skills in governments
- Developing regional public sector data integration
- Improving the design and delivery of public services in the digital age
- Increasing digital innovation in the public sector

Developed jointly by the OECD and CAF, development bank of Latin America and the Caribbean, the Review builds on the provisions of the OECD Recommendations on Digital Government Strategies, on the Governance of Digital identity and on Enhanced Access to and Sharing of Data, and on the OECD Digital Government Policy Framework. Governments from 14 LAC countries and members of CAF participated in the Review: Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.

The policy recommendations presented in this Review are based on a rigorous and thorough analysis of existing strategies, policies and initiatives on digital government. They aim to inform government decisions in LAC to develop inclusive and responsive public services in the digital age and contribute to ongoing efforts towards a regional approach to digital government.

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Chapter 1 was written by Ricardo Zapata, Chapter 2 was written by Alex Seemann, Chapter 3 was written by Arturo Rivera, Chapter 4 was written by Felipe González-Zapata, and Chapter 5 was written by Jamie Berryhill, Policy Analysts in the Open and Innovative Government Division. All chapters benefitted from substantive inputs from María Isabel Mejía, and strategic orientation and revisions by Barbara-Chiara Ubaldi. Felipe González-Zapata was the lead co-ordinator of the Review. Colleagues from within the OECD reviewed the report and provided comments, including Jacobo Garcia Villareal from GOV Infrastructure and Public Procurement Division (IPP) and Manuel Flores Romero from GOV Regulatory Policy Division (REG). The report also benefited from the expertise of the OECD Working Party of Senior Digital Government Officials (E-Leaders).

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Abbreviations and acronyms

AGESIC	Uruguay's Agency for Electronic Government and the Information and Knowledge Society
AGETIC	Bolivia's Agency for Electronic Government and Information and Communication Technologies
AIG	Panama's National Authority for Government Innovation
AN	Andean Community
APEC	Asia-Pacific Economic Cooperation
CAF	Andean Development Corporation
CARICOM	Caribbean Community
DGD	Chile's Digital Government Division
ECLAC	Economic Commission for Latin America and the Caribbean
GEALC	Network of E-Government in Latin America and the Caribbean
IDB	Inter-American Development Bank
MERCOSUR	Southern Common Market
MICITT	Costa Rica's Ministry of Science, Innovation, Technology and Telecommunications
MINTEL	Ecuador's Ministry of Telecommunications
MINTIC	Colombia's Ministry of Information and Communication Technologies
MIST	Barbados' Ministry of Innovation, Science and Smart Technology
MITIC	Paraguay's Ministry of Information Technologies and Communication
NDGS	National Digital Government Strategy
OAS	Organisation of American States
OGTIC	Dominican Republic's Government Office of Information and Communication Technologies
SEGDI	Peru's Secretariat of Digital Government
SEGIB	Ibero-American General Secretariat
SICA	Central American Integrated System

Executive summary

As the fast-paced digital transformation brings tremendous opportunities for citizens to participate in society and the economy, these can be also undermined by the risks associated with how digital technologies are developed, used, and adopted. Embracing a human-centric approach to the digital transformation is essential to leverage its opportunities while managing related risks, in order to deliver results that benefit all and leave no one behind. Taking decisive steps to strengthen digital government is thus critical for governments to be able to meet today's public governance challenges as well as the evolving needs of societies. Given the increasing adoption of digital technologies in the public sector, governments need to develop solid governance arrangements and capabilities that enable a fair, trustworthy, and sustainable digital transformation.

The digital transition of LAC governments follows a similar path as that observed across OECD member countries. Governments have embraced the adoption and use of digital tools for more transparent and efficient processes (e-government), reflected in public sector reforms and strategies to modernise services and digitise government institutions. These efforts are particularly relevant for addressing pressing regional priorities such as overcoming social, economic and digital inequalities, and for improving public sector transparency. Despite the progress made, LAC governments still face significant challenges in achieving a human-centric, integrated, and sustainable digital transformation of the public sector (digital government). While governments are addressing disparities in digital connectivity, concrete actions can be taken to secure an inclusive digitalisation of public services in the region.

First, LAC countries can prioritise strengthening the governance of digital government. Most countries have embedded digital transformation functions within the machinery of government; however, digital government authorities still require further empowerment, such as having a stronger role in setting standards and investment decisions. While mainstreamed, digital government strategies could be more ambitious and comprehensive to enable a system-wide digital transformation in the public sector. Digital government strategies in the region largely ignore several areas that, if prioritised, can produce long-lasting and effective results. These include the development of digital talent in the public sector; coherent approaches for more inclusive design and delivery of government services across levels of government; and the development of dedicated capacities to invest on digital government.

Second, more decisive actions are needed to enable data-driven public sectors in LAC. To develop a regional integrated public sector data approach, and reap the benefits of cross-border interoperability, LAC countries should formalise roles, functions and strategies for government data. Countries face significant challenges for effective data governance, including addressing legacy data infrastructure and interoperability systems to improve data access and sharing, as well as formalising the ethical use of data in the public sector. Despite the momentum achieved during the past decade, open government data policies require further institutionalisation and connection with broader regional agendas, including on climate change and the use of artificial intelligence (AI) in the public sector.

Finally, the digital transformation of LAC governments should result in more convenient, coherent, and responsive government services for individuals and businesses. Despite the increasing availability of public services through digital channels, LAC countries make less of an effort to understand users and their needs

throughout service design. Similarly, further efforts are needed to ensure a seamless experience for users across online and offline channels. For example, further actions are needed to improve the mutual recognition and interoperability of digital tools among LAC governments to facilitate cross-border access to government services.

Key policy recommendations

Governance, strategies, and institutional setup for digital government

- Secure strong political leadership for digital government policies within national agendas, empowering digital government authorities.
- Strengthen the strategic approach for digital government through comprehensive and forward-looking national digital government strategies, prioritising efforts to enable an inclusive and user-centric approach digital transformation.
- Increase efforts to promote co-ordination and alignment between national and sub-national digital government policies through dedicated co-operation mechanisms such as incentive funds, capacity building and shared digital public infrastructure.

Public sector capabilities to invest on and implement digital government

- Adopt strategic and whole-of-government planning and co-ordination mechanisms for coherent investments in the digital transformation of the public sector.
- Use investments in digital government to secure a coherent and consistent digital transformation of the public sector, fostering compliance with digital standards.
- Use public procurement more innovatively and strategically to support the implementation of digital transformation investments in the public sector.
- Develop an organisational environment to attract, develop and retain digital talent in the public sector.

Data governance, sharing and use in the public sector

- Secure stronger political support and data leadership
- Work towards inclusive national data strategies for the LAC region and link them with efforts to improve AI strategies and governance.
- Develop greater regional data integration through regulatory harmonization, data stewardship, data interoperability, and the provision of digital public goods such as open-source, open application programming interfaces (APIs), and open data.
- Invest further in promoting AI and data ethics.
- Improve digital security.
- Increase digital and data literacy across public bodies and society.

Design and delivery of public services in the digital age

- Develop a culture and capacities to support a user-centric approach in public service design and delivery, promoting horizontal and multi-disciplinary collaboration within the public sector to better understand users, meet their needs and propose an inclusive and responsive experience.

- Anchor public service design and delivery in national priorities and agendas, defining specific governance arrangements to promote collaboration and integration among public services providers to deliver a seamless experience to users.
- Prioritise the development of core enabling conditions for the digitalisation of public services, promoting standardisation, scalability and interoperability of digital public infrastructure within countries and across the LAC region.

Digital innovation in the public sector

- Reinforce capacities and commitment for digital innovation in the public sector, promoting the use of common methodologies and approaches to govern and scale-up public sector innovation.
- Promote the development of GovTech ecosystems to support the implementation of digital government strategies and improve public sector capacities to effectively collaborate with start-ups, innovators and entrepreneurs.

Assessment and recommendations

This chapter presents the assessment of the state of digital government in Latin America and the Caribbean (LAC) based on the analysis undertaken through this review, conducted between 2020 and 2022 amidst COVID-19 response and recovery efforts. It also includes concrete and actionable recommendations which aim to support LAC governments in advancing the digital transformation of their public sector. The assessment and recommendations are organised around the five areas of study included in this review: 1) governance of digital government; 2) digital government investments and digital skills; 3) data-driven public sector; 4) public service design and delivery in the digital age; and 5) digital innovation and GovTech.

Governance of digital government

Strengthening the institutional setup to drive the digital government agenda

Leading digital government

Most countries in Latin America and the Caribbean (88%) have established organisations in charge of digital government across the central or federal government, located generally within a line ministry or a special agency, and to a lesser extent in the centre of government or a co-ordinating ministry. However, not all these institutions have a sufficient set of responsibilities and mandates securing their ability to steer the implementation of digital government reforms, policies and initiatives coherently across the public sector. Only half or less of the organisations in the region responsible for digital government have decision making responsibilities such as the capacity to provide financial support, approve the development and implementation of digital transformation initiatives, mandate external reviews, or enforce standards on digital technologies across the central or federal government.

Steering and co-ordinating digital government

A modest majority of LAC countries (59%) have established digital government co-ordination bodies, intended as entities bringing together chief digital officers from public sector institutions, or individuals with similar roles, to align the implementation of digital government reforms and strategies.

Most of these co-ordination bodies play an advisory role and only a few have decision-making responsibilities, particularly centred around the prioritisation of digital/ICT projects investment across the central/federal government. The limited presence of these decision-making bodies across LAC countries hampers the capacity for aligning public sector institutions with major strategic objectives and for the coherent implementation of digital government policies and projects.

Reinforcing the digital government agenda

National Digital Government Strategies and Regional Strategic Instruments

The LAC region has advanced in creating national and regional strategic instruments defining the vision, goals, and milestones for the implementation of digital government policies. While almost all countries (94%) have adopted national digital government strategies (NDGS), around half of the strategies analysed date from 2020 or before, highlighting the need of keeping them up to date in line with the rapidly evolving digital landscape. Regional strategic instruments for digital government are generally articulated around broader digital agendas spanning multiple countries. However, these agendas do not always encompass a comprehensive set of digital government priorities and often lack adequate monitoring mechanisms. A second challenge is securing alignment with regional priority issues, particularly in areas such as digital inclusion, given that the region still falls behind OECD average (84%) of individuals making use of internet. This includes addressing access to digital technologies and fostering the development of necessary skills both within the public sector and the population-at-large. It is noteworthy that countries align their digital government objectives with broader digital agendas and most dedicated NDGS have monitoring instruments in place.

In terms of strategic priorities, national digital government strategies and regional strategic instruments target societal objectives such as improving citizens' well-being, increasing the efficiency of the public sector to deliver higher value, streamlining, and enhancing access to public services, or improving collaboration with and participation of citizens in policy making. Among concrete action points, national and regional strategic efforts focus on the governance of digital government and the delivery of digital services, supported by goals to increase privacy, security, digital public infrastructure (including digital

identity), and public sector innovation capabilities. Most current regional instruments are not comprehensive, focusing primarily on government services, public innovation, and open data.

Furthermore, countries have advanced in developing broader digital agendas including targets on the development of connectivity, telecommunication networks, innovation and entrepreneurship, digitalisation of SMEs and emerging technologies, with less attention on skills, talent, digital inclusion, and digital government (ECLAC, 2022[1])). Nevertheless, digital development across countries in the LAC region is uneven. Such context demands greater efforts and special attention to regional inequalities while creating synergies and joint digital government agendas.

Aligning normative and regulatory frameworks towards digital government

Most LAC countries (above 80%) cover in their legislations issues such as privacy and data protection, transparency and access to public sector information, digital signature, e-procurement, cybersecurity, and digital government. However, approximately half of the countries in the region have not fully kept pace with topics generally addressed by OECD countries related with advanced digital capabilities and proactive and anticipatory approaches within their legal and regulatory frameworks. These include digital identity, once-only principle, access to private sector information/data, digital by design, cloud computing, legal and/or regulatory sandboxes, artificial intelligence, emerging technologies, the right to challenge (i.e., ability to apply for exemptions from existing rules, or ability to request rules be reconsidered), among others. As a result the necessary safeguards for the correct planning, implementation, and monitoring of digital government initiatives are not sufficiency up to date in half of the region.

Proposals for action

In light of the key assessments detailed above which draw on the main findings and analysis included in Chapter 1 of this review, LAC governments could consider implementing the following policy recommendations:

1. **Reinforce the leadership and co-ordination for digital government.** The following priorities can be considered:
   a. Secure political leadership for digital government policies through dedicated and recognised institutions to help advance whole-of-government strategic transformations beyond the technical aspects.
   b. Set clear and contextually adapted responsibilities for the institution in charge of digital government, enabling it to drive the digital government agenda according to the needs and conditions in each country.
   c. Increase efforts to build more robust co-ordination bodies supporting the coherent development of digital government across the public sector, with dedicated and articulated functions to coordinate the development, implementation, monitoring, and financial support of National Digital Government Strategies (NDGS).
   d. Expand the scope of the stakeholders engaged in existing co-ordination bodies, considering the inclusion of sub-national governments and strategic non-governmental actors.
   e. Establish explicit co-ordination and support mechanisms from the central/federal government to sub-national governments in order to align digital government policies and share capabilities for implementation across states, provinces, and municipalities.
2. **Strengthen the strategic approach for digital government through comprehensive and forward-looking national digital government strategies.** The following priorities can be considered:
   a. Where not available, consider adopting a dedicated NDGS to enhance implementation and accountability of the digital government agenda through measurable targets.
   b. Where in place, regularly update NDGS to secure that goals and actions are relevant and adapted to the changing technological, economic, cultural, and political landscape, and aligned with key priority issues in the region, such as inclusion, skills, access to digital technologies, and trust in government.
   c. Increase efforts to co-ordinate national digital government policies with sub-national governments through dedicated co-operation mechanisms, incentive funds, capacity building, shared digital public infrastructure, among others.
   d. Consider developing a dedicated and comprehensive digital government strategy for the LAC region, including targets on co-operation, the development of shared resources and common projects, regulatory harmonisation, regional governance mechanisms, and a shared vision adapted to the different contexts across and within countries.
   e. Improve the alignment of regional strategic instruments with digital development and co-operation agendas through common objectives, actions lines, projects, and indicators.
   f. Foster civil society participation in the design and delivery of digital government policies to reinforce government accountability, increase citizens' empowerment and engagement in decision-making, and tap on wider networks and ecosystems for innovation in policy making and service delivery.

	g. Make of building trust between citizens and the government a strategic priority of NDGS, including by adopting explicit indicators and strategic objectives related to public trust within national and regional digital government strategies.
3.	**Adjust the legal and regulatory framework to anchor digital transformation efforts and support the transition from e-government to digital government.** The following actions can be considered: a. Where in place, be proactive in improving the legal and regulatory frameworks to unlock the potential for a responsible, inclusive, and coherent use of digital technologies in government. b. Where necessary, align the legal and regulatory frameworks with key policy priorities associated with a user-centred, proactive, and whole-of-the-government approach to digital government. c. Establish stronger ethical, security, and human rights safeguards through the adoption of binding and non-binding normative frameworks to prevent any potential harm caused by the use of digital technologies and data by and in governments.

Public sector capabilities for digital transformation

Digital Government Investments

Strategic planning of digital government investments

Strategic planning is the cornerstone for an efficient and coherent approach to digital government investments. It reflects the co-ordination and alignment of the relevant stakeholders around key policy goals and the actions required to achieve them through public investments. LAC governments still face challenges to align efforts between digital, budget and procurement authorities on digital government investment decisions in an institutional context where budget authorities lead resource allocation. As a result, there seems to be space for governments to strengthen horizontal co-ordination and collaboration in the approval process to foster alignment between key stakeholders e.g., budgeting, investment, procurement and digital authorities.

Additionally, digital government authorities in LAC countries often do not seem to have concrete and actionable mechanisms to support the coherent planning for digital government investments, including dedicated and comprehensive value proposition mechanisms, risk assessment and mitigation tools.

Furthermore, countries included in this report largely follow a traditional approach in the value proposition rather than acknowledging the specific benefits of the digital transformation, including its underlying economies of scale and network effects. Additionally, rising and pressing global challenges, such as the green transition, call for updating relevant frameworks in LAC so that multi-faceted decisions on digital investments can better contribute to the achievement of broader challenges (including social, economic, environmental and security considerations).

Implementation of digital government investments

Countries in the region have an opportunity to leverage the approval process to enhance the management of digital investment portfolios by securing compliance with digital standards across governments, and secure alignment and co-ordination among different authorities. Evidence shows that governments in LAC are generally utilising national guidelines and directives to streamline the management and implementation of digital investments across public sector institutions. In most countries, these are non-mandatory standards that guide the implementation of digital government investments and build coherent implementation.

Regarding the procurement of digital goods and services, governments in the region often use traditional public procurement mechanisms, reflecting an existing opportunity for countries in LAC to use public procurement more strategically in digital goods and services to achieve other objectives than value-for-money. Similarly, innovative procurement mechanisms remain an exception rather than a regular practice when procuring digital goods and services in the region, despite the availability of relevant laws and regulations enabling for instance experimentation or partnerships with GovTech. Digital authorities in the

region are well placed to collaborate with procurement agencies to leverage public procurement as a strategic tool and policy lever for the digital transformation of the public sector and achieving broader objectives of their digitalisation policies.

Monitoring and evaluation of digital government investments

Governments in the region have not adopted dedicated monitoring and evaluation mechanisms for digital government investments. The absence of investment portfolio monitoring mechanisms has an impact on the capacity of the public sector to take strategic digital investments decision-making through reliable and timely information that identifies and informs on potential problems so that digital government and other competent authorities can act appropriately.

Evidence shows that some countries in the region have advanced in collecting insights and data on user experience in digital government investments; however, these practices are still limited in terms of coverage and purpose. These efforts are undoubtedly a necessary but insufficient condition to fully exploit the benefits of digital government to deliver better services. Despite these initial steps to collect information on user experience, countries in the region still show difficulties using and channelling this information into the formulation of future investments.

Digital Talent and Skills

Building an environment to foster digital transformation of governments

More mature digital government requires an enabling cultural environment across the public sector, for example, by accepting risk taking, fostering experimentation, building multidisciplinary teams and promoting flexible ways of working. Governments in LAC still face challenges when encouraging experimentation in the public sector due to a risk-averse culture rooted in the region's administrative and legalistic environment of the public administrations, reflected for example in burdensome and rigid auditing processes, limiting the use of innovative practices such as proof of concept and overall experimentation in the public sector. On the other hand, LAC countries have benefited from setting-up multidisciplinary teams for delivering digital projects in the public sector.

Skills to support digital government maturity

To advance in their digital maturity, governments should clearly understand and identify the skills and talents required to be able to count on a workforce adequately equipped to support the digital transformation. Skills frameworks are key policy instruments to build a shared understanding and standardisation of the skills needed to advance the digital transformation of governments. These frameworks can enable the standardisation of recruitment processes, the fine-tuning of training programmes and facilitate the identification of digital capacity gaps in public institutions. Evidence showed most LAC governments have developed skills frameworks and strategies to align and enhance training and capacity-building efforts, covering also subnational governments. Nevertheless, there is an opportunity to advance creating dedicated skill frameworks for management level and frontline service delivery public servants. The region could benefit from further collaboration between countries in the identification and development of digital skills to foster regional integration.

Establish and maintain a digital workforce in the public sector

Governments should establish dedicated efforts to attract, develop, allocate and retain digitally competent talent across the public sector. The evidence collected shows that Latin American countries have not been able to create integrated and whole-of-government approaches to attract and recruit digital talent in the public sector. Digital government authorities are well positioned to co-operate with Civil Service authorities

in defining strategies to attract and retain talent and allocate it across public sector institutions by developing integrated efforts, including dedicated instruments to support subnational governments. Finally, governments in the region introduced remote working during the COVID-19 pandemic to secure the continuity of services amidst the global disruption and there is an opportunity to adapt these flexible working schemes to attract more talent to public sector organisations.

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, LAC governments could consider implementing the following policy recommendations:

4. **Advance towards a strategic and whole-of-government planning and co-ordination mechanism for investments on digital** government**.** The following priorities can be considered**:**
   a. Advance towards two-layer co-ordination mechanisms for digital government investments at a strategic and operational level, to ensure effective communication, alignment and coherence on digital policy objectives while steering digital investment decisions towards strategic policy goals.
   b. Foster collaboration between digital, budget and procurement authorities when planning digital government investments to enhance coherence and boost efficiency in digital government spending.
   c. Develop comprehensive value proposition mechanisms to assess the merits of digital investments in the public sector, including economic, social and political considerations, that complement existing ex-ante assessment tools and criteria to support short-, medium- and long-term planning.
   d. Develop risk management frameworks which, aligned with value proposition mechanisms, help address the underlying threats and risks related to digital technologies and data, such as cybersecurity and the ethical use of data – including algorithms and AI-powered solutions.
   e. Introduce environmental considerations in the value proposition assessment of digital government investments to secure a sustainable digital transformation of the public sector and build policy coherence for the twin green and digital transitions.

5. **Use public procurement more strategically and innovate to support the implementation of investments on digital government.** The following priorities can be considered:
   a. Leverage the approval process of digital projects to secure compliance with digital standards, foster alignment between key stakeholders, and build coherence in the delivery of digital government investments.
   b. Promote and incentivise the use of agile methodologies by those responsible for implementing digital government investments and projects within central and local governments.
   c. Advance towards a more strategic approach to the public procurement of digital goods and services, exploiting the underlying economies of scale in the public sector for example through joint procurement for digital, including subnational governments.
   d. Explore the opportunity to use innovative public procurement mechanisms such as competitive dialogue, dynamic purchase systems, design contests or innovation partnerships, and challenge-based mechanisms to build agility, innovation and cost-efficiency when procuring digital goods and services.

6. **Deploy accountability mechanisms and results-oriented approaches when investing on digital government.** The following actions can be considered:
   a. Use monitoring tools as a strategic lever to steer the delivery of digital projects, for example by developing and leveraging performance indicators, including implementation progress, to provide policymakers with a comprehensive picture of the digital investment portfolio in the public sector.
   b. Adopt open-by-default approaches to the monitoring of digital government investments to build transparency and foster accountability by leveraging open government data and online dashboards to inform the progress of the digital investment portfolio.
   c. Develop standardised methodologies to measure user experience and channel these insights into the design and delivery of future digital government investments.

7. **Promote an** organisational **culture for the digital transformation of governments.** The following actions can be considered:
   a. Increase dedicated action lines in national digital government strategies to develop skills and talent for digital government among civil servants and citizens.
   b. Foster experimentation in the public sector by creating safe spaces for public officials to test and trial innovative approaches and increasing awareness among civil servants, to ultimately advance towards a cultural shift in LAC public administrations.
   c. Consolidate and expand the use of multidisciplinary teams in central and sub-national governments to benefit from different perspectives and expertise when addressing the inherent complexities of policymaking in the digital age.

8. **Develop and** maintain **comprehensive skills frameworks to advance the digital transformation of governments.** The following actions can be considered:
   a. Rethink, update and leverage digital skills frameworks to advance digital government maturity, including subnational governments, to provide a shared understanding and standardise the expected skills in the public sector workforce.

	b. Foster cross-country collaboration to identify the skills needed to drive the digital transformation of the public sector, building the ground to advance towards a regional digital skills and talent framework. c. Identify existing gaps in digital talent across the public sector to expand capacity-building initiatives and provide training to public officials with a special focus on sub-national governments.
9.	**Develop an organizational environment to attract, develop and retain digital talent in the public sector.** The following actions can be considered: a. Promote collaboration between digital government and civil service authorities to advance towards a standardised digital talent attraction and recruitment policy, including in subnational governments. b. Advance towards an integrated approach to the attraction, recruitment, allocation and retention of digital talent and digital specialists, rethinking incentives in the public sector and benefitting from economies of scale to secure digital talent in the public sector. c. Revise remote working policies to attract digital talent to the public sector while securing legal obligations and safeguarding performance management and accountability tools. d. Foster the establishment of communities of practice, professional networks, and mentoring programs flexible spaces to promote peer learning and secure a dynamic digital workforce across the public sector. e. Explore scaling up existing communities of practice at a regional level, fostering cross-country collaboration and knowledge-sharing towards common challenges and opportunities in digital government in the region.

Building data-driven public sectors

Strengthening data interoperability and infrastructures

LAC countries acknowledge the significance of data integration and interoperability across the public sector, with the COVID-19 pandemic having been a catalyst to accelerate efforts in this regard. Nevertheless, important challenges remain to be addressed, particularly regarding outdated and burdensome processes for data generation and sharing, as well as important data legacies and data maturity at the national and local level.

Steering data policy change

Regulatory frameworks

While some countries have solid legal foundations in areas such as data interoperability, open data, and personal data protection, others are still lagging behind. Specific to personal data protection, the right of *habeas data*, which gives individuals the right file a complaint against the illegitimate use of their personal data or information or is present *de jure* or *de facto* in available regulatory frameworks on personal data protection across the region. While the COVID-19 pandemic prompted some countries to update data-related regulatory frameworks coherently across the region, regulations that do not match global and regional standards or their complete absence pose a challenge for trustworthy cross-border data integration, access, and sharing.

Co-ordination and collaboration

While in some instances co-ordination among relevant stakeholders takes place at the political or decision-making level (e.g. Data Governance Boards) and in the instance of digital government co-ordination bodies, co-ordination efforts do not necessarily take place also at the technical level (e.g. among data practitioners in the public sector) or with actors outside the public sector.

Data roles and responsibilities across public bodies

In LAC, the clear attribution of data leadership roles and responsibilities across public bodies is most evident in personal data protection in line with national legislation - when available. Institutional roles on open government data are not always self-standing, thus relevant open data responsibilities are often allocated as an additional task of the officials in charge of access to public sector information. At the same

time, tactical roles such as data stewards are absent from most countries or this responsibility is allocated as part of institutional leadership roles on digital government.

Also, the emergence of data-intensive technologies such as artificial intelligence (AI) has further highlighted the gaps in relation to data management and data governance capacity within the public sector in the region, as also indicated in recent regional reports on AI by the OECD and other organisations in the LAC region (OECD/CAF (2022[2])).

Data leadership and strategies

Whole of government data leadership

Dedicated leadership positions in the data policy area, such as in the form of formal and stand-alone one-person roles are mostly absent from public sectors in LAC. The data leadership mandate, responsibilities or tasks are often attributed to the body in charge of the digital government agenda (e.g. digital government agencies, telecommunication ministries). The data leadership task under these bodies often has a strong focus on public sector interoperability. Furthermore, the leadership and/or mandate on personal data protection, access to public information, and open government data often fall in different bodies across LAC countries.

National data strategies

The adoption of national data strategies for governments are not standard practice in LAC countries. In most cases, data-related actions are included as a sub-component of digital government strategies and similar agendas or focused on specific aspects such as open government data. National data strategies often translate more into several policy tools and strategies in areas such as interoperability, open data, digital government, personal data protection and AI rather than proving an integrated action-oriented approach within a single instrument.

At the regional level, the appetite for data integration is reflected in the actions undertaken in regional trade mechanisms such as MERCOSUR and digital government networks such as Red GEALC – the Network on E-government in Latin America and the Caribbean. Other efforts are observed in the context of the Digital Nations (with Uruguay as a member) and the UNeCLAC's Digital Agenda for Latin America and the Caribbean (eLAC2022).

Open government data

Some countries have reinforced their regulatory and institutional governance arrangements for open government data, but in recent years open data efforts have stagnated due to a lack of continuity of political support to the agenda or sustainability in the implementation of open data initiatives. Open government policies remain a driver for open data initiatives in the region. Whereas open data stands as a key component of anti-corruption initiatives in the region, further work is needed to connect it to other policy challenges including the fight against climate change, the use of AI in the public sector, and the inclusion and protection of vulnerable groups.

Progress in implementation of open data policies and impact assessment remain a challenge. Also, the practice of exploring public-private partnerships to increase data re-use and identify data demand is uneven across countries. Lastly, open data efforts at the local level are growing but still incipient.

Trustworthy data access and sharing

LAC countries are still in the process of building or consolidating regulatory and institutional arrangements for personal data protection and privacy. Some LAC countries are still struggling to provide citizens with tools they can use to know how their data is being used, for what purpose and by whom within the public sector.

Also, the COVID-19 pandemic and the accelerated shift towards digitalisation of public services has brought data security to the forefront of the policy agenda, but LAC countries need to take a more proactive and preventive approach to the management of digital risks. Data ethics is a growing area, which has so far been largely understood only as related to personal data protection.

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 report, LAC governments could consider implementing the following policy recommendations:

10. **Strengthen data interoperability and infrastructures.** The following priorities can be considered**:**
    a. Map data flows, data relationships and the connection of data to services (shared or public) to increase the use of interoperability buses.
    b. Improve the discoverability and quality of data assets by promoting the development and use of data catalogues and data maturity assessments.
    c. Address multi-level data governance challenges, including data capability at the local level, exchange and scale of shared tools, and the digitalisation of public registers when needed in collaboration with local authorities.
    d. Invest further efforts to advance semantic interoperability, metadata, data classification schemas, and web services.
    e. Promote use of open standards and open-source infrastructure tools for scalability and regional data integration.
11. **Reinforce regulatory frameworks, co-ordination, and collaboration to steer public sector data policy change.** The following priorities can be considered:
    a. Strengthen legal foundations for data interoperability in the public sector, open data, and personal data protection by updating their scope and provisions in line with global standards and principles or issuing legislation when needed.
    b. Advance regional regulatory interoperability by harmonizing data-related legislation across countries.
    c. Establish formal and informal co-ordination mechanisms for data governance in the public sector to ensure clarity in terms of data-related roles and to promote collaboration across different levels of government and with external communities such as representatives of vulnerable groups, minorities, human rights watchers, journalists, and GovTech and civic tech actors.
    d. Explore collaborations and foster informal communities of practice within the public sector to reinforce public sector data maturity with a bottom-up approach. When available, tap on schools of public administration or civil service institutes for this purpose.
    e. Promote engagement with external communities, to ensure the development of trustworthy, inclusive, and representative data-related strategies, projects, and initiatives.
12. **Clarify data roles and responsibilities across public bodies.** The following actions can be considered:
    a. Clarify the responsibilities of data-related roles across public bodies in charge of, among others, open data, access to information, data management, personal data protection, and data science to prevent duplication of efforts, enable better co-ordination and accountability and foster synergies.
    b. Establish tactical and cross-cutting roles, such as institutional data stewards, across ministries and public sector bodies, in particular those with data-intensive policy agendas. This, to facilitate co-ordination, promote connections between national and institutional data strategies, and foster a data culture within public sector organizations.
    c. Foster capacity building and knowledge-sharing across borders to advance common approaches and capacities on personal data protection, open data, artificial intelligence, data governance, and digital security. Temporary public officials' placements or loans across countries and join capacity building exercises in the context of regional digital government fora and multi-lateral collaboration could help in this regard.
13. **Improve whole-of-government data leadership and strategic approach.** The following actions can be considered:
    a. Improve co-ordination among bodies (e.g. digital government bodies, line ministries) responsible for personal data protection, open data, access to information, data security and interoperability by further promoting the creation of co-ordination bodies such as data governance boards.
    b. Provide a stronger political back-up to help advance strategic ambitions beyond the technical aspects of data-driven public sectors. In some LAC countries, this would imply connecting with broader efforts to strengthen the governance and leadership for digital government should the data leadership be attributed as a task or mission of the digital government leadership body or role.

c. Work towards the development of integrated national data strategies at the central/federal government level to provide more coherence, policy steering, foster synergies and reduce duplication of efforts, and to bring together existing data-related strategies under one single policy umbrella.

d. Initiate discussions at the political level towards a common data strategy at the regional level. This could help to englobe available data-related efforts in different sectors, advance data-driven approaches to improve cross-border service design and delivery, and secure the use and scalability of data governance tools such as digital identity.

14. **National data strategies and open government data.** The following actions can be considered:

a. Work towards the development of integrated national data strategies at the central/federal government level to provide more coherence, policy steering, foster synergies and reduce duplication of efforts, and to bring together existing data-related strategies under one single policy umbrella. These data strategies should connect with other strategies such as those on AI in order to ensure the cross-pollination of data governance and AI governance efforts.

b. Initiate discussions at the political level towards a common data strategy at the regional level. This could help to integrate available data-related efforts in different sectors, advance data-driven approaches to improve cross-border service design and delivery, and secure the use and scalability of data governance tools such as digital identity.

c. Develop strategies for open data at the national level that provide clear timeframes, responsibilities, actions and indicators, framed in the context of broader digital, data and AI strategies if needed.

d. Keep investing efforts to clarify roles and strengthen legal frameworks for open data e.g. by including specific open data provisions and definitions; and ensure alignment with broader digital transformation and AI strategies.

e. Engage external communities such as representatives of vulnerable groups, minorities, human rights watchers, journalists, and GovTech and civic tech actors to identify needs on demand and promote data re-use.

f. Ensure that open government data availability respond to emerging policy challenges in the region, including gender violence, feminicides, violence against LGBTQ+ communities and other vulnerable groups.

g. Further promote the adoption and implementation of international open data standards on public contracting, beneficial ownership, and public infrastructure in line with initiatives such as the Inter-American Programme on Open Data to Prevent and Fight Corruption (PIDA).

h. Further integrate open data initiatives with the achievement of the goals of digital government agendas. This means implementing actions to use open data for the co-creation of services citizens' and businesses' can use in their day-to-day lives, including in collaboration with data holders from the private sector and through partnerships with these actors.

i. Encourage open data at the local level while acknowledging the need to also advance progress in related aspects such as connectivity, local digital and data maturity, and the inclusion of rural communities.

15. **Establish the conditions for trustworthy governance and use of data in the public sector.** The following actions can be considered:

a. Establish clear responsibilities and roles for personal data protection across public sector organisations and at the level of responsible bodies (e.g. data protection authorities, Ombudsman) and increase digital and data literacy in this area within public bodies and across society.

b. Develop and provide citizens with access to tools such as digital identity, digital wallets, citizens' folders, e-signature, and authentication mechanisms.

c. Invest further efforts on data ethics to ensure the responsible generation, management, sharing and use of inclusive and representative data, including in the context of AI systems.

d. Advance digital security efforts to enhance the protection of government activities and of the data these generate and collect, including personal data.

Improving public service design and delivery

Defining integrated strategies for public service design and delivery

Strategic approach to and co-ordination for service design and delivery

The public services agenda (efforts conducive to improve access, responsiveness, proactiveness and human-centricity of government services) is gaining increased political momentum and support in LAC following the COVID-19 pandemic. Despite progress in the digitalisation of public service delivery through different channels and in user adoption, LAC governments should develop a forward-looking strategic approach that supports whole-of-government and omni-channel public service transformation to address remaining challenges. These include a limited availability of adequate policy frameworks and limited mandates and responsibilities related to the services agenda. Co-ordination mechanisms to support a coherent and integrated approach to designing and delivering services around users and their needs both at central and local levels are not the norm, as opposed to a silo-based and analogue-oriented digitisation.

Channels strategy

Most LAC governments have adopted multi-channel service delivery strategies (intended as services available through different channels yet offering a different user experience) - in contrast to a few that offer government services under an omni-channel approach (that focuses on providing the same quality of seamless user journeys across multiple channels). The predominant multi-channel approach in LAC is a missed opportunity to increase convenience and responsiveness for users to complete public services from an end-to-end perspective. This is particularly sensitive as delivering equal service quality across all channels is essential for an inclusive digital transformation of the public sector in the region considering existing social and economic inequality and exclusion across territories. Digital means have become a core delivery channel, but there are still limitations to offer a fully end-to-end and complete experience to users through existing platforms despite the rapid increase in the number of analogue processes being available through digital means.

User-centred service design

Involving and understanding users and their needs

The ultimate goal of public service delivery is to solve users' end-problems. However, LAC governments are still largely oriented towards designing and delivering public services driven by public sector bureaucracy and regulatory requirements (government-centric approach), constraining the public sector's ability to understand and meet user needs. The existing dominant legalistic culture, also applied to public service transformation, has caused limited advancements in digital government maturity in the past decades. The legalistic approach to service design and delivery is reflected in the limited understanding and capacities for service design and user research, and has acted as barrier to fully embrace a user-driven approach for the digital transformation of public services in LAC. As a consequence, LAC governments often follow a top-down approach (interpretation rather than understanding of user needs) and an inward-looking mindset (oriented to bureaucracy rather than users) when transforming public services.

Measuring service performance and user satisfaction

Delivering responsive and convenient public services to users requires continuous improvement and a systematic approach to capture service performance and user opinions and satisfaction through feedback loops. LAC countries do not have a consistent and comprehensive approach to collect, analyse and use public service performance data, relying largely on basic indicators that restrict public sector capacity to transform services informed by their delivery performance. Efforts to measure and apply user satisfaction into service improvement remain limited, mostly focused on collecting data that do not inform service improvement in a consistent way and are often disconnected from the broader service delivery policy.

Setting enabling conditions for digitalisation of government services

Guidelines, standards, and capacities

A whole-of-government approach to public service design and delivery includes developing common and actionable mechanisms to assist service teams when digitally transforming a service. Due to the dominant legal culture, the majority of existing standards and supporting means are framed within existing regulatory frameworks in the region. While relevant, they do not provide actionable guidance for the effective design and delivery of public services. Advancing the development of guidelines for user research and service design would be particularly relevant to help mitigate the existing legal-oriented and limited human-centric mindset driving the public service agenda in LAC.

Regarding specific capacities to digitally transform public services, most LAC countries are investing in ensuring in-house capability to design and operate services, as well as to outsource with traditional external suppliers. To a lesser extent, governments in the region are building on existing development capabilities from other public sector institutions (e.g., reusing their solutions). Leveraging the expertise of start-ups, entrepreneurs, or innovators through GovTech partnerships remain limited across the region, reducing access to new and more innovative suppliers or partners to contribute to the digitalisation of government services.

Common digital tools and enablers

A whole-of-government approach to service design and delivery builds on the premise that public sector institutions can have access to common digital tools and enablers that facilitate effective collaboration and integration in service delivery. While LAC countries are advancing the development of digital public infrastructure (DPI) such as cloud, data interoperability, digital payments, digital notification, or digital identity, there is an untapped opportunity to advance regional discussions on digital public goods (DPGs) that require further regional co-operation and sharing of practices. There is a limited development of open-source solutions in LAC, with the missed opportunity to advance towards common tools that may respond to similar legal and cultural frameworks, such as digital notification or citizen folder solutions.

Proposals for action

In light of the key assessments exposed above, which draw on the main findings and analysis included in Chapter 4 of this review, LAC governments could consider implementing the following policy recommendations:

16. **Anchor the design and delivery of government services in national public priorities and policies.** The following priorities can be considered:
    a. Embed public service transformation as a core policy goal in government priorities, including the development of dedicated policy frameworks or strategies that define roadmaps, targets, and actions for improved responsiveness and user-centricity of digitally enabled public services.
    b. Define specific mandate and responsibilities to lead a public service design and delivery agenda, integrating responsibilities for user research, user-centric design and administrative simplification with the development of core building blocks for digitalisation of government services.
    c. Empower digital government authorities to play a central role in public services agendas, securing the mandate, capacities, and fostering the evolvement of the needed mindset to further develop service design within national digital government strategies.
    d. Anchor the digitalisation of local government services within central/federal digital government strategies and policy frameworks to secure coherence and alignment for service design and delivery.
    e. Foster the development and adoption of an omni-channel service delivery approach securing sound channel strategies, co-ordination and the establishment of enabling conditions from funding to effective data sharing within the public sector.
    f. Increase the online availability of fully transactional government services by securing that efforts are devoted to rethink and simplify government processes and services, making them more agile and efficient through the use of digital technologies and data, avoiding replicating analogue and paper-based processes online.
    g. Consolidate ongoing efforts to develop whole-of-government service catalogues across different channels, including relevant information to support service redesign or streamlining.
17. **Develop culture and capacities for a user-centric approach in the design and delivery of government services.** The following priorities can be considered:
    a. Develop service design capacities within digital government leading agencies, including standards and guidelines on user research to equip public sector institutions to implement user-driven digital transformation of public services. Strengthening service design capacities is particularly relevant in the current context of increased citizens expectations with the public sector as well as increased political and financial support to digitalisation of public services in the region.
    b. Secure inclusive design and delivery of public services in LAC, in particular targeting active engagement with key groups such as migrants, elderly, and students in the context of regional migration and population ageing.
    c. Promote horizontal collaboration within the public sector, for example through the development of communities of practice and peer networks, as well as with key external stakeholders to better engage different groups in service design as well as to share best practices and tackle common challenges for embedding user research into digital transformation initiatives.
    d. Encourage regional sharing of best practices and lessons on service design that, acknowledging the regional administrative, economic and societal context, help further advance adoption of service design practices for public service transformation.
    e. Develop capacities and allocate resources to consolidate public service performance data in LAC, including further integration with

service catalogues and registries to generate a whole-of-government overview of public services delivery.

f. Develop data analytics capacities in digital government and/or public service authorities to improve the collection, management, and use of performance data to improve service design and delivery.

g. Strengthen the development of common methodologies for user satisfaction that support a better understanding of the experience of users after accessing services.

h. Secure the alignment and integration of service performance and user satisfaction measurement with the public service transformation agenda to strengthen an evidence-based approach to improve service design and delivery building on the experience of users.

18. **Reinforce the enabling conditions for the digitalisation of government services.** The following actions can be considered:

a. Develop a consistent set of guidelines and standards, building on the existing regulatory frameworks for digital government and public services, to effectively equip service teams with a common and unified approach to digitalise public services centred on users.

b. Make available dedicated guidance for service design and user research that, coupled with strengthened resources and capacities, can effectively switch the mindset of civil servants and delivery teams towards a user-driven approach.

c. Broaden the scope of external suppliers and partners to design and deliver innovative and proactive public services, levering the experience and capacities of intra- and entrepreneurs, start-ups and public-private partnerships (PPPs) to complement regular suppliers and in-house capability.

d. Advance towards an integrated and coherent framework for common digital public infrastructure available to central, federal and local governments that promotes a coherent and interoperable approach in public service delivery.

e. Advance regional co-operation to develop and share digital public goods that can support cross-border service delivery in LAC, leveraging the experience of governments in the region with open-source tools.

f. Leverage international co-operation to advance the governance of digital public infrastructure for trusted and interoperable solutions agreed among like-minded countries.

Digital innovation and GovTech

Managing a portfolio of innovation

Only a slight majority of digital government leaders in LAC find that the public service in their country is innovative. OECD Observatory of Public Sector Innovation's evidence shows that LAC governments are taking bold steps to innovate, most strongly favouring *mission-oriented innovation* (or setting a clear outcome and overarching objective for achieving a specific mission) and also tending to embrace *adaptive innovation* (or testing and trying new approaches in order to respond to a changing operating environment). In contrast, governments' efforts are weaker in *enhancement-oriented innovation* (or upgrading practices, achieving efficiencies and better results, and building on existing structures) and the weakest in *anticipatory innovation (or* exploring and engaging with emergent issues that might shape future priorities and future commitments*)*. This hampers the ability of the public sector to take actions towards proactively anticipating public issues and finding innovative ways to address them.

Committing to innovate

LAC governments generally place a strong emphasis on innovation within their digital government strategies. Some have also developed digital innovation and artificial intelligence strategies specifically for the public sector. However, broad public sector innovation strategies have been less pronounced, although certain governments, particularly municipalities, are outstanding actors in government innovation. Nonetheless, the absence of strategies may pose challenges for LAC governments in adopting a systems approach to innovation and linking their overall innovation efforts to their digital strategy and digital innovation goals.

Seven LAC governments (41%) have adhered to the *OECD Declaration on Public Sector Innovation*, formally recognising the importance of innovation as a strategic capability of government to modernise state administrations and achieve policy goals, and actively implementing initiatives to operationalize its principles. However, the number of adhering countries in the region remains a minority. By becoming adherents to the Declaration, countries can indicate their commitment and alignment with internationally recognised principles and actions to embrace and enhance innovation.

Promoting innovation skills and capabilities

The findings from the OECD-CAF LAC Digital Government Agency Survey, based on the perceptions of digital government officials as to whether public servants in their countries have the core skills outlined in the *OECD skills model for public sector innovation*, suggest that the foundational enablers of innovative capacities and culture are not currently in place in the region. However, the relatively high scores for *curiosity* hint that public servants want to try new things and innovate, but that they do not always have the know-how and empowerment to move forward. More specifically, LAC governments have increasingly developed training and capacity building components to help strengthen some of their innovation skills, especially when it comes to *data literacy*, *user-centricity*, and *iteration*. Other skills like *storytelling* appear to be less of a focus, according to the perceptions of digital government officials.

Promoting digital innovation and the use of emerging technologies

LAC governments are exploring the use mostly of artificial intelligence in the public sector as documented extensively in previous reports (OECD/CAF, 2022[2]), while showing some interest for other innovative and emerging technologies, particularly big data analytics, internet of things, and blockchain. Only a few governments reported that they have strategies around other forms of emerging technology (not AI) and there is low level of evidence of actual efforts in implementing them.

Unlocking the potential of GovTech

Better collaboration with start-ups and exploring public-private partnerships have been identified as particular priorities and challenges in LAC to promote better uptake of emerging technologies and greater agility and innovation in government. The region has already been taking bold steps in promoting awareness and interest in GovTech startups, showing the most significant expansion at the sub-national level in cities such as Córdoba, Argentina, Sao Paulo, Brazil, or Bogotá, Colombia. Many GovTech solutions leverage government data to develop services based on artificial intelligence solutions.

At the national level there has been less prevalence, limiting opportunities for a systemic approach to GovTech and potentially hindering the ability of start-ups to obtain funding and scale up. After evaluating several key GovTech enablers, including start-up investment, data infrastructures, innovation spaces, and public procurement, LAC governments exhibit comparatively slower progress at the public policy level. This pertains particularly to the limited development of strategies and the absence of dedicated entities responsible for coordinating GovTech efforts.

Proposals for action

In light of the key assessments exposed above, which draw on the main findings and analysis included in Chapter 5 of this review, LAC governments could consider implementing the following policy recommendations:

19. **Reinforce capacities and commitment for digital innovation in the public sector.** The following priorities can be considered**:**
    a. Develop a more consistent approach towards the governance of public sector innovation, including adopting dedicated overarching public sector innovation strategies and setting up institutional structures to steer innovation in government.
    b. Adopt a portfolio approach - multiple projects and investments in government innovation - that allows governments to understand, foster and manage different facets of innovation, as well as spreading the risk and mitigating the chances of loss.
    c. Promote use of the Portfolio Exploration Tool (PET) among digital government and innovation agencies to facilitate a customized evaluation of each organization's context, enable the mapping of their innovation portfolio on a project-by-project basis, identify any existing gaps, assess the alignment of their efforts with core strengths, and enhance their capacity to adopt a portfolio approach to innovation.
    d. Promote an environment and capabilities for innovation by establishing appropriate organisational structures, mechanisms, and incentives (including financing), where public servants are empowered to engage with new ideas, technologies, and ways of working.
    e. Connect different actors (public, private, not-for-profit, citizens) in ways that allow the public sector to partner, collaborate, and co-create new approaches; as well as to create partnerships to increase the public sector's ability to innovate.

	f. Systematically share learning arising from innovation activity (whether success or failure).
	g. Ensure a foundation of strong innovation skills among public servants based on the OECD skills model for public sector innovation, where all officials have at least some level of awareness of the six areas in order to support increased levels of innovation in the public sector.
	h. Maintain awareness of new technologies and how they may be used by or impact the public sector, while adopting a risk-based approach that involves carefully evaluating the potential risks and benefits and implementing appropriate measures to mitigate them.
20.	**Unlock the potential of the GovTech ecosystem.** The following priorities can be considered:
	a. Strengthen the governance of GovTech by developing dedicated strategies and responsibilities to steer the agenda, ensuring close alignment with digital government institutions and strategies.
	b. Develop dedicated GovTech challenge funds and investments mechanisms to promote digital public sector innovation and economic entrepreneurship in this space.
	c. Review public procurement frameworks to better understand how perceived barriers to GovTech are hard-coded into the rules or if there is room for clarification and alternative interpretations.

References

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1 Governing digital government

This chapter explores the governance of digital government in Latin America and the Caribbean (LAC) by employing a comparative approach drawing upon the standards and recommendations set forth by the OECD. It reviews the contextual factors that shape digital government strategies in the region, examines how countries are driving and co-ordinating the digital transformation of their governments, and identifies strategic opportunities for LAC countries to inform their digital government strategies and future developments at national and regional levels.

Introduction

Correctly governing the development and implementation of digital government policies is a fundamental step to achieve a mature, coherent, and trustworthy digital transformation of the public sector. Since the adoption by the Council of the *Recommendation on Digital Government Strategies* (OECD, 2014[1]), the OECD has identified digital government maturity as a fine interplay between leadership, mandate, vision, and integrated decisions and activities. Governance, understood as "the formal and informal arrangements that determine how public decisions are made and how public actions are carried out" (OECD, 2005[2]), is thus at the core of this process. Therefore, the study of the governance of digital government across Latin American and Caribbean countries is key for developing tailored policy recommendations for the inclusive and efficient adoption of digital technologies in the design and delivery of public policies and services.

This first chapter examines the governance of digital government in Latin America and the Caribbean (LAC). In doing so, it seeks to achieve three objectives:

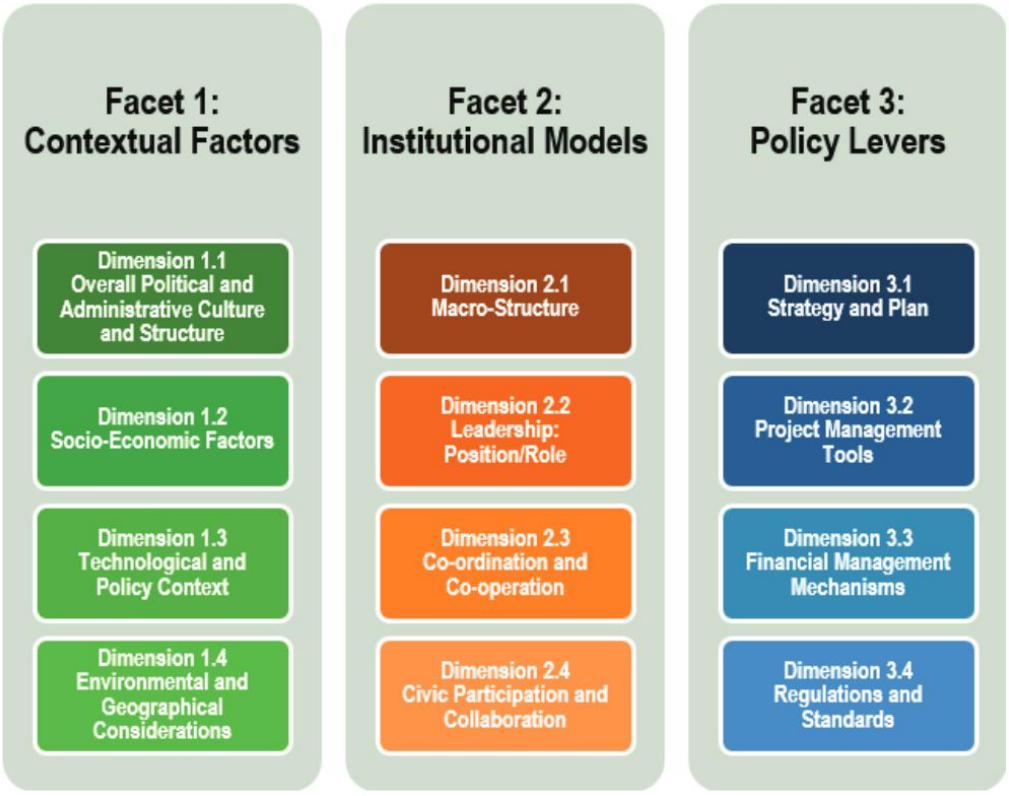
- Recognise key contextual factors that shape the strategic approaches to digital government in the region.
- Understand how countries are leading, co-ordinating and steering the digital transformation of their governments.
- Identify the strategic opportunities that LAC countries can adopt to inform and guide their digital government strategies, as well as for defining a roadmap for future developments at national and regional level.

In doing so, this chapter's analysis is informed by the conceptual framework of the *E-Leaders Handbook on the Governance of Digital Government* (OECD, 2021[3]). The Handbook's framework (see Figure 1.1) seeks to support governments in strengthening the governance of their digital government policies based on the insights, knowledge and best practices of OECD member and non-member countries. The following three critical governance facets developed in the framework are applied to the LAC context in the next sections:

- The *Contextual Factors* facet defines political, administrative, socio-economic, technological, policy and geographical characteristics to be considered when designing policies, strategies, and institutional approaches. This section investigates key regional factors that influence the progress, maturity, and priorities of digital government policies across the region. It concentrates particularly in two main factors. First, the political and administrative features acting as macro constitutive elements of governance in the region, such as the degree of regional autonomy, power structures, degree of participation, levels of trust, and policy continuity in the region. And second, the socio-economic features framing the development of digital governments initiatives and policies, such as digital skills, use of the internet, digital infrastructure, and digitalisation agendas.
- The *Institutional Models* facet includes different institutional set-ups, approaches, arrangements and mechanisms within the public sector and digital government ecosystem. This chapter will concentrate particularly in assessing the configuration, mandate, and functions of the institutions and co-ordination mechanisms overseeing digital government strategies. By analysing these aspects across different countries, it seeks to provide insights about the levels of institutional maturity in the region. This analysis will help understand the capacity of these institutions to effectively influence and direct the design and implementation of digital government policies in a sustainable manner.
- The *Policy Levers* facet describes different policy instruments - such as the overarching strategy, standards and regulations, as well as funding approaches, public investment and financial management mechanisms - that governments can use to ensure a sound and coherent digital transformation of the public sector. This chapter will particularly focus on analysing the national

and regional digital government strategies, as well as the regulations and standards across countries. Chapter 2 of the review will focus on public investment and financial management tools.

Figure 1.1. The OECD Framework on the Governance of Digital Government



Source: OECD (2021[3]), *The E-Leaders Handbook on the Governance of Digital Government*, https://doi.org/10.1787/ac7f2531-en.

Regional context

Digital government policies, strategies and services are context dependent. They become inclusive and effective when they respond to specific needs, are built on solid public institutions, and are tailored to the conditions shaping their societies and economies. Governing the digital transformation of governments requires a profound understanding of such macro factors that frame the conditions, possibilities, and objectives under which such policies operate. The first section of this chapter evaluates a set of relevant contextual factors to understand the political, administrative, social, and economic framework under which the governance of digital government policies operates in the LAC region.

Political and administrative context

Setting the ground for a comprehensive understanding of governance processes in LAC requires exploring key political and administrative factors in the region determining how power structures operate, the degree of participation of non-public actors in the democratic debate, and the trust governments have from their citizens to deliver their mission. The indicators presented in this section allow to better understand how the power and political structures influence and shape digital government policies.

In the first place, the degree of autonomy of subnational governments provides a general indication of how political and administrative power is organised across the public sector and has important implications on the roles and responsibilities of local government in service delivery. Table 1.1 shows two main characteristics in LAC: first, a majority of countries (65%) have centralized systems (no autonomy) while only 35% provide different degrees of autonomy to subnational entities. Nonetheless, the six countries under the Autonomy category represent 80% of the total population of the sample of countries, which implies that subnational governments play a crucial role in public decision-making processes with an on the majority of citizens in the region. Second, when exploring the form of democratic governance, all Caribbean English-speaking countries have parliamentary systems, while all Spanish and Portuguese-speaking countries have presidential systems. These characteristics are significant elements shaping the design and execution of policies and services within countries. From a regional perspective, the governance of digital government in LAC occurs mainly through presidential and centralised systems, meaning that central governments play a greater role in setting and co-ordinating digital government policies and services, but their efficacy depends on a harmonious relation between the executive and legislative branches. As for countries where subnational governments have a greater degree of autonomy, it is crucial to recognize the substantial variations that exist between municipalities, especially when comparing small rural municipalities to large, affluent municipalities, particularly cities. These disparities in resources, capacities, and capabilities will significantly impact the ability of local governments to provide efficient and effective services to their respective communities.

Table 1.1. Form of democratic governance and degree of subnational autonomy in LAC

	Presidential	Parliamentary
Autonomy	Argentina, Brazil, Colombia, Mexico, Venezuela	Trinidad and Tobago
No autonomy	Bolivia, Chile, Costa Rica, Dominican Republic, Ecuador, Panama, Peru, Paraguay, Uruguay	Barbados, Jamaica

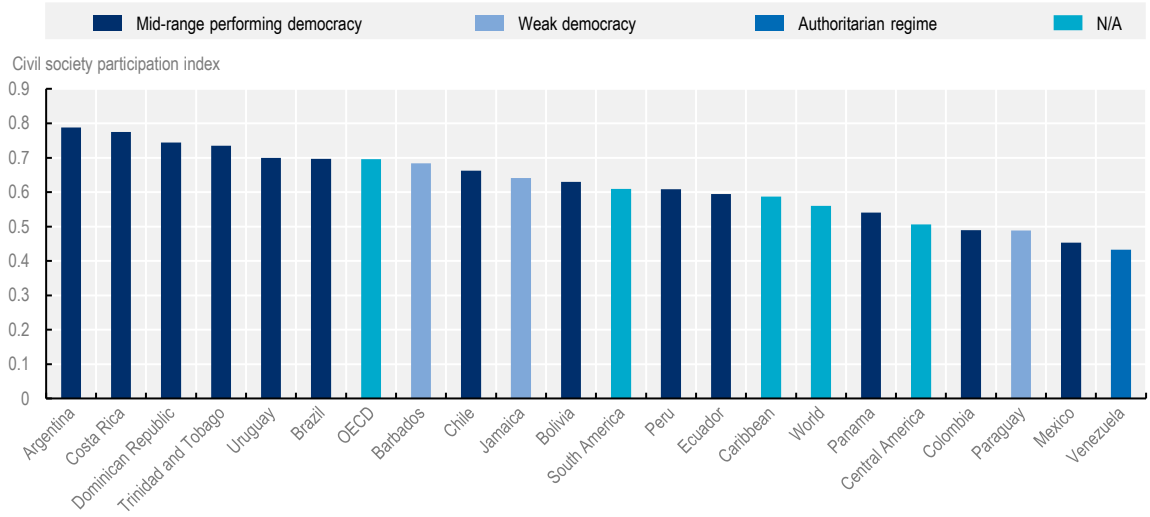
Note: "Autonomy" refers to countries where state/provinces have authority over taxing, spending, or legislating.
Source: Based on data from IADB (2021[4]), *The Database of Political Institutions 2020 (DPI2020)*, https://data.iadb.org/DataCatalog/Dataset#DataCatalogID=11319/11048 (accessed on 7 January 2023).

A second element considered in exploring the political and administrative context in LAC is the level of adherence to democratic principles and processes in the region. The OECD's approach to digital government embeds democratic values such as participation, inclusiveness, and openness as core elements of the governance process. When examining the "democratic performance" and "civil society participation" measurements elaborated by International IDEA, it can be observed that a majority of countries in LAC perform on the mid-range level of the Global State of Democracy Indices (GSoD) while also having an above-world-average civil society participation score (see Figure 1.2). However, the results are modest when compared to the OECD numbers, where most countries are "high performing democracies" and have an average measurement for civil society participation greater than 65% of the analysed LAC countries. From a regional perspective, these findings suggest the need of strengthening the enabling conditions to foster greater participation in the design of digital government policies and services. It is advisable for countries to place greater emphasis on creating mechanisms that facilitate and encourage participation from civil society in shaping digital government efforts.

A third key element to consider when examining the contextual factors impacting digital government is the level of trust in government. Trust shapes governance processes as it indicates how people perceive the quality of, and how they associate with, government institutions in democratic countries (OECD, 2022[5]). The recent *OECD Trust Survey* found that people in two measured LAC countries (Colombia and Mexico) had consistent below-OECD average trust measures across different dimensions. For instance, in trusting their government to use their personal data for legitimate purposes, in expecting that their application for

a government benefit or service would be treated fairly, or in confidence in public agencies adopting innovative ideas. These findings match those of *Latinobarómetro*, another measurement instrument present across more LAC countries, which found that trust in LAC governments has deteriorated in the past ten years (Figure 1.3). These results underscore that governments in the region might need to develop more concrete actions to build trust from citizens while developing and implementing digital government initiatives, such as making it a strategic objective of digital government strategies.

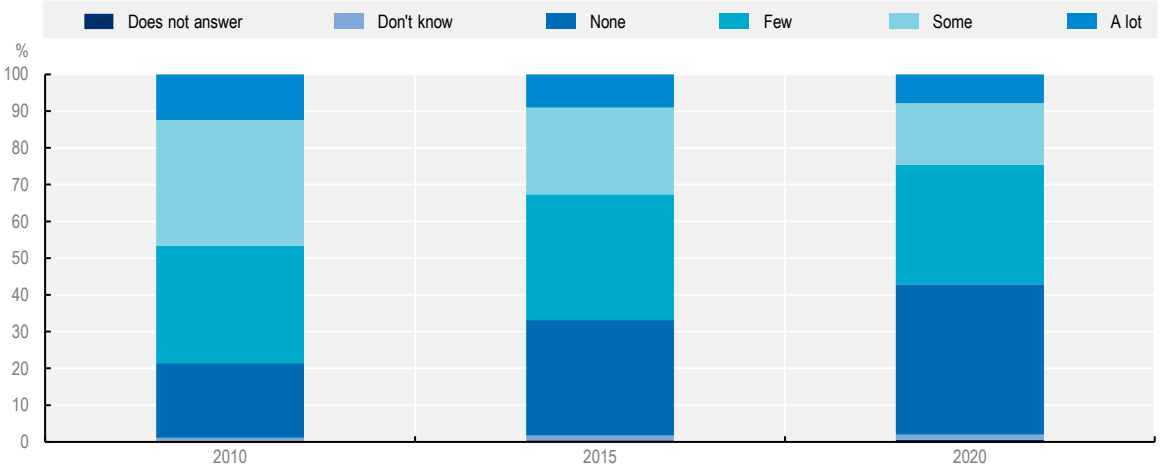
Figure 1.2. Democratic performance and civil society participation in LAC



Note: Refer to International IDEA's definitions on Democratic Performance[1] and Civil Society Participation.[2]
Source: Self-elaboration with data from International IDEA (2022[6]), *Data Set and Resources*, https://www.idea.int/gsod-indices/dataset-resources (accessed on 17 January 2023).

Figure 1.3. Trust in Government in selected LAC countries

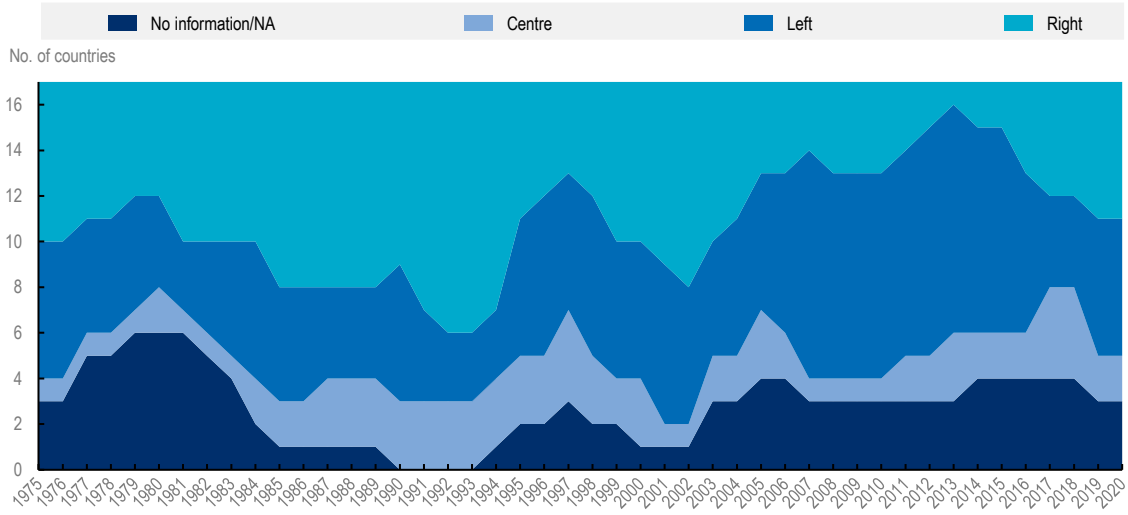
Survey question: Please look at this card and tell me, for each of the groups, institutions or people on the list, how much confidence do you have in them? – "Government".



Note: Figure includes data for Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Mexico, Panama, Paraguay, Peru, Uruguay and Venezuela. Does not include Barbados, Jamaica, and Trinidad and Tobago.
Source: Based on data from Corporación Latinobarómetro (2021[7]), *Latinobarometro*, https://www.latinobarometro.org/lat.jsp (accessed on 22 January 2023).

A fourth element is the political stability, particularly relevant for continuity of policies at the national level and the continued co-operation across borders. A government experiencing political continuity and stability is in a better position to develop and implement digital government policies with a long-term sustainable perspective (OECD, 2021[3]). Although measuring this concept across countries in all its amplitude can be challenging, a proxy indicator is the governing party orientations with respect to economic policy (see Figure 1.4). From a regional perspective, it is particularly important to note the cycles experienced by LAC countries across the previous five decades (i.e. a majority of right leaning countries peaking in the early 1990's and majority of left leaning countries doing so by the mid-2010's).[3] Moments of greater coincidence in the economic policy orientation among governing parties can act as windows of opportunity for the development of common regional programmes and the strengthening of digital co-operation ties between governments. As of 2020 (last data available), the regional situation was mixed, with 6 countries classified as left, 6 as right, 2 as centre, and 3 not having information.

Figure 1.4. Governing party orientation with respect to economic policy in LAC



Note: Party orientation with respect to economic policy is based on the description given by the party itself. "Right" corresponds to parties that are defined as conservative, Christian democratic, or right-wing. "Left" to parties that are defined as communist, socialist, social democratic, or left-wing. "Centre" to parties that are defined as centrist, when a party's position can best be described as centrist, or, if not described as centrist, when competing factions "average out" to a centrist position. "No info / NA" applies to parties where their description does not fit the previous categories, there is no information, or when there is no executive (IADB, 2021[4]).
Source: Based on data from IADB (2021[4]), *The Database of Political Institutions 2020 (DPI2020)*, https://data.iadb.org/DataCatalog/Dataset#DataCatalogID=11319/11048 (accessed on 7 January 2023).

Finally, LAC countries have made significative progress in regional integration, a relevant element for regional digital co-operation. The region has various common institutions to strengthen international cross-border relations. These encompass political integration institutions;[4] regional economic integration institutions;[5] development banks;[6] and international organisations and economic blocs[7] also playing a key role in regional integration and policy coherence. As it will be seen in the following sections, some of these institutions are also playing an important role in setting broader digital agendas, as well as more specific digital government strategic instruments across the region. For instance, regional digital government networks have been greatly dynamized by the regional and international organisations, such as in the case of the Network of e-Government of Latin America and the Caribbean (GEALC Network) supported by the Organisation of American States (OAS) and the Inter-American Development Bank (IDB) (see Box 1.1) or the OECD's Network on Open and Innovative Government in Latin America and the Caribbean (NOIG LAC)[8]. Moving forward, LAC countries have significant potential to leverage these international institutional

capabilities and networks to foster digital government co-operation. More specifically, this involves enhancing the strategic alignment of national digital government strategies and regional digital government strategic instruments, both among themselves and with key digital priorities such as data sharing, services, privacy and security, and cross-border digital identity.

Box 1.1. The GEALC Network

Since 2003, the Network of e-Government of Latin America and the Caribbean (GEALC Network) has brought together the authorities of digital government agencies in the LAC region. Its composition makes it an important instrument to promote horizontal co-operation, the development of participatory e-government policies, the training of public officials, and the exchange of solutions and experts among countries of the region. The Network also enables member countries to share key knowledge regarding the construction of national digital government strategies. The general objective of the GEALC Network is to support digital government policies that place citizens at the centre, with an emphasis on the most vulnerable populations. The Network's technical secretariat is headed by the Organisation of American States (OAS) and is supported by the Inter-American Development Bank (IDB).

Source: Red GEALC (n.d.[8]), *Homepage*, www.redgealc.org.

Socio-economic context

Digital government policies are highly influenced by the social and economic factors that shape the scope of digital progress in the region. This section presents an overview of the digital progress observed in LAC countries that inform digital government policymaking. To achieve this, the chapter explores critical variables such as the access and use of internet, human capital, telecommunications infrastructure, and the development of digital agendas.

At the broader spectrum of digital development, the positive correlation between per capita income level and access to and use of the internet in LAC (see Figure 1.5) suggests their close link to economic development. Countries in the region show mixed progress regarding access to and use of internet, with *use* being less unequal across the region than *access*. Out of the 5 Latin American countries whose internet access is measured by the OECD, Brazil, Colombia, Costa Rica, and Mexico remain among the lowest performers (ranging from 60.5% to 81.5% of all households having access to the internet in 2021), while Chile is an outlier with 87.5% in 2017 (OECD, 2023[9]).

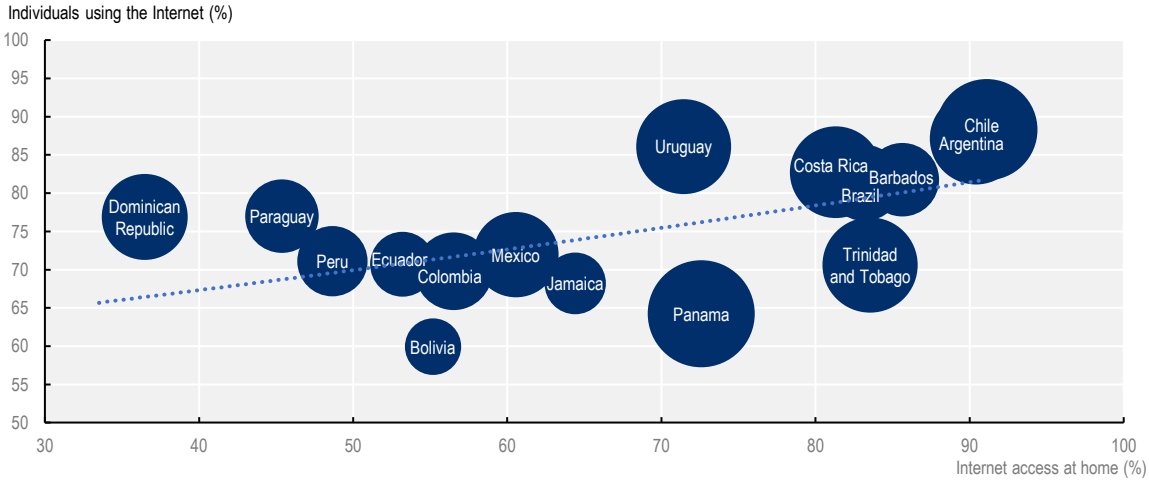
Latin American countries underperform when measuring fixed (OECD, 2023[10]) and mobile (OECD, 2023[11]) broadband subscriptions. Looking at the whole region, the proportion of households with Internet access at home (via a fixed or mobile network) remains around the worldwide average of 66% in 2021 (ITU, 2022[12]). However, there is a substantial dispersion in this indicator among countries, with lowest performers ranging from 35-45% and highest performers above 90% (see Figure 1.5). This situation contrasts with the indicators measuring the number of individuals making use of internet, where LAC countries have done greater progress. Most of regional countries are above the world average of 66% in 2022 (ITU, 2022[12]) (see Figure 1.5) and almost doubling their usage metrics since 2010, but still lagging behind the OECD average of 84%.

While addressing the digital divide remains a crucial challenge, the LAC region has advanced in achieving a more equitable distribution of Internet access and use compared to other services such as secondary education, pensions, and income, although it still lags behind the more even distribution seen in sewerage and electricity (OECD et al., 2020[13]). Initiatives to tackle this dimension of the digital divide range from community networks and improved ICT services and infrastructure (i.e. enhanced competition, effective

broadband expansion strategies, efficient spectrum allocation and infrastructure-sharing models) on the supply side, to direct Internet-only subsidies on the demand side (OECD et al., 2020, p. 126[13]).

Based on these numbers, the *OECD Latin American Economic Outlook 2020* concluded that a series of policy measures were necessary to improve the digital transformation of LAC societies and economies, including: regional integration and co-ordination of digital development efforts; close the heterogeneity in digital transformation across regions and within countries to boost productivity, competitiveness and inclusion; and mitigate the digital divide by providing the infrastructure needed to expand access, supporting digital skills, and enabling access for traditionally excluded groups (OECD et al., 2020[13]). As it is developed further below, aligning the regional digital government agenda with the digital development and co-operation agendas can better leverage resources and create greater synergies among countries.

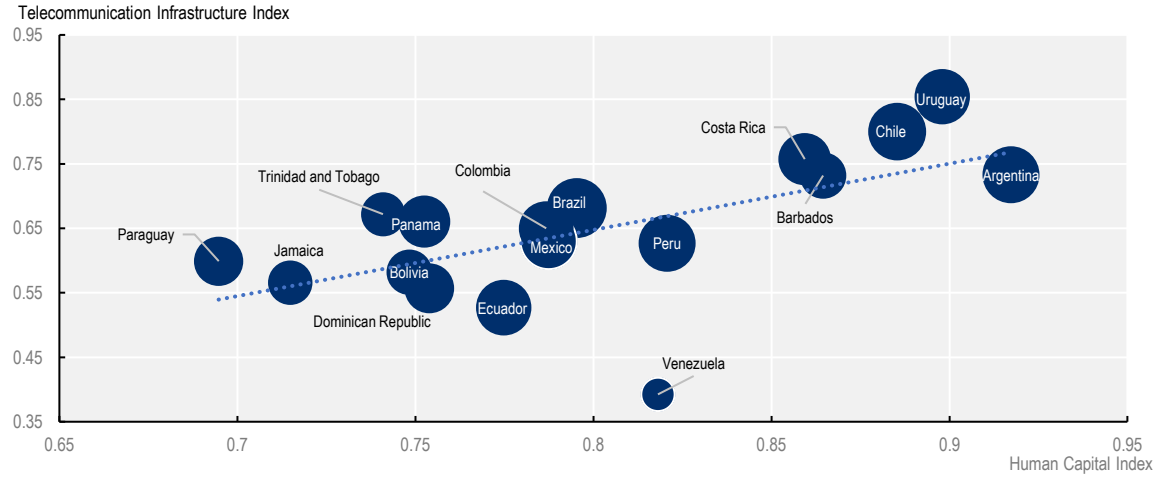
Figure 1.5. Internet access and use vs income level in LAC



Source: Based on data from ITU (2022[12]), *Households with Internet Access at Home*, https://datahub.itu.int/data/?i=12047 (accessed on 8 January 2023) and World Bank (2022[14]), *World Development Indicators*, https://databank.worldbank.org/source/world-development-indicators/preview/on (accessed on 21 January 2023).

Data from the United Nations (UN) E-Government Survey offers another perspective and dimension into digital development across countries. The E-Government Development Index (EGDI) is based on three core indicators: the Telecommunications Infrastructure Index (TII), the Human Capital Index (HCI), and the Online Services Index (OSI). Scores in the UN E-Government survey are also normalised and standardised, meaning that a score of 0.5 falls in the middle of the dispersion of country values across that index.[9] Figure 1.6 presents LAC 2022 measurements for the three indexes. The comparison between the TII and the HCI indicates that countries have achieved greater progress in terms of human capital,[10] but are still lagging on infrastructure development. As it is the case with internet access and use, countries with higher per capita income rates tend to perform better in both indices, although this is not the case for Panama and Trinidad and Tobago, which are still at lower levels on the HCI and TII versus their peers despite having relatively high-income levels.

Figure 1.6. Human capital, telecoms infrastructure, and online services in LAC (2022)



Note: Spheres size refer to the OSI.
Source: Based on data from UN DESA (2022[15]), *E-Government Survey 2022: The Future of Digital Government*, https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2022.

The OSI offers valuable insights related to digital government. It encompasses five dimensions: the institutional framework, services provision, content provision, technology, and e-participation. Its relationship with key digital enablers like human capital and telecommunications infrastructure enables the identification of three primary country clusters:

- A first cluster (including Argentina, Barbados, Chile, Costa Rica, and Uruguay) with higher progress in telecommunications and human capital, although uneven online services progress between countries in the south of the continent and those in the Caribbean region.
- A second cluster including Mexico, Colombia, Ecuador, Peru, and Brazil with on average stronger online services capabilities but with lower telecommunications and human capital development.
- And a third cluster including countries performing lower in the three indexes, such as Bolivia, Dominican Republic, Jamaica, Panama, Paraguay, Trinidad and Tobago, and Venezuela.

Such a clustering approach facilitates the development of targeted actions for enhanced international co-operation, capacity transfer, and the establishment of shared goals. Countries that share similar situations in terms of human capital and telecommunications infrastructure have more propitious conditions to work together, either because they can share common objectives (work together to make progress on one or several indicators) or because they can collaborate with each other to equalise capacities (such as levelling the delivery of digital public services). Support to the third cluster can be mostly directed towards increasing the transfer of knowledge and capacities from the most advanced countries to the least, in particular from the second cluster which shares common features in terms of digital connectivity and human capital and has developed higher levels of experience and capabilities in terms of online government services.

Finally, the development of broader digital transformation agendas, both at the national and regional levels, is reconfiguring strategic priorities and policy approaches to improve the scope and quality of digitalisation across societies, economies and public sectors. Most recent digital government strategies are being highly influenced by the development of these agendas, as most of them consider the use of digital technologies in the public sector as one of their various strategic pillars. At the national level, these agendas are generally co-ordinated by high-level leadership positions, such as centralised responsibility above the ministerial level (Chile and Peru), lead ministries (Brazil, Colombia, Costa Rica, Ecuador and Paraguay) or special agencies under the control of the Presidency of the Republic (Bolivia, Panama and Uruguay)

(OECD et al., 2020[13]). Among their strategic priorities, they generally include "issues related to infrastructure and access, e-government, digital skills and cybersecurity" (ECLAC, 2022, p. 79[16]).

On top of national digital agendas, the region has also experienced the development of regional digital agendas, such as the Pacific Alliance's Roadmap for the Regional Digital Market, the MERCOSUR Digital Agenda Action Plan, the Andean Community's Andean Digital Agenda, and the Economic Commission for Latin America and the Caribbean (ECLAC) e-LAC Digital Agenda 2024. The most common topics on these regional agendas include the deployment of networks, innovation and entrepreneurship, digitalization of SMEs, emerging technologies, and cross-border flows of trade and data (ECLAC, 2022[16]). The last section of this chapter offers a more detailed analysis of digital government objectives and action lines outlined in these regional agendas.

Institutional setup to drive the digital government agenda

The OECD Recommendation of the Council on Digital Government Strategies underlines the importance to "establish effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government", such as "identifying clear responsibilities to ensure overall co-ordination of the implementation of the digital government strategy" (OECD, 2014[1]). Following the Recommendation and the OECD E-Leaders Handbook on Governance of Digital Government, this section presents a review of the institutional models adopted by LAC countries to shape and drive their digital government agendas. Evidence is analysed under two main categories.

- First, the organisation-in-charge as the main responsible actor for leading the development of digital government policies and their implementation.
- Second, the high-level co-ordination bodies in charge of institutional co-ordination at the very top, bringing together ministers and highest-ranking administrative agencies to extensively collaborate and align on the design and implementation of digital government data strategies and plans. Such types of bodies can normally take the form of steering committees, working groups, and task forces (OECD, 2021, p. 67[3]).

Leading the digital government agenda

The success of digital government policies is highly dependent on clear and legitimate leadership. For this reason, the role of the *organisation-in-charge of digital government* is paramount to advance the degree of maturity of countries. There is no single institutional model which fits all the circumstances and therefore to be considered as the right one, but "it is most essential to have in place an organisation-in-charge of digital government with clearly defined roles, responsibilities, accountability mechanisms and strong relations with other public sector organisations" (OECD, 2021, p. 56[3]).

In fact, the OECD has documented different types of institutional set-ups, mostly varying between different types of institutions (e.g. a public sector agency, a unit, an office, a directorate, or a ministry) and different locations in the public sector structure, such as organisations under the presidency or the prime minister's office at the centre of government, under a co-ordinating ministry (e.g. finance, public administration), or through a line ministry (e.g. digitalisation, science, technology). The E-Leaders Handbook on Governance of Digital Government identifies three main approaches that countries normally adopt according to their own contextual factors (see Box 1.2). Overall, the key maturity factors of the organisation-in-charge lie in its degree of leadership, political influence, and organisational stability (OECD, 2021[3]).

Box 1.2. Institutional approaches to digital government across OECD countries

The digital transformation agency approach

Encompasses the creation of a public sector organisation that has the duty to supervise the digital transformation of the public administration and its services. It is aimed at fast gains for improving service quality but could face long-term organisational, economic, and cultural resistance due to its external nature.

The central co-ordination approach

The central co-ordination approach encompasses the creation of powerful government-wide management with a central co-ordinating leading public sector organisation to implement measures. It is aimed at extensive changes but may be less agile in starting pilot initiatives or testing new methods.

The decentralised co-ordination approach

The decentralised co-ordination approach encompasses a co-ordinating public sector organisation with fewer mandatory demands and unifying top officials. It is aimed at offering more freedom to smaller public sector organisations to innovate and experiment but risks misalignment and lack of cohesion across the public sector.

Source: OECD (2021[3]), *The E-Leaders Handbook on the Governance of Digital Government*, https://doi.org/10.1787/ac7f2531-en, p. 58.

Countries in LAC show significant progress in establishing and strengthening organisations-in-charge of digital government across the central or federal level (Table 1.2). The OECD was able to confirm the presence of such institutions across 16 of the 17 countries under review for this report. In a slight majority of countries, this role has strong institutional connections with the highest level of power in the executive branch, either through institutions directly dependent from the centre of government (CoG) (Argentina, Mexico, and Peru) or through agencies with a higher degree of administrative autonomy (Bolivia, Dominican Republic, Panama, and Uruguay), but whose governance is normally connected to the president's office.

For instance, in Bolivia the Agency for Electronic Government and Information and Communication Technologies (AGETIC) is an independent agency but remains under guardianship of the Ministry of the Presidency. In Panama, the National Authority for Government Innovation (AIG) depends on the National Council for Government Innovation, which includes among its members the President of the Republic, who also leads the Council. In Uruguay, the Agency for Electronic Government and the Information and Knowledge Society (AGESIC) is an executing unit with technical autonomy dependent on the Presidency of Uruguay. In the case of the Dominican Republic, the Government Office of Information and Communication Technologies (OGTIC) recently went from being under the CoG to becoming a decentralised unit of the Ministry of Public Administration (MAP).

In countries where the organisations-in-charge are directly at the CoG, they tend to have additional functions and mandates. In Argentina, digital government functions are spread across various Sub-secretaries of the Secretariat of Public Innovation of the Public Sector, which is also in charge of digital connectivity and telecommunications. In Mexico and Peru, the leading institutions are also in charge of the countries' broader digital agendas.

Table 1.2. Organisations-in-charge of digital government in LAC

Country	Name (English)	Institutional set-up	Level of the head of the institution
Bolivia	Agency for Electronic Government and Information and Communication Technologies (AGETIC)	Agency	D1 Manager
Dominican Republic	Government Office of Information and Communication Technologies (OGTIC)	Agency	D1 Manager
Panama	National Authority for Government Innovation (AIG)	Agency	D1 Manager
Uruguay	Agency for Electronic Government and the Information and Knowledge Society (AGESIC)	Agency	D1 Manager
Argentina	Secretariat of Technological Innovation of the Public Sector, Chief of the Cabinet of Ministers	Centre of Government	D2 Manager
Mexico	National Digital Strategy Co-ordination, Office of the Presidency of the Republic of Mexico	Centre of Government	D1 Manager
Peru	Secretariat of Government and Digital Transformation, Presidency of the Council of Ministers	Centre of Government	D2 Manager
Brazil	Secretary of Digital Government of the Ministry of Management and Innovation in Public Services	Co-ordinating Ministry	D1 Manager
Chile	Digital Government Division, Ministry General Secretariat of the Presidency	Co-ordinating Ministry	D3 Manager
Barbados	Ministry of Industry, Innovation, Science and Technology	Line Ministry	D1 Manager
Colombia	Digital Government Directorate, Vice Ministry of Digital Transformation, Ministry of Information and Communications Technologies	Line Ministry	D2 Manager
Costa Rica	Digital Governance Directorate, Ministry of Science, Innovation, Technology and Telecommunications	Line Ministry	D2 Manager
Ecuador	Undersecretary of Electronic Government and Civil Registry, Ministry of Telecommunications and Information Society	Line Ministry	D2 Manager
Jamaica	Information Communication Technology (ICT) Division, Ministry of Science, Energy & Technology	Line Ministry	D1 Manager
Paraguay	General Directorate of Electronic Government, Vice Ministry of Information and Communication Technologies (ICT), Ministry of Information and Communication Technologies	Line Ministry	D2 Manager
Trinidad and Tobago	Ministry of Digital Transformation	Line Ministry	D1 Manager

Note: The analysis does not include Venezuela. The level of the head of the institution is denoted by the classification and definition of occupations used by the OECD's Public Governance Directorate. D1 denotes the highest managerial level below the minister/ secretary of State (who are designated by the President/ Prime Minister) and appointed by the minister, or sometimes designated by the President/Prime Minister. D2 are just below D1 managers. D3 are just below D2 managers (OECD, 2019[17]).
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

In the rest of countries, the responsibility for steering the digital transformation of government is under line and co-ordinating ministries. Colombia, Ecuador, Paraguay, and Trinidad and Tobago have line ministries in charge of the digital agenda, with specialised institutions entirely devoted to digital government. This is the case of Colombia's Digital Government Directorate, Ecuador's Undersecretary of Electronic Government and Civil Registry, and Paraguay's General Directorate of Electronic Government. The Ministry of Digital Transformation in Trinidad and Tobago holds a comprehensive mandate encompassing digital government policies, as well as broader policies related to digital society and economy. In some countries, ministries in charge of science, technology, and innovation agendas are the ones responsible for digital government, such as Costa Rica's Digital Governance Directorate and Jamaica's ICT Division. Brazil and Chile are the only cases in the region where the responsibility for digital government is held by a co-ordinating ministry. For Brazil, this position corresponds to the Secretary of Digital Government of the newly stablished Ministry of Management and Innovation in Public Services, while in Chile to the Digital Government Division (DGD) of the Ministry General Secretariat of the Presidency (SEGPRES).

Table 1.3. Decision-making and advisory responsibilities of the organisations-in-charge of digital government in LAC

	Argentina	Barbados	Bolivia	Brazil	Chile	Colombia	Costa Rica	Dominican Republic	Ecuador	Jamaica	Mexico	Panama	Paraguay	Peru	Uruguay
	Main decision-making responsibilities														
i. Prioritisation of digital/ICT investment projects across the central/federal government	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓		✓
ii. Management of the value proposition process of digital/ICT projects across the central/federal government		✓	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓
iii. Approval of digital/ICT projects across the central/federal government	✓			✓	✓	✓		✓			✓	✓	✓	✓	
iv. Mandating external reviews of digital/ICT projects across the central/federal government		✓				✓		✓			✓	✓	✓	✓	
v. Provision of financial support for the development and implementation of digital/ICT projects				✓		✓						✓	✓	✓	✓
	Main advisory responsibilities														
vi. Developing the NDGS	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
vii. Ensuring horizontal co-ordination of public sector institutions at central/federal level involved in the implementation of the NDGS	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
viii. Supporting the development and implementation of institutional digital government strategies	✓	✓		✓		✓		✓		✓	✓	✓	✓	✓	✓
ix. Developing and overseeing adoption of common technical standards for the development of digital/ICT infrastructure and common enablers across the central/federal government	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
x. Advising public sector institutions at central/federal level in the implementation of digital/ICT projects	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
xi. Monitoring the development of digital/ICT projects across national and/or subnational levels of government	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	
xii. Co-ordinating with subnational governments the development of digital/ICT projects	✓			✓		✓		✓			✓	✓	✓	✓	

Note: Does not include Trinidad and Tobago and Venezuela.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

Another crucial aspect in analysing the organisations-in-charge of digital government lies in understanding how their mandates compare across key decision-making and advisory responsibilities (Table 1.3). Decision-making responsibilities "include the powers and duties to make important decisions with considerable accountability across the government" (OECD, 2021, p. 60[3]), allowing the organisation-in-charge to steer the implementation of digital government policies and projects in a coherent and consistent fashion. Advisory responsibilities support other government institutions in implementing digital government policies. Findings from the reviewed organisations-in-charge of digital government suggest that their mandates have a greater focus on advisory responsibilities, while decision-making responsibilities are less prominent across organisations. This suggests that in LAC, most central government institutions possess a higher degree of autonomy in making digital government decisions, rather than being under the purview of the leading digital government institution.

The most common decision-making responsibilities across organisations-in-charge of digital government include the (i) prioritisation of digital/ICT investment projects (73%), the (ii) management of the value proposition process of digital/ICT projects (73%), and the (iii) approval of digital/ICT projects (60%) across the central/federal government. However, only less than half of them have the capacity to (iv) mandate external reviews and (v) provide financial support for the development and implementation of digital/ICT projects across the central/federal government.

Regarding the advisory responsibilities, 90% of the analysed organisations are in charge of (vii) ensuring horizontal co-ordination of the central/federal public sector institutions involved in the implementation of the National Digital Government Strategy (NDGS), while 87% (ix) develop and oversee the adoption of common technical standards for the development of digital/ICT infrastructure and common enablers across the central/federal government and (x) advise public sector institutions at the central/federal level in the implementation of digital/ICT projects. To a lesser extent, 80% of the analysed organisations (vi) support the development of the NDGS and (xi) monitor the development of digital/ICT projects across national and/or subnational levels of government. Only 40% of the organisations-in-charge (xii) Co-ordinate with subnational governments the development of their digital/ICT strategies and projects. This is observed primarily in large and decentralised countries like Brazil,[11] Colombia, Mexico, and Argentina, as well as in a few smaller and centralised countries like the Dominican Republic and Paraguay.

A strong organisation-in-charge of digital government close to the centre of government will normally have a robust and contextually adapted set of responsibilities enabling it to effectively drive the digital government agenda according to the needs and conditions of the country. The set of responsibilities and functions listed in Table 1.3 are those considered by the OECD as critical to better equip these institutions for this role. It is important to note that this indicator is limited to assessing the entities' formal mandates. The organisations-in-charge of Brazil, Colombia, Dominican Republic, Mexico, Panama, and Paraguay stand as the ones with a larger scope of formal functions, while Costa Rica's, Ecuador's, and Jamaica's stand as the ones with the weakest scope.

Strategic direction and co-ordination of the digital government agenda

Driving and steering the digital government agenda across government also requires strengthening co-ordination between public sector institutions. Based on OECD best practices, the *OECD E-Leaders Handbook on the Governance of Digital Government* identifies the co-ordination and co-operation functions at high-level of government, but also at the organisational and technical levels, to assure the coherence and sustainability of the digital transformation of the public sector. High level co-ordination brings ministers and highest-ranking administrative officials to collaborate and align on the development and implementation of digital government strategies and plans. Organisational and technical co-operation addresses the systemic processes underlying the tactical and operational layers during the implementation stages (OECD, 2021[3]). This section explores the institutional design and responsibilities of such co-ordination bodies and mechanisms in LAC.

Compared to the maturity shown in establishing organisations-in-charge of the digital government agenda at the centre of government, LAC countries show less progress when it comes to the establishment of digital government co-ordination bodies (i.e., entities) or mechanisms (i.e. councils, committees). As presented in Table 1.4, more than half of the countries under review have such an institutional structure (71%, or 12 out of 17). Other countries in the region do not have such mechanism in place or it is currently not in operation. For example, in the case of Jamaica, although the government established an ICT Council,[12] it is currently not functional.

The co-ordination bodies/mechanisms analysed in the context of this report are classified according to the institution that chairs them, their membership (particularly if they include subnational government institutions), and the scope of their mandate. Out of the 12 analysed structures, 7 are co-ordinated by the organisation-in-charge of digital government. In five countries it is another institution heading these bodies. In Colombia, the Council for Institutional Management and Performance is co-ordinated by the Administrative Department of the Civil Service; in the Dominican Republic, the Digital Transformation Cabinet is chaired by the President of the Republic, similarly to Panama's National Council for Government Innovation; in Argentina's Federal Council of Public Function (CoFeFuP) is chaired by the Secretary of Management and Public Employment of the Nation; and in Uruguay the Honorary Advisory Council for the Information Society does not have a formal chair.

This characteristic is also related to the scope of their mandates: in four of these countries and Peru, totalling 42% of the analysed countries, the co-ordination bodies also oversee other digital agendas different from digital government. In the case of the Dominican Republic, Peru, and Uruguay, digital government is addressed as a sub-set of their wider digital transformation agenda. In Argentina and Colombia, these co-ordination bodies are responsible for the management and performance of the civil service and public institutions, addressing the digital government agenda, for example, through special thematic commissions as in the case of Argentina's CoFeFup's Administrative Modernisation Commission, Open Government and Innovation Commission, and Technological Infrastructure and Cybersecurity Commission.

Table 1.4. Digital government co-ordination bodies/mechanisms in LAC

Country	Name (English)	Co-ordinated by the digital government leading unit/agency?	Co-ordination across different levels of government, including subnational/local governments	Scope of mandate
Argentina	Federal Council of Public Function (CoFeFuP)	No	Yes	Broader than DG
Bolivia	Council for Information and Communication Technologies of the Pluri-national State of Bolivia (CTIC-EPB)	Yes	Yes	DG dedicated
Brazil	System for the Administration of Information Technologies Resources (SISP)	Yes	Yes	DG dedicated
Chile	Network of digital transformation coordinators and CIO Committee	Yes	Yes	DG dedicated
Colombia	Council for institutional management and performance	No	Yes	Broader than DG
Costa Rica	High-level Commission of Digital Government of the Bicentennial	Yes	No	DG dedicated
Dominican Republic	Digital Transformation Cabinet	No	Yes	Broader than DG
Mexico	Inter-secretarial Commission for Information and Communication Technologies, and Information Security (CITICSI)	Yes	Yes	DG dedicated
Panama	National Council for Government Innovation	No	No	DG dedicated
Paraguay	Co-ordination and Interoperability Committee for Electronic Government	Yes	Yes	DG dedicated
Peru	High Level Committee for a Digital, Innovative and Competitive Peru	Yes	Yes	Broader than DG
Uruguay	Honorary Advisory Council for the Information Society	No	No	Broader than DG

Note: No information available or no co-ordination bodies for Barbados, Brazil, Ecuador, Jamaica, Panama, Uruguay, Trinidad and Tobago, and Venezuela.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

Finally, the *OECD E-Leaders Handbook on the Governance of Digital Government* suggests the inclusion of a wider level of participation, including relevant non-government stakeholders, to build more inclusive, sustainable, and equitable digital transformation agendas in the public sector. In LAC countries, 8 out of the 12 co-ordination bodies under review include different levels of governments among their members, such as subnational and local governments. This finding reflects the importance given to the integration of subnational governments while building a more inclusive and diverse structure to Co-ordinate digital government policies across levels of government.

Participants belong exclusively to the central level of government just in the case of Costa Rica's High-level Commission of Digital Government of the Bicentennial,[13] and Panama's National Council for Government Innovation. In the case of Paraguay, the Co-ordination and Interoperability Committee for Electronic Government includes among its members participants from the legislative and judicial branches, broadening the spectrum of concerned public sector institutions. However, among its members there was no substantial participation from subnational governments.[14] Uruguay is a particular case as its Honorary Advisory Council for the Information Society counts with the participation of non-governmental

stakeholders, such as the academia and the private sector, but it only includes representatives from the central level of government among its public sector participants.

Summing up all the three evaluated criteria, Bolivia's Council for Information and Communication Technologies of the Pluri-national State of Bolivia (CTIC-EPB), Brazil's System for the Administration of Information Technologies Resources (SISP), Chile's Network of Digital Transformation Coordinators and CIO Committee, Mexico's Inter-secretarial Commission for Information and Communication Technologies and Information Security (CITICSI) stand as the only co-ordination bodies in LAC headed by the organisation-in-charge of digital government, dedicated exclusively to the digital transformation of the public sector, and including different levels of government among its members.

The existing co-ordination bodies/mechanisms across LAC countries have different characteristics and positions inside governments and there is no single model that should be regarded as the best practice, as these need to be tailored to each country's institutional context. Furthermore, to obtain a comprehensive picture of the effectiveness of these bodies in influencing the development and implementation of digital government strategies, it is critical to take into consideration their decision-making and advisory responsibilities. Based on the formal functions and mandates defined for each body, Table 1.5 compiles the responsibilities the OECD was able to assess for the existing bodies across different areas, including setting the agenda, co-ordination, monitoring, and project implementation.

Table 1.5. Decision-making and advisory of responsibilities of co-ordination bodies/mechanisms in LAC

	Argentina	Bolivia	Brazil	Chile	Colombia	Costa Rica	Dom. Rep.	Mexico	Panama	Paraguay	Peru	Uruguay
	Decision-making responsibilities											
(i) Prioritisation of digital/ICT projects investment across the central/federal government		✓	✓			✓	✓	✓	✓			
(ii) Management of the value proposition process (i.e. business cases) of digital/ICT projects across the central/federal government						✓		✓				
(iii) Approval of digital/ICT projects across the central/federal government								✓	✓			
(iv) Mandating external reviews (e.g. performance assessments) of digital/ICT projects across the central/federal government						✓						
(v) Provision of financial support for the development and implementation of digital/ICT projects									✓			
	Advisory responsibilities											
(vi) Advising the development of the central/federal NDGS		✓			✓	✓	✓	✓	✓	✓		✓
(vii) Ensuring horizontal co-ordination of public sector institutions at central/federal level involved in the implementation of the national digital government strategy	✓	✓	✓	✓	✓		✓	✓		✓	✓	
(viii) Monitoring the implementation of the NDGS				✓	✓	✓	✓	✓				✓
(ix) Advising the development and implementation of institutional digital strategies (e.g. agencies, ministries)	✓		✓					✓		✓		
(x) Developing and overseeing adoption of common technical standards for the development of digital/ICT infrastructure across the central/federal government (e.g. interoperability)	✓	✓		✓	✓					✓		
(xi) Advising public sector institutions at central/federal level in the implementation of digital/ICT projects (including public procurement)	✓		✓		✓	✓		✓		✓		
(xii) Monitoring the development of digital/ICT projects across national and/or subnational levels of government and aligning them to the objectives of the NDGS	✓				✓	✓	✓					
(xiii) Co-ordinating with subnational government the development of digital/ICT projects aligned to the objectives of the NDGS	✓	✓	✓		✓						✓	

Note: No information available or no co-ordination bodies for Barbados, Brazil, Ecuador, Jamaica, Panama, Uruguay, Trinidad and Tobago, and Venezuela.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

Only a minority of bodies have decision-making authority, while most of them mainly have advisory responsibilities. In terms of the decision-making authority, 50% of bodies have decision-making responsibilities over the (i) prioritisation of digital/ICT investment projects across the central/federal government. Costa Rica's High-level Commission of Digital Government of the Bicentennial, Mexico's CITICSI, and Panama's National Council for Government Innovation are the only institutions that provide additional decision-making responsibilities, such as (ii) defining and assessing the value proposition

process of digital/ICT projects (17% of the reviewed bodies/mechanisms), (iii) approving digital/ICT projects (17%), (iv) mandating external reviews (e.g. performance assessments) of such projects (8%), and (v) providing financial support for the implementation of such projects (e.g. digital investment funds) (8%).

On the advisory responsibilities, most of the analysed bodies (9 out of 12, or 75%) are responsible for (vii) ensuring horizontal co-ordination of public sector institutions at central/federal level involved in the implementation of the digital strategy. This is the case of Brazil's SISP, which serves as a co-ordination body at the technical level to promote alignment among the federal-level organisations on digital government policies and practices. Some bodies also have more specific responsibilities regarding the development and implementation of the NDGS: 67% of the analysed bodies (vi) advise its development and 50% (viii) monitor its implementation. Another 50% (xi) advises public sector institutions on the implementation of digital/ICT projects, while 60% of the bodies under review also (xiii) Co-ordinate with subnational governments the development of digital/ICT projects aligned with the NDGS. At the lower end of the spectrum, only 42% (or 5 out of 12) bodies under review (x) develop and oversee the adoption of common technical standards for digital/ICT infrastructure, and 33% (or 4 out of 12) (ix) advise on the development and implementation of institutional digital strategies and (xii) monitor the development of digital/ICT projects across national and/or subnational levels of government.

Going forward, countries in LAC should consider increasing strengthening their institutional structures for co-ordinating and overseeing the development and implementation of digital government policies and initiatives. If not fully dedicated to digital government, these structures could have proper co-ordination functions on the development and implementation of digital government strategies. It would be advisable for co-ordination bodies to also expand the scope of engaged stakeholders, considering the inclusion of strategic non-governmental actors.

Leveraging the digital government agenda in LAC

Delivering and implementing digital government policies also requires having the necessary instruments to support public sector entities in their digital transformation. Enacting this shift from setting the strategic objectives to the implementation of policies and delivery of services is achieved through policy levers such as the strategy and plan, regulations and standards, as well as project management tools and financial management mechanisms. Policy levers allow governments to increase their effectiveness and efficiency as they enable to create public value in a coherent and systemic way (OECD, 2021[3]). This section concentrates on evaluating two types of policy levers across LAC: (i) national and regional digital government strategies and (ii) regulations and standards, while Chapter 2 covers public investment processes, project management tools and financial mechanisms.

National Digital Government Strategies (NDGS)

National strategies for digital government are a fundamental policy tool for coherent and sustainable co-ordination and execution of key actions and initiatives. Since Council's *Recommendation on Digital Government Strategies* of 2014 (OECD, 2014[1]), the OECD has promoted the adoption of strategic approaches in the use of digital technologies and data towards open, participatory, and innovative governments. This section reviews the main characteristics and priorities set by LAC countries in their NDGS, as well as in regional or multilateral strategies. The analysis understands a strategy as a mechanism normally taking the form of a document (e.g., policy document, white paper) that defines the vision, objectives, goals, main actors, main actions and monitoring system (indicators) for a specific topic or policy area.

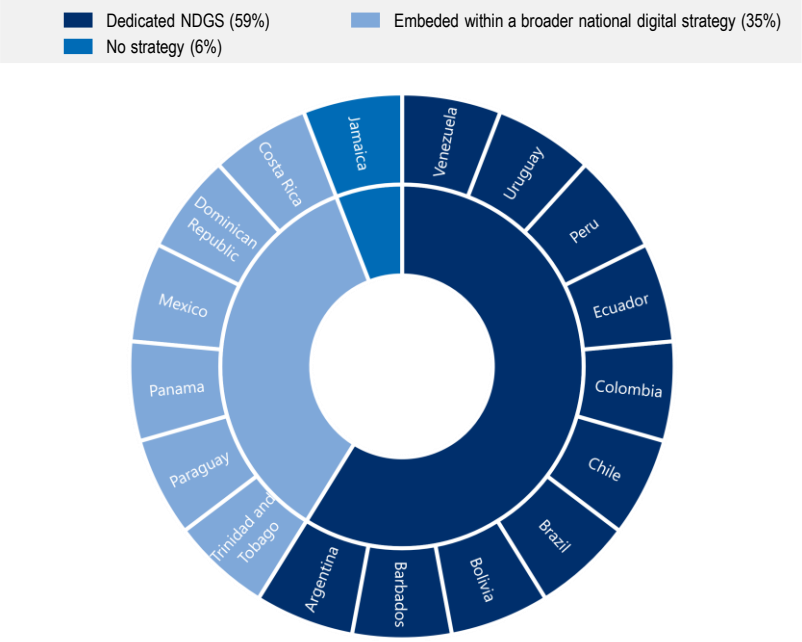
Although not indispensable, having a dedicated NDGS is a choice that countries can take to enhance management and accountability over their digital government agenda. LAC countries have made important progress in adopting digital government strategies. The OECD was able to confirm the existence of a NDGS in 16 of the 17 countries under review (or 94%) (see Table 1.6). Of these, 63% have developed dedicated NDGS, while 37% of countries develop their strategic objectives and action lines on digital government as part of broader digital transformation agendas or strategies (Figure 1.7).

Table 1.6. National Digital Government Strategies (NDGS) in LAC (2022)

Country	Name of the Strategy (English)	Year	Type of strategy	KPI's or monitoring instrument
Argentina	Strategy Applied to the Federal Digital Public Transformation Program	2022	Dedicated NDGS	Yes
Barbados	Public Sector Modernisation Programme	2019	Dedicated NDGS	Yes
Bolivia	E-Government implementation plan 2017 - 2025	2017	Dedicated NDGS	Yes
Brazil	Digital Government Strategy / Estratégia de Governo Digital - 2020 a 2023[1]	2020	Dedicated NDGS	Yes
Chile	State Digital Transformation Strategy	2019	Dedicated NDGS	No
Colombia	Digital Government Policy (2022)	2022	Dedicated NDGS	Yes
Costa Rica	Digital Transformation Strategy towards Bicentennial Costa Rica 4.0	2018	Embedded within a broader national digital strategy	No
Dominican Republic	Agenda Digital 2030 - Digital Government Axis	2022	Embedded within a broader national digital strategy	Yes
Ecuador	E-Government National Plan 2018-2021	2018	Dedicated NDGS	Yes
Mexico	National Digital Strategy 2021-2024 - Line of action: Digital Policy in the Federal Public Administration	2021	Embedded within a broader national digital strategy	Yes
Panama	National Digital Agenda 2022 - Digital Government Transversal Enablers	2022	Embedded within a broader national digital strategy	No
Paraguay	Digital Agenda - Component: Digital Government	2019	Embedded within a broader national digital strategy	Yes
Peru	1. General Government Policy 2021-2026 - Axis 8: Government and digital transformation with equity. 2. Digital Government Law and Regulation Decree	2018 and 2021	Dedicated NDGS	Yes
Trinidad and Tobago	ICT Blueprint 2018 – 2022 - Digital Government Strategic Thrust	2018	Embedded within a broader national digital strategy	No
Uruguay	Digital Government Plan 2025	2021	Dedicated NDGS	No
Venezuela	National E-Gov Plan 2014-2019	2014	Dedicated NDGS	Yes

1. Previously being designed for the 2020-22 period, Decree No. 11.260 of 22 November 2022 extended the validity of Brazil's Digital Government Strategy to 2023.
Note: The listed strategies encompass those fully in place by December 2022.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

Figure 1.7. Type of NDGS in LAC



Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

The few countries in LAC that do not have a dedicated NDGS, or do not have a strategy at all, are mainly countries with small public sectors relative the size of their economies.[15] This seems to suggest a tendency to devote a more dedicated strategic approach to digital government when the government has a bigger relative weight in the economy. A similar trend is also visible geographically, with most South American countries and Barbados having a dedicated NDGS, while countries from the Caribbean region, Central America, and Paraguay either not having or having it as part of a broader digital transformation strategy.

On the typology of strategies, the case of Colombia and Peru is significant as they have adopted legal documents that frame the institutional approach and objectives towards digital government. Colombia has a digital government policy adopted through a government decree in 2022,[16] while Peru has defined its strategic objectives through the General Government Policy from 2018, the Digital Government Law from 2018,[17] and the Regulation of the Digital Government Law through a presidential decree in 2021.[18]

NDGS in LAC share common objectives and action lines. Countries are generally aiming at broader societal objectives such as improving citizens well-being, increasing the efficiency of the public sector, simplifying and enhancing access to public services, or improving collaboration and participation of citizens. At a more operational level, 10 common themes were identified among the strategies action lines, including: governance, services, data, innovation, and training, and developing and updating digital government infrastructure and capacities. Through a dedicated thematic analysis, these elements are further explored in a following sub-section and in Annex 1.A.

Further, 69% of the NDGS in LAC have key performance indicators (KPI's) or monitoring instruments, in place, while 31% do not. This is a positive but modest result, as monitoring is a key element for the delivery of pertinent and accountable strategies. Among the different types of strategies, a majority of dedicated NDGS have these monitoring instruments in place, while the strategies embedded in broader transformation strategies tend not to have such monitoring instruments. This distinction results in a higher level of management and accountability for countries with dedicated strategies to advance their digital government agenda.

The results also indicate that many digital government strategies in LAC lack contemporaneity, as 45% of the analysed NDGS are from 2020 or earlier, 19% from 2021, and 36% from 2022.[19] This suggests an important challenge in the region in making strategic approaches relevant, updated, and adapted to the changing technological, economic, and political landscape, particularly after the acceleration of digital transformation in the wake of the COVID 19 pandemic.

Finally, as LAC countries have progressed in the development of broader digital agendas, countries having dedicated NDGS are also aligning their digital government objectives with these broader policy objectives, generally through a digital transformation of government chapter or section.

For instance, Brazil recently published the Brazilian Strategy for Digital Transformation (E-Digital) for the 2022-2026 cycle,[20] which includes a "Digital Transformation: citizenship and government" axis seeking to "Make the federal government more accessible to the population and more efficient in providing services to citizens, in line with the Digital Government Strategy." It also includes specific objectives on relevant issues for digital government, such as open data, data governance, interoperability, and evidence driven policies, digital identity, cloud, digitally competent teams, and infrastructure optimization.

Colombia also has a digital strategy including a line of action in digital government. The ICT Plan 2018-2022 'The Digital Future belongs to Everyone'[21] included projects in areas such as open data, open-source software, digital security, service design and delivery (including digital identity, interoperability, central delivery platform), procurement, common digital architecture, guidelines improvement, and smart cities. It also considered a novel component on the development, use and application of science, technology and research, associated with the creation of a public information ecosystem. This component considers increasing the use, appropriation, and collaboration around digital services, as well as the development of new digital solutions for the public sector based on technology, science, and innovation.

In Ecuador, the country's digital economy strategy, Ecuador Digital (2019), also embeds digital government related actions, such as digital services, cybersecurity, digital identification, and open data. Other countries are also including digital government as part of other national agendas. For instance, in the Dominican Republic, the National Development Strategy of the Dominican Republic 2030 considers digital government in two of its four axes, promoting interoperability in its governance line and promoting literacy and digital education, the production of content and free software focused on digital government in the economy line (Enriquez, 2022[18]).

Regional digital integration: Strategies and common agendas for digital government

Strategic approaches for digital government throughout the region are not limited to national strategies. In fact, LAC countries are promoting greater regional digital government integration through established multilateral arrangements and institutions. Table 1.7 compiles the current regional digital strategic instruments that include priorities or actions on digital government. MERCOSUR referenced strategy is not a formal document, but a working agenda defined periodically by the Digital Agenda Group (GAD). The Regional Digital Strategy from the Central America Integration System (SICA), adopted in 2022, is not explicitly focused on digital government but on the broader digital transformation of the region, although it contains elements that support the digital transformation of the public sector. In the case of the GEALC Network (see Box 1.1), a regional Action Plan was approved during the VII Ministerial Meeting (2022) and its objectives are in line with network's priority areas. Finally, ECLAC' Digital Agenda 2024 (e-LAC 2024) was approved during the Eighth Ministerial Conference on the Information Society in Latin America and the Caribbean in Montevideo in November 2022, where countries committed to strengthening regional co-operation activities in digital matters.[22]

Table 1.7. Regional digital government strategic instruments or agendas including digital government (2022)

Leading organisation/body	Name of the strategy (English)	Year	Type of strategy	KPI's or monitoring instrument
Andean Community (CAN)	Andean Digital Agenda - Digital Government and Digital Transformation Axis	2022	Embedded within a broader regional digital strategy	No
ECLAC	Digital Agenda 2024 - Public innovation and digital transformation of the State	2022	Embedded within a broader regional digital strategy	Yes
Pacific Alliance	Roadmap for the Regional Digital Market (Pillar 2)	2020	Embedded within a broader regional digital strategy	No
MERCOSUR	Digital Agenda (Digital Government Axis)	2021	Embedded within a broader regional digital strategy	No
GEALC Network (OAS & IDB)	Action Plan 2023	2022	Dedicated Regional DGS	No
Central American Integration System (SICA)	Regional Digital Strategy in SICA (ERDI)	2022	Embedded within a broader regional digital strategy	Yes
Caribbean Community (CARICOM)	Digital Agenda		Under development	

Source: Author's elaboration

Of all the analysed strategies, only GEALC Network's Action Plan for 2023 is entirely dedicated to digital government, as it is a regional network devoted exclusively to the subject (Box 1.1). The rest of regional strategies include digital government as a section. Only 33% of the strategies under review include KPI's or a monitoring instrument. Of recent adoption (the earliest one dates to 2020), these initiatives share common objectives, generally around economic development and synchronising the progress of digital transformation in the region. Looking at their proposed lines of action, they are mostly focused on sharing of data (mostly through interoperability schemes and open data) and of digital infrastructure (digital identification, signatures, or public software) and cross-border digital services. Initiatives among the strategies include ECLAC's Digital Agenda focus on subnational digital government and citizen-centred, proactive and omnichannel services; MERCOSUR's focus on emerging technologies; Andean Community's objective of issuing policies to promote cyber and information security by adopting international standards; or GEALC Network's actions around public innovation. A comparative analysis of these action lines is explored in the following sub-section.

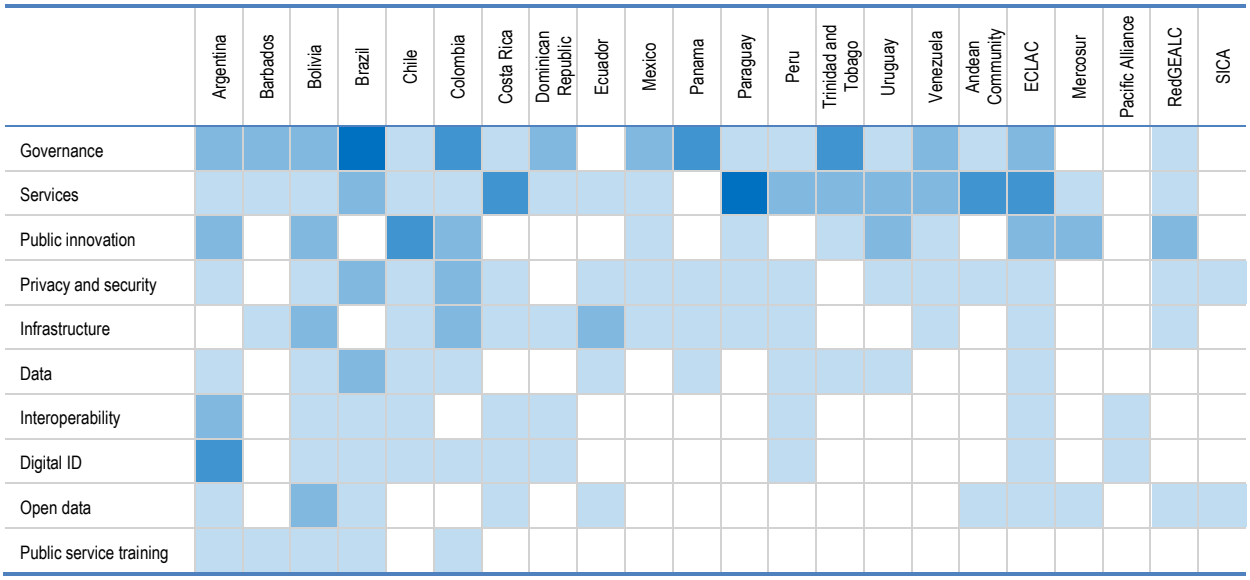
Common digital government priorities

The development of digital government strategies across countries and multilateral institutions in LAC has resulted in a multiplicity of priorities. Working towards a regional approach for digital government co-operation, unlocking synergies, and better focalising efforts requires understanding their common and diverging points. This section provides a thematic assessment of all national strategies and analyses them in the context of the key contextual factors reviewed in the first section. A detailed methodological explanation of the procedure and limitations of this analysis is contained in Annex 1.A.

Table 1.8 shows how the action lines of country and regional strategies in LAC match 10 common themes identified through a clustering exercise. Countries or organisations at the top have a greater number of action lines in their strategies, and themes (rows) towards the top cluster a greater number of action lines

across NDGS and regional strategic instruments. While a greater number of action lines clustered under a theme suggests a greater priority across the region, a greater amount of action lines per country or organisation does not necessarily indicate greater quality or relative effort of strategies. The choice of action lines done by each country and organisation is linked to their strategic priorities, contextual factors, and available resources.

Table 1.8. Common themes across the priorities set by NDGSs and regional digital government strategic instruments in LAC



Note: Action lines are understood as the highest-level action-oriented statements in a strategy. Colour intensity indicates the amount of action lines devoted to each of the themes, in a scale from 0 to 4. Order of countries/organisations and themes is given by the amount of action lines (i.e. countries/organisations with higher amount of action lines are at the top and most popular themes at the left). See Annex 1.A for a detailed explanation of the methodology used for this analysis. Not having a NDGS, Jamaica is not included in this table.
Source: Author's elaboration

Results show that most lines of action of the analysed strategies in LAC are concentrated in three themes: governance, services, and innovation. The lowest number of action lines in LAC strategies are devoted to public service training, open data, and interoperability. This order of priorities is the same when focusing solely on country strategies. Nevertheless, when examining exclusively regional strategies, the top three themes surfacing their action lines are government services, public innovation, and open data, followed by governance, privacy and security, interoperability, and infrastructure. At the regional level, no action lines are dedicated to public service training, and just a few are dedicated to data and digital identity.

When counting the number of countries and organisations having *at least one action line* corresponding to a specific theme, 86% have action lines for services, 82% for governance, and 77% for privacy and security, suggesting a shared strategic interest in LAC digital government strategies around these topics. Other common topics across most of the analysed strategies include infrastructure (73%), public innovation (59%), data (50%), and interoperability (50%). A minority of the strategies include digital identity (45%), open data (45%), and public service training (23%). A similar degree of shared strategic priorities is present when looking exclusively at country strategies. However, common priorities across regional strategic instruments considerably change, with open data being the most common theme shared by 83% of the analysed instruments, followed by services (67%), and privacy and security (67%). Half of the regional instruments contain at least one action line both on public innovation and governance, and a minority do it for infrastructure (33%), digital identity (33%), data (17%), and public service training (0%).

The comparative thematic analysis across NDGS and regional strategic instruments shows shared priorities among governance, services, privacy and security, innovation, and infrastructure. At a regional level, open data stands out as another common priority. Furthermore, a closer inspection at each theme reveals deeper information about the common and different approaches taken by strategies.[23] The *governance* theme clusters a variety of action lines related to the institutional or strategic arrangements necessary to carry out digital government policies. Various countries seek to work at the institutional structure and the regulatory framework levels. Another sub-cluster of action lines relates to digital investments, project management, government procurement, or performance monitoring. Some countries include action lines about participation and the involvement of citizens and external stakeholders. Finally, some countries also focus on the co-ordination of the digital government agenda with subnational governments.

Almost 90% of the strategies under review include some action line belonging to the *services* cluster. Most of the action lines are dedicated to online and digital services, with some additional efforts on simplification and quality improvement. In line with the analysis developed in Chapter 4, most LAC strategies still focus on the development of core building blocks and administrative simplification with a government-centric mindset, unlike most OECD countries where the trend is moving towards giving a more prominent role to user research and user-centric design in the digitalisation of government services. More specific action lines in some countries include omnichannel approaches, user experience, and agile services. No action lines in LAC countries are explicitly embedding OECD's digital-by-design approach[24] in their conception of service design and delivery. Additionally, some countries include sector specific action lines, such as the development of services for education, health, territorial cadastre, or subnational governments. Finally, regional strategies have a strong focus on cross-border digital services.

The *public innovation* cluster considers action lines comprehending innovation, collaboration, engagement and empowerment of citizens with digital tools, the use of emerging technologies, and the promotion of open government approaches. A practical example of this cluster is reflected in the creation of public digital innovation labs created across various LAC countries, as documented in Chapter 5. In contrast to other popular clusters, the *privacy and security* cluster includes a more homogeneous set of action lines dedicated to increasing government digital security capabilities and safeguards for the protection of privacy and personal data of citizens. The *infrastructure* cluster dwells on improving the core digital infrastructure for the delivery of digital government policies, including cloud, public software, digital architecture, or connectivity.

Among the less covered clusters, *open data* stands out for its prevalence among regional strategies. Action lines generally focus on the publication of open datasets and the promotion of their re-use. In the case of Costa Rica, the country has a special sectorial focus on promoting open mobility data. The *data* cluster includes action lines about data-driven policies and decision-making, data management and governance, and data analytics. The *interoperability* cluster contains action lines generally dedicated to the integration of information systems, with a particular focus from Ecuador on the interoperability at the subnational level, in Chile with the reduction of queues through the proactive sharing of information among public institutions, and the Pacific Alliance's focus on interoperability for foreign trade. Finally, the *digital identity* and *public service training* clusters cover a set of homogenous action lines promoting digital identity systems and the development of digital skills on public servants, respectively.

Although countries share common themes, there are important nuances and differences in how strategies develop their priorities. For instance, Mexico and Uruguay have a dedicated objective on digital inclusion and Peru's strategy includes R&D in digital government, two unique priorities across the Region. In Panama, digital government measures are conceived as horizontal enablers across its National Digital Agenda to "establish the foundations of the digitization of the country in a transversal way". In this sense, their six digital government focus areas are conceived to support the more sector-focused priorities of the digital agenda, such as economic reactivation lines of action (including actions on social, entrepreneurship, innovation, and sustainability areas) and impact sectors (including logistics, health, justice, finance, and

education). Costa Rica's strategy also defines sector-focused priorities for digital government, such as in health and mobility. In the context of digital government infrastructure, Mexico emphasizes the importance of technological autonomy. In Paraguay, component 4 of the Digital Agenda emphasises governance through the strengthening of the institutional framework and government capacity for the development of the Digital Agenda, specifically focusing on the Ministry of Information Technologies and Communication (MITIC). At a minor degree, some countries also stress the importance of refitting their digital government governance institutional structure and collaboration with subnational governments. Chile has a strong priority towards simplification and digitalisation, based on law no. 21,180 on the Digital Transformation of the State that has fully entered into force from December 2021, which sets a formal requirement for all administrative procedures to be expressed through the electronic means established by law, except for legal exceptions.

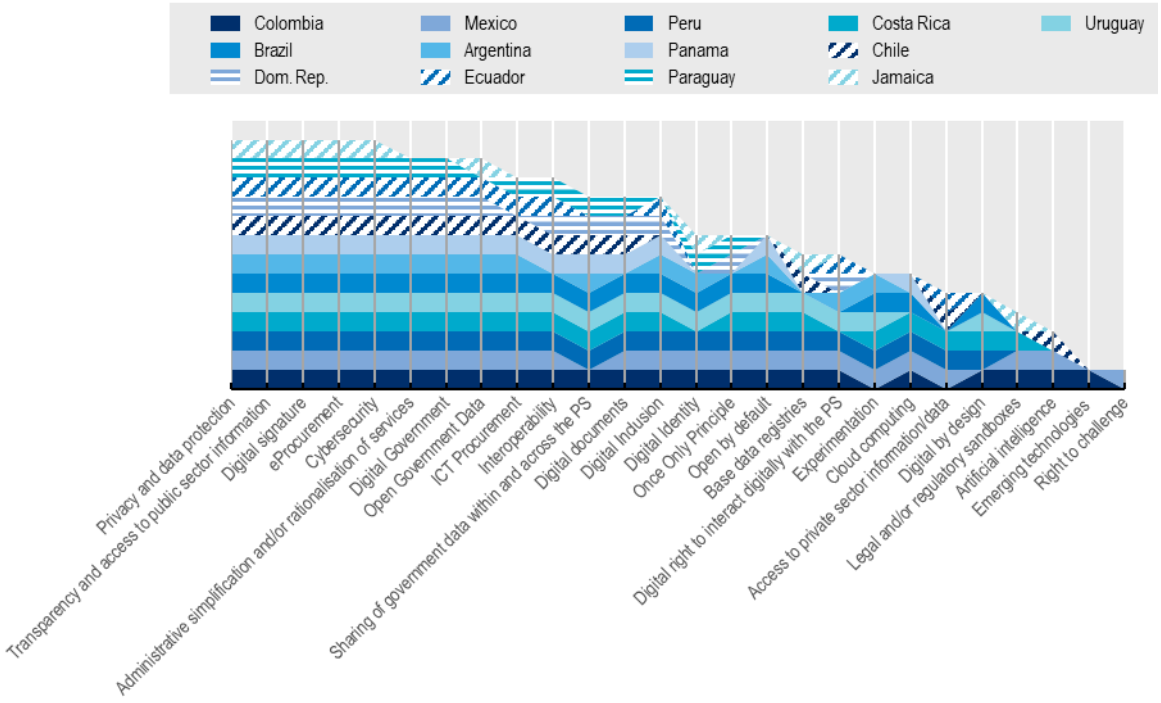
Finally, some countries also have some specific actions and tasks containing topics that might not be evident in the core action lines analysed in this sub-section. For instance, Panama's strategy contains below its general priority lines a wide set of specific tasks and commitments touching on elements of digital services, digital identity, interoperability, open data, and public service training. In Brazil, the NDGS included a distinct goal of migrating services from a minimum of thirty agencies to the cloud, a task that was successfully accomplished by 2022. Through other strategies, some countries have also developed action lines in topics that are not visible in Table 1.8. For example, Uruguay seeks to make the use of national integrated systems for digital identity widespread in the country, an action line developed in their digital agenda rather than in their NDGS.[25] In the case of Mexico, interoperability and open data are primarily developed through the *Transparency, Open Government and Open Data Policy of the Federal Public Administration 2021 – 2024,*[26] and public service training is considered in the Agreement setting technical dispositions for IT implementation in the Federal Public Administration.[27]

Aligning normative and regulatory frameworks towards digital government

Governments in LAC can also leverage regulations and legislations to advance the implementation of the digital government agenda. These can be a diverse set of instruments by which governments set requirements on businesses and citizens, including laws, decrees, formal orders, subordinate rules, administrative acts and rules issued by non-governmental or regulatory bodies to whom governments have delegated regulatory powers.[28] However, setting a normative framework for digital government does not mean effective implementation in practice. While not addressed in this chapter, countries should acknowledge the "assessment of the actual outcomes from regulations against their rationales and objectives" (OECD, 2020, p. 10[19]), as advised by the *OECD Best Practice Principles for Regulatory Policy*.

Evidence in the region shows that most countries have made progress covering in their legislations' topics such as privacy and data protection, transparency and access to information, digital signature, e-procurement, cybersecurity, administrative simplification and rationalisation of services, digital government, and open government data (Figure 1.8). About 75% of the analysed countries have covered topics such as ICT procurement, sharing of government data, digital documents, interoperability, and digital inclusion. On the other side of the spectrum, less common topics across LAC (covered by less than 40% of the analysed countries) include access to private sector information/data, digital by design, legal and/or regulatory sandboxes, artificial intelligence, emerging technologies, or the right to challenge (i.e., ability to apply for exemptions from existing rules, or ability to request rules be reconsidered).

Figure 1.8. Legal instruments covering digital government issues



Note: Does not include Barbados, Bolivia, Trinidad and Tobago, and Venezuela.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

Topics related with advanced digital capabilities and proactive and anticipatory approaches are mostly present among the most digitally mature countries in LAC. These include issues such as digital inclusion, digital identity, once-only principle, open by default, base data registries, digital right to interact digitally with the public sector, and experimentation. Mexico, Colombia, Peru, Costa Rica, Uruguay, and Brazil are the countries covering the widest number of issues in their legislations. With fewer policy coverage in their legislations, Argentina, Dominican Republic, Chile, Paraguay, Ecuador, Panama, and Jamaica still have room to improve.

Looking forward, developing a trustworthy digital government increasingly requires setting the necessary safeguards for the ethical use of technology and data by public servants and decision makers. LAC countries are showing promising progress in adopting normative frameworks for digital rights. For instance, as it was documented by the OECD and CAF, Colombia, Chile, Mexico, and Uruguay were found to be the most mature countries in the region when comparing legislation and ethical frameworks related to the use of AI in the public sector. Yet, more than half of the analysed countries either have some initial capacities or require significant effort and support on the matter (OECD/CAF, 2022[20]; CAF, 2021[21]). Another relevant example is the recognition of either new rights or existing rights applied to the digital space. Peru's Charter of Digital Rights is the first official initiative in the region covering a set of rights to guide the development of the digital transformation of the country. Similarly, the Ibero-American Charter of Principles and Rights in Digital Environments sets the ground for a common understanding of principles and values guiding the development of legislation and public policies in the realm of digital environments (Box 1.3).

Box 1.3. Digital rights in LAC

Digital technologies have opened new opportunities for individuals to exercise and experience their rights, while simultaneously introducing new ways for their infringement (OECD, 2022[22]). Consequently, governments worldwide are increasingly addressing the governance of rights in the digital age, as well as the rights stemming from the use of digital systems. This expanding policy domain, commonly referred to as digital rights, has also captured the attention of LAC countries. The initiatives documented below show this growing interest to proactively steer the progress of digital development in government and society at large.

Peruvian Charter of Digital Rights

In mid-2022, the Government of Peru released a Charter consisting of 25 designated rights for public feedback. While non-binding, this document presents a vision and framework from the Peruvian State to delineate the implementation of human rights in the digital sphere and provide guidance for the development of digital transformation public policies. The ongoing participatory process aims to foster discussions on the significance and content of these rights.

Table 1.9. List of digital rights acknowledge by the Peruvian Charter of Digital Rights

Rights related to the protection of the person in digital environments 1. Digital Identity 2. Non-discrimination 3. Protection of personal data 4. Privacy 5. Enjoy a balanced and adequate digital environment	**Rights that are exercised in digital environments or media** 6. Freedom of expression and freedom of information 7. Access to public information 8. Access to culture and knowledge 9. Political participation 10. Peaceful meeting 11. Free association
Enablers 12. Free, open and secure Internet access 13. Net Neutrality 14. Anonymity 15. Emerging Technologies	**Specific rights for girls, boys and adolescents** 16. Digital education 17. Enjoy a balanced and adequate digital environment 18. Protection of personal data 19. Privacy
Rights related to Public Administration 20. Digital health 21. Digital education 22. Digital Justice 23. To interact through digital channels and using electronic means with public administration entities	**Specific rights for the work environment** 24. Digital Disconnect 25. Telecommuting

Source: Gob.pe (2022[23]), *Carta Peruana de Derechos Digitales*, https://www.gob.pe/institucion/pcm/informes-publicaciones/3302991-carta-peruana-de-derechos-digitales.

Ibero-American Charter of Principles and Rights in Digital Environments

Approved at the XXVIII Ibero-American Summit of Heads of State and Government in 2023, "The Ibero-American Charter of Principles and Rights in Digital Environments" is a declarative and non-binding Charter that aims to establish common principles for all States when enacting or adapting national legislation and implementing public policies in the realm of digital environments. Its primary objective is to drive progress towards a more just, inclusive, equitable, and secure information society by placing individuals at the forefront of digital transformation. Additionally, the Charter extends its scope to include

private companies, civil society, and academia, emphasizing their roles in the development and application of technologies that prioritize people's interests.

Comprising diagnoses, declarations, and high-level commitments, the Charter addresses ten key areas. These include (1) the centrality of individuals, their duties, and rights in digital environments; (2) digital inclusion and connectivity; (3) privacy, trust, data security, and cybersecurity; (4) ensuring full access to education, culture, and health in inclusive and safe digital environments; (5) paying special attention to the rights of children and adolescents; (6) promoting social, economic, and political participation in fair and sustainable digital environments; (7) enhancing public administration in the digital realm; (8) fostering a fair, inclusive, and secure digital economy; (9) adopting an approach to emerging technologies that upholds the centrality of people; and (10) encouraging Ibero-American assistance and co-operation for digital transformation.

Source: SEGIB (2023[24]), *Carta Iberoamericana de Principios y Derechos en Entornos Digitales*, https://www.segib.org/?document=carta-iberoamericana-de-principios-y-derechos-en-entornos-digitales; SEGIB (2023[25]), "Culmina la XXVIII Cumbre Iberoamericana con acuerdos en medioambiente, seguridad alimentaria, derechos digitales y financiamiento internacional", https://www.segib.org/culmina-la-xxviii-cumbre-iberoamericana-con-acuerdos-en-medioambiente-seguridad-alimentaria-derechos-digitales-y-financiamiento-internacional/.

Annex 1.A. Thematic analysis methodology

The thematic analysis of action lines presented in the 'Common digital government priorities' sub-section was developed through the following procedure.

1. Action lines were identified across all strategies. They are understood as the highest-level action-oriented statements contained in each strategy, meaning they are the actionable priorities of each country (e.g. "Increase the use of the cloud and government network").
2. The action lines were synthetised using qualitative codes (Annex Table 1.A.1).
3. Codes where then clustered according to their similarity, leading to ten overarching topics (Annex Table 1.A.2).
4. Annex Table 1.A.3 was created classifying all country codes on their corresponding category.
5. To obtain the heatmap presented in Table 1.8, each comma-separated code was assigned a value of 1. The sum of all codes in each cell determined the colour intensity. Cells with the highest values scored 4, while those with the lowest scored 0. Values were also used to determine the order of rows (countries/organisations) and columns (categories). Countries/organisations with the highest number of codes are positioned at the top. Similarly, categories with the highest number of codes are positioned at the left.

It is important to note that, as this analysis seeks to compare actionable priorities of countries, one resulting limitation is derived from the different structures of all strategies. For comparison purposes, it can provide a more profound examination of those strategies with clear and specific action lines, potentially overlooking the full richness of content that strategies with more generic action lines may also contain. To manoeuvrer this limitation, additional references to relevant content of some strategies are also included as examples.

Annex Table 1.A.1. Main objectives, action lines, and qualitative codes of national and regional digital government strategies in LAC

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
Argentina	Strategy Applied to the Federal Digital Public Transformation Program	Govern and take advantage of the implementation of digital technologies to rethink and redesign public processes, simplify procedures and create new channels of communication and participation for its citizens.	**Guiding principles**: • Democratisation of Digital Public Access. • Digital Public Co-operation. • Transparency. • horizontality. • Harmonization. • Innovation. • Technological Legality • Technological Resilience. • Sustainability. • Traceability. • Usability • Once Only • Internet of Behaviours **Strategy Elements**: • Governance • Functional structure • Information privacy • Integrality of Human Resources • Digital Public Innovation • Open state **Base modules of the strategy**: Electronic Document Management System - GDE; Digital signature; Distance Procedures – TAD; Authenticate; Benefits Platform – Interoperate	• **Main objectives**: govern technologies, redesign public processes, simplify procedures, create new channels of communication and participation for citizens. • **Areas of action**: governance, privacy, digital skills in public service, public digital innovation, open State, integration of systems, digital signature, document management, data, co-ordination with subnational entities, digital services, digital identity.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
			Actions: 1. Infrastructure for innovation initiatives related to administrative management and systems integration solutions, and implementation of the Digital Signature of the Argentine Republic 2. Electronic document management systems for the administrative processes of the National Public Sector. 3. Innovation and adaptation initiatives related to administrative management and solutions for system integration and data use of the National Public Sector 4. Co-ordinate actions, within the scope of its competence, with the provinces and the AUTONOMOUS CITY OF BUENOS AIRES 5. Incorporation of initiatives and management systems that facilitate remote processing for individuals and legal entities 6. Integration of transversal innovation initiatives with an impact on the entire National Public Sector in terms of electronic identification systems for people	
Barbados	Public Sector Modernisation Programme	(i) increasing the adoption of the digital channel to access public services by individuals and businesses; and (ii) an enhancement of the efficiency in the civil service and strengthening the skills in the public sector for a digital economy.	• Design and implementation of an updated national digital strategy: includes the design of a digital governance structure and creation of a multi-disciplinary digital team. • Implementation of online services for businesses and individuals • Core digital infrastructure for online service provision • Skills for a high performing public service: includes "upskilling for public sector employees, including training in disruptive technologies in public administration" (p. 12, https://www.iadb.org/projects/document/EZSHARE-794889102-114?project=BA-L1046)	• **Main objectives**: increased adoption of digital channels, efficiency and skills in public sector. • **Areas of action**: governance structure, digital team, online services, core digital infrastructure, public service skills.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
Bolivia	E-Government implementation plan 2017 - 2025	I) Modernize and make public management transparent, providing quality services and attention to citizens, guaranteeing the right to information, as well as contributing to the efficiency and effectiveness of administrative activity in internal government processes, through the use of information and communication technologies and other tools. II) Generate and establish technological mechanisms of participation and social control, through the use of ICT by citizens, social organizations and native indigenous peasant peoples and nations.	**Sovereign Government** 1. Infrastructure and connectivity: A state data network. Interconnected data centers that provide sovereign cloud computing services. 2. Research, innovation and technological development 3. Interoperability: Technical interoperability platform in operation. 4. Digital citizenship: A digital citizenship platform (one--stop-shop) that interoperates with different electronic services of the State. 5. Computer and information security **Efficient Government** 6. Simplification of procedures 7. Public management: Integrated State planning and management systems. 8. Technical advice and training: Training programs for public servants carried out. 9. Public records 10. Economic development services 11. Quality of public services 12. Autonomous territorial entities **Open and Participatory Government** 13. Transparency and open data: An open data platform in operation. 14. Participation and social control	• **Main objectives**: modernisation, transparency, efficiency of public sector, improved participation, inclusion of all social groups. • **Areas of action**: infrastructure, connectivity, innovation, interoperability, cybersecurity, simplification, public service training, economy, open government, participation, open data, transparency.
Brazil	Digital Government Strategy / Estratégia de Governo Digital - 2020 a 2022	1) offer simple and intuitive digital public services, consolidated in a single platform, 2) grant broad access to information and open government data, 3) promote public policies based on data and evidence and on predictive and personalized services, using emerging technologies.	• **Citizen-centered**: responding to citizen expectations through high-quality services (simple, agile and personalized) and experience. • **Reliable**: respect of the freedom and privacy of citizens and ensuring an adequate response to the risks, threats and challenges that arise from the use of digital technologies in the State, reinforced by digital identity.	• **Main objectives**: simple and intuitive public services, access to information, data-driven policies and proactiveness. • **Areas of action**: citizen-centred, high quality services, privacy, freedom, risk management, digital ID, integration and interoperability, transparency and open data, participation, data-driven policies, proactiveness and emerging techs in the public sector,

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
		NDGS seeks to build "An intelligent government, which implements effective policies based on data and evidence and proactively anticipates and solves the needs of citizens and organizations, in addition to promoting a competitive and attractive investment environment".	• **Integrated**: consistent service experience for the citizen and integration of data and services from the federal State, with cost reduction, higher digital services offer and reducing citizen burden. • **Transparent and open**: proactive provision of data and information and enabling the monitoring and participation of society in the various stages of services and public policies. • **Intelligent**: effective policies based on data and evidence, proactive anticipation and solving of the needs of citizens and organizations, and promotion of a competitive and attractive business environment for investments. • **Efficient**: professionals' training, rational use of the workforce, intense application of technological platforms and shared services in operational activities, and optimization of infrastructure and technology contracts.	competitiveness, public service training, efficiency gains and optimisation.
Chile	State Digital Transformation Strategy	**Key objectives**: better services, intensive data use, more transparency and participation.	1. Digital ID: single authentication, personal data management, digital signature. 2. Zero queues State 3. Zero paper State 4. Data-driven state: • defining a national data and AI strategy (see column C) • fostering data use • fostering a collaborative and open ecosystem: innovation, open data, research, data re-use by Govtech ventures. 5. Cyber security 6. Forward-looking State: "The objective of this line of action is to generate instances of public-private collaboration to explore new technologies applied to the public sector, thereby promoting innovative initiatives through the use of emerging technologies." (p. 22)	• **Main objectives**: better services, intensive data use, more transparency and participation. • **Areas of action**: digital ID, simplification, data use, innovation, govtech, cybersecurity, collaboration, emerging techs in the public sector, governance of digital government, core infrastructure, interoperability.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
			Other relevant measures: • Governance: the strategy assures top-level support and creates various consulting bodies: Digital Transformation Council, Services Council, Regulatory Council, Local Governments Council, and Public-private Advisory Council. • Promotion of key enablers: cloud, interoperability (standards and platform), internal software development, procurement policy.	
Colombia	Digital Government Policy (2022)	Positively impact the quality of life of citizens and, in general, the inhabitants of the national territory and the competitiveness of the country, promoting the generation of public value through the digital transformation of the State, in a proactive, reliable, articulated and collaborative manner among Interest Groups and allow the exercise of the rights of cyberspace users.	**Transversal axes**: • Governance: relations between the national and territorial order, the central and decentralised level, and stakeholder engagement • Digital public innovation: innovative and creative solutions that make use of ICTs and innovation methodologies to solve public problems from a citizen-centred perspective. **Enablers**: capacities to enable the implementation of the Action Lines of the Digital Government Policy. • Architecture • Culture and appropriation • Information security and privacy • Digital citizen services **Lines of action**: set the main characteristics to be materialised by the dynamising initiatives. • Intelligent services and processes • Data Driven Decisions • Open state **Dynamising Initiatives**: materialise the Lines of Action and allow the objective of the Policy to be fulfilled. • Digital transformation projects	• **Main objectives**: improving quality of life, competitiveness, allow the exercise of digital rights. • **Areas of action**: governance, digital innovation, public sector capacities, architecture, technology appropriation, privacy, security, digital services, data-driven decisions, open state, projects, smart cities and territories.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
			• Strategies for smart cities and territories	
Costa Rica	Digital Transformation Strategy towards Bicentennial Costa Rica 4.0	1. Deliver digital, integrated, safe and high-quality public services to improve the well-being of the inhabitants. 2. Transform public institutions for collaborative and efficient work, applying new technologies for smart decision making.	**1. Digital life (digital government related)** • Unique Digital Health Record (EDUS) • Digital hospitals and schools • Open data intelligence of public transport to improve the user experience. • Attribute interoperability - single point of public information of the citizen. • Interoperability of services in local governments (Cities and regions) • Big data tools for municipal decisions (Cities and regions) • Digital territorial information (Cities and regions) • Integration of digital municipal services (Cities and regions) **2. Intelligent Costa Rica (digital government related)** • National interoperability model. • Standardization of services. • User experience. • Digital citizen identity document • Identification with biometric mechanisms. • Authentication with certified digital signature. • Integration of identity devices. • Efficient acquisition of software licenses. • Efficient use of the State's data centers. • Integrate the operation and exchange of data in social and health systems such as the Unique Digital Health Record (EDUS) and the National -Information System and Unique Registry of State Beneficiaries (SINIRUBE). • Development of the National Cybersecurity Strategy (action line, includes various activities).	• **Main objectives**: quality services to improve well-being, transform public institutions through collaboration and efficiency. • **Areas of action**: digital health and education, open mobility data, interoperability, subnational digital governments and services, user experience, digital ID, digital procurement, infrastructure efficiency, cybersecurity.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
Ecuador	E-Government National Plan 2018-2021	Promote citizen participation, the democratization of public services, the simplification of procedures and efficient state management, through the use of the resources that the State currently possesses.	**1. Open government** • Promote the use of open data • Promote the protection of personal data **2. Closer Government** • Improve the quality of electronic services **3. Effective and efficient government** • Increase the use of the cloud and government network • Promote reuse of state software • Implement the digitization of public offices • Drive decisions with digital data • Increase interoperability with autonomous governments	• **Main objectives**: participation, democratisation of public services, simplification, State efficiency. • **Areas of action**: open data, personal data protection, quality of digital services, government cloud, public software, data-driven decisions, interoperability at subnational level.
Mexico	National Digital Strategy 2021-2024	- Digital Policy in the Federal Public Administration: Transform the Federal Public Administration through the use and taking advantage of ICTs to improve and make transparent government services provided to citizens. [Action lines 1-6] - Digital Social Policy: Increase Internet coverage throughout the country to combat marginalization and connect the poorest and most remote areas, thereby facilitating their integration into productive activities. [Action line 9]	1. Digital government policy and guidelines: Improve and harmonize the regulatory framework of the digital policy of the APF through a comprehensive and simplified articulation of technological guidelines for the country, which allow technical and economic efficiency to be achieved. 2. Austerity and efficiency measures: Standardize ICT purchases through transparent, austere and effective actions that generate savings and maximize the responsible exercise of public resources. 3. Technological autonomy and independence: Promote autonomy and technological independence to establish the rectory of the State in the definition of its Information and Communication Technologies. 4. Technological collaboration: Obtain the maximum use of computing applications and infrastructure through the exchange of information and technological collaboration. 5. Information security: Promote a culture of information security that generates certainty and confidence for	• **Main objectives**: federal government transformation, improvement and transparency of services. • **Areas of action**: regulatory framework harmonization, procurement, technological autonomy, collaboration, security, data sharing and use.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
			users of institutional and governmental technological services. 6. Data sharing and use: Promote the continuity and improvement of projects and programs based on the integration of structured information available in the Institution. 9. Improve the quality of social programs through technological solutions that facilitate and accompany actions aimed at the well-being of the population.	
Panama	National Digital Agenda 2022 - Digital Government Transversal Enablers	Establish the transversal foundations of the digitization of the country	1. Governance 2. Regulatory framework 3. Digital infrastructure 4. Territorial articulation 5. Data management 6. Cybersecurity	• **Main objectives**: digitalisation of the country. • **Areas of action**: governance, regulatory framework, digital infrastructure, territorial articulation, data management, cybersecurity.
Paraguay	Digital Agenda - Component: Digital Government	Reduce the transaction costs of access to public services for citizens and companies.	1. Proposals for regulations in digital government and strategic sectors 2. Simplified and digitized services 3. Health Information System (HIS) 4. Roadmap for the digital transformation of the SNC Digitization of the Cadastre System) 5. Digital government systems 6. Government innovation laboratory to support the development of specific digital government projects 7. Multichannel service model 8. Strengthening of the National Cybersecurity System	• **Main objectives**: reduce transaction costs for accessing public services. • **Areas of action**: regulatory framework, simplification of digital services, digital health, digital cadastre, core infrastructure, public innovation, multichannel services, cybersecurity.
Peru	1. General Government Policy 2021-2026 - Axis 8: Government and digital transformation with equity. 2. Digital	**General Government Policy**: Accelerate the government and digital transformation of the public sector, promoting the technology ecosystem and strengthening digital governance in the country. **Digital government law**: 1. Regulate governance, management and	**Digital Government Law and its Regulation** Axis of action: • Digital Government: objectives, governance structure and functions • Digital Identity • Digital Services Delivery • Administrative procedures	• **Main objectives**: accelerating digital transformation of government, regulate digital government policies, collaboration between public entities, promoting digital government R&D, digital training and education in the public sector. • **Areas of action**: governance, digital identity, digital services, administrative procedures,

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
	Government Law and Regulation Decree	implementation activities in the field of digital technologies, digital identity, digital services, digital architecture, interoperability, digital security and data. 2. Co-ordinate, integrate and promote collaboration between Public Administration entities. 3. Promote research and development in the implementation of digital technologies, digital identity, digital services, interoperability, digital security and data. 4. Promote and guide education and training in digital government and digital technologies at all levels of government.	• Data Governance • Interoperability • Digital Security • Digital architecture	data governance, interoperability, security, digital architecture.
Dominican Republic	Agenda Digital 2030 - Digital Government Axis	Achieve the efficiency and transparency of the Public Administration through the use and adoption of digital technologies, bringing the State ever closer to the citizenry to improve their quality of life	1. Drive and promote in a comprehensive and sustained manner the digital transformation of the Dominican State, from the different areas of management. 2. Strengthen the design and implementation of sectoral public policies through the use and adoption of digital technologies, within a scheme of inclusion and respect for fundamental rights. 3. Strengthen interoperability mechanisms, digital identity, digital signature, data management, critical systems, and the continuity of operations in the Dominican State.	• **Main objectives**: improve efficiency, transparency, and trust of public sector for better quality of life. • **Areas of action**: sectoral adoption of digital technologies, inclusion and fundamental rights, interoperability, digital ID, data management, reliability.
Trinidad and Tobago	ICT Blueprint 2018 – 2022 - Digital Government Strategic Thrust	3. Digital Government - Ensuring the use of ICT to transform the delivery of public goods and services and strengthen institutional capacity, putting people first and creating public value for the benefit of society	1. Offering end-to-end e-services 2. Driving user adoption 3. Increasing government efficiency 4. Promoting open government: e-participation, e-consultation, data analytics	• **Main objectives**: transforming delivery of services, strengthening institutional capacity, user-centred approach. • **Areas of action**: end to end digital services, user adoption, government efficiency, open government, participation, consultation, data analytics.
Uruguay	Plan de Gobierno Digital 2025	1. Alignment with national government objectives 2. Efficiency and savings 3. Quality of public services 4. Transparency of public management	1. Digital transformation of processes: Redesign and simplify management processes in the State. 2. Digital transformation of services: more agile services 3. Strengthening of the Information Society: reduce the	• **Main objectives**: alignment, efficiency, quality of services, transparency. • **Areas of action**: simplification, agile services, digital inclusion, engagement of citizens using

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
			digital gaps so that all people can take advantage of the benefits of digital development, guaranteeing access to information, the use and adoption of the services provided by the State, as well as the involvement, participation and/or citizen collaboration in processes of generation and monitoring of public policies. 4. Innovation, emerging technologies and platforms: adoption of data science for decision making; analysis, testing and adoption of emerging technologies; Promote initiatives of "Government as a platform" (scalable and transversal platforms, for the generation of services of public value by public and private organizations.) 5. Cybersecurity: Strengthen the national cybersecurity ecosystem.	digital tools, data-driven decisions, emerging technologies, cybersecurity.
Venezuela	National E-Gov Plan 2014-2019	Guarantee the Venezuelan population universal, timely and efficient access to State services, through Information Technologies.	1. Empower the citizen: websites in the public sector, training for citizens in the use of digital services and creation of a virtual space for public consultations 2. Facilitate economic activity: improve the offer of digital services for the business sector and encourage the publication of open data for reuse by companies. 3. Improve the efficiency of the Public Administration • Simplification of procedures • Online payments • Integrate processes and data from the Citizen Service Offices under the same platform 4. Generate the Gov-E conditions • Design of a management model for the provision of services and administrative procedures with the use of IT • Have a security model that defines data protection policies and data signing and certification • Ensure the infrastructure required for the provision of services	• **Main objectives**: universal, timely and efficient access to services. • **Areas of action**: citizen empowerment, digital services and open data to support economic activity, public administration efficiency, online payments, management of digital projects, infrastructure, security.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
Andean Community (Bolivia, Colombia, Ecuador y Perú)	Andean Digital Agenda - Digital Government and Digital Transformation Axis	Not defined	• Promote the digitization and automation of procedures • Promote Andean cross-border services: • Promote open standards for the provision of government services and infrastructure development for digital transformation • Strengthen trust and digital security through public policies • Promote the opening and use of open data • Develop the feasibility of having an Andean compiled regulation body on Digital Government issues	• **Main objectives**: not defined. • **Areas of action**: digitalisation of procedures, cross-border services, open standards for services and infrastructure, trust and security, open data, governance (common regulation body).
ECLAC	Digital Agenda 2024 - Public innovation and digital transformation of the State	Digital transformation for social welfare	• **Goal 23**: Develop digital public services with a citizen-centred, proactive and omnichannel service model. • **Goal 24**: Build capacities to support implementation of digital signatures and accelerate the use of cross-border digital signatures and services, strengthening digital transactions so that they are reliable and safe within a framework of regional integration. • **Goal 25**: Promote interoperability and data governance strategies to improve decision-making and public management, with adequate management of people, processes and technology. • **Goal 26**: Promote an open government approach and open data strategies to encourage transparency, innovation, feedback, accountability and citizen participation in the exchange of experiences and regional dialogue. • **Goal 27**: Adopt digital systems to modernize the public procurement of goods, services and public works in order to ensure transparency, monitoring, citizen oversight and effective accountability. • **Goal 28**: Promote the adoption of digital identities and cloud computing services in government to enhance digital public infrastructure, considering digital identity an enabling element of the digital economy and an instrument to encourage inclusion. • **Goal 29**: Promote digital agendas and strategies in	• **Main objectives**: digital transformation for social welfare. • **Areas of action**: citizen-centred, proactive and omnichannel services, cross-border digital signatures and services, interoperability, data governance, open data, e-procurement, digital ID, digital public infrastructure, subnational digital government.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
			communities, cities and local governments to advance in digital transformation and address challenges in public services, transport, mobility, resource management, security and productive development, among others.	
Pacific Alliance	Roadmap for the Regional Digital Market (Pillar 2)	Pillar 2: Create an enabling environment to promote the exchange of digital goods and services	• Promote the use and interoperability of the electronic signature. • Promote the interoperability of the single window for foreign trade (VUCE)	• **Main objectives**: enabling environment for the exchange of digital goods and services. • **Areas of action**: digital signature, interoperability (foreign trade).
MERCOSUR	Digital Agenda (Digital Government Axis)	Digital Government Axis	• Joint initiatives on open government, open data, supply of cross-border services through digital media and the use of emerging technologies to improve government services. • Analysis of the convenience of developing a regional network with Blockchain technology, as well as the possibility of interconnecting networks of this type, for the implementation of applications within MERCOSUR that make use of the intrinsic characteristics of Blockchain technology	• **Main objectives**: not specified. • **Areas of action**: open government, open data, cross-border services, emerging technologies.
GEALC Network	Action Plan 2023	Red GEALC's objective: "promote and maintain spaces for reflection, mutual understanding, horizontal technical co-operation, training, and exchange of experiences among e-government agencies or bodies in the region, with the purpose of contributing to the strengthening of e-government practices, as well as building links between governments and civil society organizations and international organizations""	1. Cross-border services: Build capacities and support the implementation of cross-border electronic signatures and cross-border digital services to accelerate their regional adoption, strengthening reliable and secure electronic transactions as a boost to the digital economy and digital government within an integration framework. 2. Open data: deepen efforts for the generation and consolidation of open data, as well as regional open data policies and initiatives. 3. Cybersecurity: Contribute to generating useful inputs for the development and implementation of cybersecurity policies in the countries of the region. 4. Measurement of digital government: Become a support for the investigations that are carried out within the framework of the Gealc Network in accordance with its	• **Main objectives**: N/A. • **Areas of action**: cross-border services, open data, cybersecurity, digital government monitoring, public innovation, emerging technologies, public software.

Country	Name of the strategy (English)	Main objective(s) (original text translated to English)	Action lines (original text translated to English)	Qualitative codes for objectives and action lines
			promoting organizations. 5. Innovation in the public sector: Advance in the exchange of good practices to deepen innovation policies in the public sector in the region. 6. Emerging technologies: identification of emerging technologies and advance their knowledge to support digital transformation in the region. 7. Public software: Advance in the co-creation and adaptation of public software based on the collaborative model defined by the countries of the GEALC Network as a regional public good.	
SICA	Regional Digital Strategy in SICA (ERDI)	Promoting digital transformation and the implementation of regional initiatives	• Digital security • Interoperability • Open data	• **Main objectives**: promoting digital transformation and the implementation of regional initiatives. • **Areas of action**: digital security, interoperability, open data.

Annex Table 1.A.2. Main categories and corresponding qualitative codes for national and digital government strategies in LAC

Category	Qualitative codes
Governance	Governance, Co-ordination with subnational entities, Governance structure, Digital team, Citizen-centred, Freedom, Competitiveness, Efficiency gains and optimisation, Governance of digital government, Smart cities and territories, Projects, Digital procurement, Regulatory framework harmonization, Procurement, Governance, Regulatory framework, Territorial articulation, Regulatory framework, Inclusion and fundamental rights, Sectoral adoption of digital technologies, Participation, Consultation, Government efficiency, Digital inclusion, Public administration efficiency, Management of digital projects, Governance (common regulation body), Subnational digital government, E-procurement, Digital government monitoring
Services	Digital services, Online services, Simplification, High quality services, Digital health and education, Subnational digital governments and services, User experience, End-to-end digital services, user adoption, Agile services, Digital services and Open data to support economic activity, Online payments, Cross-border services, Open standards for services and infrastructure, Digitalisation of procedures, Citizen-centred, Proactive and omnichannel services, Cross-border digital signatures and services
Data	Data, Data-driven policies, Data use, Data-driven decisions, Data governance
Privacy and security	Privacy, Cybersecurity, Risk management, Security, Personal data protection
Interoperability	Interoperability, Integration of systems, Interoperability at subnational level, Interoperability (foreign trade), Digital security
Digital identity	Digital signature, Document management, Digital identity, Digital signature
Public innovation and open government	Public digital innovation, Open state, Public innovation, Open government, Proactiveness and emerging tech in public sector, Collaboration, Emerging techs in public sector, Govtech, Digital innovation, Open state, Public innovation, Emerging technologies, Engagement of citizens using digital tools, Emerging technologies, Public software
Public service training	Digital skills in public service, Public service skills, Public service training
Open data	Open data, Transparency and open data, Open mobility data
Infrastructure	Core digital infrastructure, Connectivity, Infrastructure, Core infrastructure, Infrastructure efficiency, Government cloud, Public software, Digital infrastructure, Reliability, Open government infrastructure, Digital public infrastructure

Annex Table 1.A.3. Qualitative codes of national and regional digital government strategies in LAC distributed across categories and countries

Countries/ organisations	Governance	Services	Public innovation	Privacy and security	Infrastructure	Data	Digital ID	Interoperability	Open data	Public service training
Argentina	Governance, co-ordination with subnational entities	Digital Services	Public Digital Innovation, Open State	Privacy		Data	Digital Signature, Document Management, Digital ID	Interoperability, Integration of Systems	Open Data	Digital Skills in Public Service
Barbados	Governance Structure, digital team	Online Services			Core Digital Infrastructure					Public Service Skills
Bolivia	Participation, Economy	Simplification	Public Innovation, Open Government	Cybersecurity	Connectivity, Infrastructure	Data	Digital ID	Interoperability	Open Data, Transparency	Public Service Training
Brazil	Citizen-Centred, freedom, competitiveness, Efficiency Gains and Optimization	Digital Services, high quality services	Proactiveness and Emerging Techs in Public Sector	Privacy, Risk Management		Data, data-driven policies	Digital ID	Integration and Interoperability	Transparency and Open Data	Public Service Training
Chile	Governance of Digital Government	Simplification	Collaboration, Emerging Techs in Public Sector, Govtech	Cybersecurity	Core Infrastructure	Data Use	Digital ID	Interoperability		
Colombia	Governance, Smart Cities and Territories, Projects	Digital Services	Digital Innovation, open state	Privacy, Security	Architecture, Public Sector Capacities	Data-Driven Decisions	Digital ID			Public Service Training
Costa Rica	Digital Procurement	Digital Health and Education, Subnational Digital Governments and Services, user		Cybersecurity	Infrastructure Efficiency		Digital ID	Interoperability	Open Mobility Data	

Countries/ organisations	Governance	Services	Public innovation	Privacy and security	Infrastructure	Data	Digital ID	Interoperability	Open data	Public service training
		experience								
Ecuador		Quality of Digital Services		Personal Data Protection	Government Cloud, Public Software	Data-Driven Decisions		Interoperability at Subnational Level	Open Data	
Mexico	Regulatory Framework Harmonization, Procurement	Data Sharing and Use	Collaboration	Security	Technological Autonomy					
Panama	Governance, Regulatory Framework, Territorial Articulation			Cybersecurity	Digital Infrastructure	Data Management				
Paraguay	Regulatory Framework	Digital Health, Digital Cadastre, Simplification of Digital Services, Multichannel Services	Public Innovation	Cybersecurity	Core Infrastructure					
Peru	Governance	Digital Services, administrative procedures		Security	Digital Architecture	Data Governance	Digital ID	Interoperability		
Dominican Republic	Inclusion and Fundamental Rights, sectoral adoption of digital technologies	Data Management			Reliability		Digital ID	Interoperability		
Trinidad and Tobago	Participation, consultation, Government Efficiency	End-to-End Digital Services, user adoption	Open Government			Data Analytics				
Uruguay	Digital Inclusion	Simplification, Agile Services	Engagement of Citizens Using	Cybersecurity		Data-Driven Decisions				

Countries/ organisations	Governance	Services	Public innovation	Privacy and security	Infrastructure	Data	Digital ID	Interoperability	Open data	Public service training
			Digital Tools, Emerging Technologies							
Venezuela	Public Administration Efficiency, Management of Digital Projects	Digital Services and Open Data to Support Economic Activity, Online Payments	Citizen Empowerment	Security	Infrastructure					
Andean Community	Governance (Common Regulation Body)	Cross-Border Services, Open Standards for Services and Infrastructure, digitalisation of procedures		Trust and Security					Open Data	
ECLAC	Subnational digital government, e-procurement	Citizen-centred, proactive and omnichannel services, Cross-border digital signatures and services	Public innovation, emerging technologies	Cybersecurity	Digital public infrastructure	Data governance	Digital ID	Interoperability	Open data	
Pacific Alliance							Digital signature	Interoperability (foreign trade)		
Mercosur		cross-border services	Emerging technologies, Open government						Open data	
GEALC Network	digital government monitoring	Cross-border services	Public innovation, emerging technologies	Cybersecurity	Public software				Open data	

Countries/ organisations	Governance	Services	Public innovation	Privacy and security	Infrastructure	Data	Digital ID	Interoperability	Open data	Public service training
SICA				Digital security				Interoperability	Open data	

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Notes

[1] According to the International Institute for Democracy and Electoral Assistance (IDEA), weak democracy refers to countries that score low on one or more of their democratic attributes (unless they score high on four out of five attributes) : Representative Government, Fundamental Rights, Checks on Government, Impartial Administration, and Participatory Engagement. A mid-range performing democracy refers to a country with low performance on any attribute (GSoD score <0.4) and not high on all 5 (GSoD score >0.7). A high performing democracy, which is not the case of the analised countries, refers to a country that have high performance (GSoD score >0.7) on all 5 democratic attributes. (Source: https://www.idea.int/gsod-indices/sites/default/files/gsod-methodology-november-2020.pdf).

[2] "The measurement of civil society participation relies on six V-Dem indicators. They result from an expert survey and consider the extent to which the population is engaged in civil society activities, including political associations and independent trade unions. The six indicators on civil society participation were clearly tapped into a common dimension and aggregated into an index using BFA" (Source: https://www.idea.int/gsod-indices/sites/default/files/inline-files/global-state-of-democracy-indices-codebook-v6.pdf).

[3] Particularly to note, Chile (2014-2020), Colombia (2003-2018) and Venezuela (1994-2020) are classified by the IDB as not having information or not applying to the left/centre/right categories.

[4] Such as the OAS (Organisation of American States), the CELAC (Community of Latin American and Caribbean States), or the Central American Integration System (SICA).

[5] Such as the Andean Community (CAN), Central American Common Market (CACM), Southern Common Market (MERCOSUR), and the Pacific Alliance.

[6] Such as the IDB, CAF, or CABEI (Central American Bank for Economic Integration).

[7] Such as the OECD (including Mexico, Chile, Colombia, and Costa Rica as member countries, and Brazil and Peru as accession countries), USMCA (US-Mexico-Canada free trade agreement), APEC (including Mexico, Peru and Chile as member countries), or CARICOM (Caribbean Community).

[8] https://www.oecd.org/gov/open-government-in-latin-america-and-caribbean.htm.

[9] Further methodological information about the index, the base data points, and its measurement can be found in: https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2016-Survey/Annexes.pdf.

[10] It is noteworthy to mention that the HCI measurement does not include digital skills.

[11] Although the formal functions of Brazil's Ministry of Management and Innovation in Public Services include the co-ordination with subnational governments the development of their digital/ICT strategies and projects, in information exchanges held within the scope of this report, the OECD was told that there is yet not sound mechanisms to ensure that all state and municipal level institutions follow the guidelines issued by the federal government. However, it is expected that the upcoming National Digital Government Strategy, to be launched in the end of 2023, will involve co-ordination between all levels of government.

[12] https://jis.gov.jm/ict-council-established-to-spearhead-re-organisation-of-government-operations/.

[13] However, it is worth noting that the High-level Commission includes three experts that could come from the civil society, private sector or other non-governmental sector.

[14] https://www.datos.gov.py/dataset/integrantes-del-comite-de-coordinacion-e-interoperabilidad-para-el-gobierno-electronico-2022.

[15] There is a positive correlation of 0.7 between the existence of a dedicated NDGS and the size of the public sector, measured as the public spending as a percent of the country's GDP (Source: author calculations with data from (World Bank, 2022[27])).

[16] https://www.mintic.gov.co/portal/715/articles-210461_recurso_1.pdf.

[17] https://www.gob.pe/institucion/pcm/normas-legales/289706-1412.

[18] https://www.gob.pe/es/institucion/pcm/normas-legales/1705101-029-2021-pcm.

[19] It is worth noting that, as of the data collection closure for this section in December 2022, certain countries were in the midst of updating their strategies. For instance, Chile was working on a new strategy, the *Agenda for the Modernization of the State 2022-2026.*

[20] https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/transformacaodigital/arquivosestrategiadigital/e-digital_ciclo_2022-2026.pdf.

[21] https://www.redgealc.org/site/assets/files/10945/plan_tic_2018_2022_20200107.pdf.

[22] https://www.cepal.org/en/pressreleases/countries-region-approved-digital-agenda-latin-america-and-caribbean-elac2024.

[23] See Annex Table 1.A.1 for a detailed list of action lines per country and per theme.

[24] Digital by design approach refers to a situation where digital technologies and a digital mind set are rooted in the government. This means that a digital mind set and digital technologies are systematically applied to rethink, improve and simplify the formulation of public policies, the designing of public services and the delivery of those services. However, this does not mean that digital/online channels are mandatory to access a public service, but that rather digital channels broaden the scope of choices citizens have to access a public service and so interact in the most efficient way with public authorities (based on their preferences, i.e. preferred channel of interaction) (source: Glossary of the OECD Survey on Digital Government 2.0).

[25] https://www.gub.uy/uruguay-digital/en/comunicacion/publicaciones/uruguay-digital-agenda-2025.

[26] https://funcionpublica.gob.mx/web/transparencia/Politica_de_Transparencia_Gobierno_Abierto_y_Datos_Abiertos_de_la_APF_2021-2024.pdf

[27] https://dof.gob.mx/nota_detalle.php?codigo=5628885&fecha=06/09/2021#gsc.tab=0

[28] OECD Survey on Digital Government 2.0, Glossary.

2 Public sector capabilities for digital transformation

This chapter assesses the existing institutional capabilities to support digital government policies in Latin America and the Caribbean (LAC). It explores how governments in the region plan, implement and monitor public investments in digital government transformation and how governments develop the digital skills and talent required in the public administration.

Introduction

This chapter assesses the capabilities to support the design and implementation of digital government policies in Latin America and the Caribbean (LAC). The assessment examines two dimensions: 1) digital government investments and 2) digital talent and skills in the public sector. The first section analyses how governments plan, implement, and monitor public investments on digital government, securing coherence, mitigating risks and delivering impact by fostering a cost-effective and results-oriented digital transformation of the public sector. The second section uses the OECD Framework for Digital Talent and Skills in the Public Sector to assess the approach of LAC countries in creating an environment to encourage digital transformation, developing the skills to support digital government maturity, and establishing and maintaining a digital workforce (OECD, 2021[1]).

Digital government investments

Digital transformation calls for governments to streamline administrative and internal processes to facilitate the development of digital capabilities in the public sector. In this context, governments across the world are increasingly investing in their digital capabilities to address the changing needs of their citizens. Doing so entails governments being able to coherently and strategically plan, prioritise, fund, implement, and monitor digital investments that support a sustainable digital transformation. The COVID-19 pandemic catalysed this process, making it imperative to establish a resilient digital ecosystem in the public sector to enable citizens and other users to move seamlessly between analogue and digital environments. The need to develop such an ecosystem, including digital public infrastructure that sustains more effective and user-friendly interactions between governments and citizens, calls for governments to rethink their approaches to digital investments across the public sector.

Faced with the need for new digital capabilities in the public sector, governments should adopt strategic approaches to align efforts and exploit efficient management tools to ensure the best value-for-money in developing digital and ICT projects. To support governments in this task, the OECD has developed a Digital Government Investment Framework to identify the critical elements to ensure strategic and efficient planning, implementation, and evaluation of digital investments in the public sector. By advancing mature approaches to digital investments in the public sector, governments can increase the efficiency of public spending, improve the design and delivery of services, and develop the agility needed to ensure a sustainable digital transformation.

These considerations are especially relevant in a sector that has been characterised by cost overruns and major failures in the implementation of investments. In a context of limited fiscal space and sluggish economic growth (OECD et al., 2022[2]), the need to move towards impactful investments in digital transformation is essential to build capabilities and strengthen the resilience of the public sector in Latin America and the Caribbean.

The OECD Digital Government Investment Framework (OECD forthcoming) identifies three pillars building the foundations of a mature approach to developing digital government projects. Each of these pillars is composed of different policy elements that governments should secure and leverage to ensure public value creation through digital government investments:

- *Strategic planning of digital government investments:* Planning is the first step in developing digital projects. For digital investments in the public sector, three key elements are considered in planning: co-ordination and collaboration between the actors involved in the development of digital projects, the articulation of the value proposition, and the thorough assessment of benefits, costs, and risks.
- *Implementation of digital government investments:* The implementation phase includes the approval, execution and assurance of digital investment projects. In this phase, digitally mature

governments will ensure consistency in the project approval process, strengthen project management mechanisms, and ensure procurement practices creating necessary agility as well as the consistent adoption and deployment of digital tools across the public sector.

- *Monitoring and evaluation of digital government investments:* The monitoring and evaluation stage includes oversight of digital investments, safeguarding strategic alignment while maximizing efficiency and timely delivery. A whole-of-government approach to digital investments involves monitoring the progress of strategic initiatives, reporting delays, and promoting engagement with key stakeholders to secure the achievement of intended outcomes. Robust monitoring and evaluation mechanisms - can promote accountability in the development of digital projects by strengthening ownership and transparency. Governments can introduce user experience into the ex-post evaluation of digital projects, allowing the public sector to adapt delivery according to user needs. Proven monitoring and evaluation mechanisms incorporate data-driven approaches – enabling access to timely data on the implementation progresses - to maximise the realisation of benefits.

Figure 2.1. Digital Government Investment Framework

Source: OECD

Strategic planning of digital government investments

The first pillar analyses governments' capacities to strategically plan the digital government investment portfolio. One of the critical elements is the *level of co-ordination between digital government, public budgeting, and government procurement policies and institutions*. This co-ordination should be reflected in high-level, including ministers and senior administrative officials, and operational alignment to secure coherence and sustainability of the direction taken on digitalisation of the whole public sector (OECD, 2021[3]). Digitally mature governments will be able to concert efforts in digital government, public budgeting, and government procurement to maximise the benefits realisation of digital transformation.

> Latin American countries are facing challenges to align efforts between digital, budget and procurement authorities on decisions

about digital government investments, in an institutional context in which budget authorities lead resource allocation.

In Brazil, the role of the Secretary of Digital Government is limited to advising the Ministry of Management and Innovation in Public Services on decisions over resource allocation for digital investments in the public sector. In Chile, the Digital Government Division (DGD) influences spending on digital transformation through technical standard-setting (i.e., interoperability, digital identity), but the ultimate power to allocate resources resides in the Budget Office of the Ministry of Finance (DIPRES). However, since 2017, the DGD and DIPRES have been working together through standardised investment project evaluation processes, unifying spending criteria for digital goods and services. In Colombia, the planning of digital investments is decentralised, and the Ministry of Information and Communication Technologies (MINTIC) has limited influence on budget allocation and investment decisions for technology or infrastructure by public entities. Due to the significant differences in central government institutions' planning and implementation capabilities, the MINTIC is unable to determine the overall expenditure in digital projects across central government. In 2018 Paraguay published the decree establishing mandate of the Ministry of Information and Communication Technologies (MITIC), including approval of digital transformation plans, issuance of standards, guidelines, general policies, and support to public procurement to ensure efficient decision-making.[1]

In Uruguay, two of the pillars of the national digital government strategy (NDGS)[2] aim to strengthen co-ordination and alignment between digital government policies and budgetary and public procurement processes in terms of: (i) alignment with national government objectives and (ii) efficiency and savings. Regarding alignment with national government objectives, the Agency for Electronic Government and the Information and Knowledge Society (AGESIC) is working closely with the National Civil Service Office and the Office of Planning and Budget in the organisational restructuring of the central administration. This effort is organised around whole-of-government principles such as citizens' value creation, savings and efficiency through administrative simplification and process redesign. AGESIC also developed norms and standards to foster economies of scale in digital expenditures by standardising management tools and public procurement processes. These efforts are focused on a comprehensive and multidisciplinary approach led by AGESIC, considering technological, security, legal and financial aspects.

Cost-benefit and risk assessments follow a traditional approach in most countries, but rising and pressing global challenges, such as the green transition, call for updating relevant frameworks so that these are multi-faceted and decisions on digital investments are better informed.

The OECD Recommendation of the Council on Digital Government Strategies of 2014 includes a specific provision on business cases to support the value proposition, funding and implementation of digital investments (OECD, 2014[4]). The Recommendation emphasises the need to identify the economic, social, and political benefits to justify public investments, bringing together all relevant stakeholders including end-users, to secure engagement and benefits realisation.

Building on this provision, countries should develop *sound mechanisms for estimating costs, benefits, and risks of investments on digital government*. Decision-making on investments should be assessed to ensure an efficient management of public resources and a sustainable return on investments. Ex-ante assessments should also address pressing policy issues, including the environmental effects of digital investments, to prevent the digital transition from deepening environmental issues. As governments go

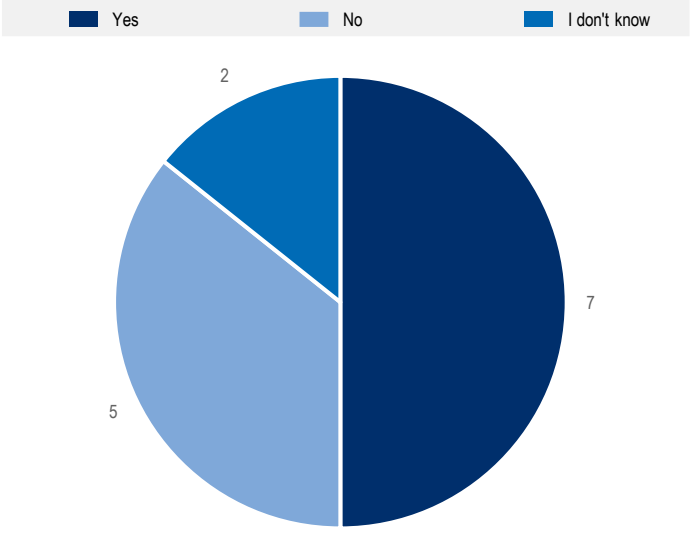
digital, the environmental considerations of digital investments will be increasingly relevant to secure a sustainable digital transformation of the public sector.

The value proposition is the holistic assessment of digital investment projects, reflecting the evaluation of costs and benefits, while at the same time assessing the relevance of individual projects in a broader digital strategy. The value proposition allows investment decisions to be standardised and aligned with strategic government objectives. A widely used mechanism for weighing value propositions are business cases. The OECD Recommendations for Digital Government Strategies calls for developing clear business cases to sustain the funding of digital projects by articulating value proposition mechanism to identify expected economic, social and political benefits (OECD, 2014[4]).

Countries in the region show different approaches to using business cases to define value propositions for digital projects. Seven countries are using business cases to evaluate the value proposition for digital, data or technology projects in the public sector. For example, in Argentina the approval of digital procurements requires the alignment with digital and technical standards set by the National Office of Information Technologies (ONTI) at the centre of government. ONTI updates these standards regularly, engaging with procurement officials in public sector institutions, including subnational governments. In Barbados, the 2019 Information Technology Procurement Policy mandates the Ministry of Innovation, Science and Smart Technology (MIST) as the authority for assessing and approving digital projects in the public sector. In Panama, the National Authority for Government Innovation (AIG) does not have the mandate to manage other institutions' budgets; nevertheless, acquiring technology goods and services requires their approval. To streamline these procedures, the AIG engages early in the budget process identifying needs across the public sector. These proposals require the consent of a strategic committee[3] and must comply with the software and hardware quality standards. Finally, in Uruguay, AGESIC developed a standardised model to assess the costs and benefits of digital government initiatives, providing an estimation of the return on investments. This model includes a cost-benefit analysis and an indicator matrix.

Figure 2.2. Business cases for digital projects in Latin America and the Caribbean

Survey question: Is there a standardised model/method to develop and present business cases or define a value proposition for data, digital and technology projects within the central/federal level of government in your country?



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Digital government investment assessment should include a thorough evaluation of the intrinsic risks of digital technologies, especially those related to the automation of operations and the use of data, such as the use of artificial intelligence in the public sector. These considerations affect public trust and pose a financial risk for the public sector in the form of contingent liabilities. This risk may include potential claims for both material and moral damages due to the misuse and flawed deployment of digital technologies, as exemplified by the Robodebt case in Australia.[4] To address these risks the OECD Good Practice Principles for the Ethical use of Data in the Public Sector (OECD, 2020[5]) call governments to embed ex-ante and ex-post risk-management approaches in order to mitigate such issues. Countries in the region have different maturity levels concerning the risk management for digital transformation projects, with Uruguay and Mexico advancing in the development of algorithmic impact assessment guidelines for process automation. These instruments allow the identification of risks and their timely mitigation (Box 2.1). However, such tools for identifying and measuring risks associated with the automation of decisions are still limited in LAC. Similarly, Chile has advance in the identification and registration of the use of algorithms in the public sector.[5]

Box 2.1. Algorithmic impact assessment in Mexico and Uruguay

Mexico - Impact Analysis Guide for AI

The Impact Analysis Guide is a tool designed to determine the societal and ethical reach of AI systems developed by the Federal Public Administration and define safeguards according to their potential impacts. It is based on Canada's Directive on Automated Decision Making and its associated Algorithmic Impact Assessment.[6]

Uruguay - Algorithmic Impact Study Model

AGESIC designed the Algorithmic Impact Study (EIA), the public digital agency of Uruguay, to analyse automated decision support systems that use machine learning. The model consists of questions that evaluate different aspects of systems, including the underlying algorithm, the data and their impacts.[7]

Source: OECD-CAF (2022[6]), *The Strategic and Responsible Use of Artificial Intelligence in the Public Sector of Latin America and the Caribbean*, https://doi.org/10.1787/1f334543-en.

LAC countries can enhance their planning capabilities for digital government investments by establishing multidisciplinary collaboration when conducting value proposition assessments, including digital, legal, and financial experts. LAC countries could broaden the scope of value propositions assessment by introducing social and environmental considerations as key dimensions in ex-ante assessments, reinforcing synergies between investments for digital and green transition. For example, France developed a whole-of-government mission for eco-responsible digital government,[8] which includes a roadmap and guidelines for the design of green digital services and procurement of digital goods and service in the public. These non-binding instruments can also contribute to ongoing efforts to measure the carbon footprint in the public sector and enable efforts towards convergent digital and green transitions. Finally, governments should consider further developing risk management approaches in the formulation of digital investments to secure a sustainable and resilient digital transformation of the public sector.

Implementation of digital government investments

The second area of analysis relates to the execution and implementation of investments on digital transformation in the public sector. Governments should ensure coherent and consistent implementation of digital transformation initiatives across the public sector to maximise the benefits of investments in digital

capabilities. For this purpose, governments should secure sound approval mechanisms, project management and ICT procurement mechanisms to equip governments with the digital capabilities needed to drive a sustainable transformation.

The project approval process refers to the selection of projects cleared for implementation. Digitally mature governments are more able to integrate the value proposition with the approval mechanism to ensure that the approved project portfolio has the financial feasibility, proper risk management and is aligned with strategic priorities. A robust project approval system allows governments to ensure compliance with digital standards enabling a coherent adoption of technologies across the public sector. Finally, project approval should be closely linked to funding mechanisms to reinforce compliance and coherence across government.

> Governments in the region could leverage the approval process of digital projects to build coherence in the delivery of digital government investments by securing digital standard compliance.

Governments in LAC show different approaches when approving digital investment projects. Overall, countries in the region could further leverage the approval process to enhance the management of digital investment portfolios by ensuring compliance with digital standards across government. Evidence collected shows that the link between approval mechanisms and compliance with standards is insufficient. However, some initiatives in the region may show the way forward to enhance the management of digital government investments in LAC.

In Chile, the Digital Government Division, together with the Budget Office, established in 2018 a procedure for approving investments in digital technologies in the public sector called EvalTIC (Box 2.2). In November 2020, Ecuador developed standardised guidelines to support the development of digital projects including technical and economic feasibility, operation and sustainability and legal assessment of potential initiatives. Ecuador's Ministry of Telecommunications (MINTEL) assesses projects by a simplified procedure based on a self-declaration of all projects over a budget threshold of USD 20.000. Under this guideline, MINTEL also provide technical guidance for the procurement of digital goods and services. In most LAC countries the impact of approval mechanisms for digital investments in the public sector has been limited as often these efforts are isolated from the budgetary cycle, including funding decision-making.

Box 2.2. Securing cross-governmental standards in digital investments in Chile

In Chile, the Digital Government Division (DGD) in Ministry Secretary General of the Presidency (MINSEGPRES) and the Budget Office (DIPRES) in the Ministry of Finance developed EvalTIC, a whole-of-government approach to assess and align all central government digital projects (both outsourced and in-house) as part of the annual budgeting process. The procedure requires initiatives to adhere to relevant digital government priorities and standards, such as cloud first, digital identity (ClaveUnica), agile project management, among others.

Line ministries and agencies submit their digital project proposals through EvalTIC platform prior to the annual budget discussions, co-ordinating efforts between financial managers, digital experts, and CIOs within each institution.

On an annual basis, digital and data projects are peer-reviewed by a network of institutional CIOs, providing a binding technical recommendation before the budget allocation decision. When needed, the public procurement authority (ChileCompra) demands a validation and approval code from the EvalTIC platform to create new purchase orders or tendering processes of ICT goods or services.

With this initiative Chile aims to increase efficiency in public expenditure on digital government by leveraging economies of scale and network effects of digital tools, align public expenditure in ICT with the strategic goals of the Digital Transformation Law 21.180, increasing the quality of ICT projects through standardisation focusing on public value creation and efficiency gains.

Source: OECD (2022[7]), *Digital Transformation Projects in Greece's Public Sector: Governance, Procurement and Implementation* https://doi.org/10.1787/33792fae-en.

LAC governments are leveraging the use of guidelines and directives to streamline the management and implementation of digital investments in the public sector. In line with these efforts, governments could embed and promote agile methodologies by developing supporting resources for project owners.

Another aspect for a successful execution of investments is the project management approach to support efficient and timely implementation of digital projects. The complexity involved in digital transformation projects requires governments to take concrete actions to ensure a coherent and standardised management. Governments can leverage guidelines and standards to support project delivery units, ensuring a homogeneous and consistent approach to project management across government. However, evidence shows that LAC governments do not have common approaches to manage digital projects in the public sector (Figure 2.3). Nevertheless, countries are leveraging guidelines and directives to support the management of digital investments and would benefit from embedding more clearly the use of agile methodologies, including agile public procurement, in the implementation of digital transformation projects.

In Brazil, the Secretary of Digital Government at the Ministry of Management and Innovation in Public Services elaborated in 2020 a portfolio project management methodology[9] which provides a set of good practices in the development and management of digital projects in the public sector. In Colombia, the MINTIC developed in 2019 a model for managing IT projects[10] to guide public institutions in the

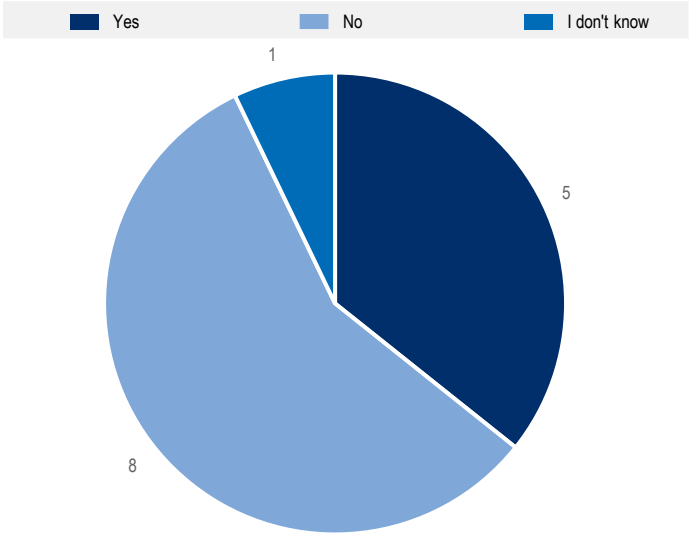
administration of their information technology projects in an adequate way to offer services to citizens in line with the digital government policy.

In Peru, the Secretariat for Digital Government of the Presidency of the Council of Ministers published in 2021 a dedicated guide for agile development of government digital services.[11] Based on the guidelines for digital services and the experience of countries such as the United Kingdom, the Secretariat for Digital Government developed this guide with the recommended pillars, principles, phases, and frameworks for the agile development of digital projects in the public sector.

In Uruguay, AGESIC developed a similar instrument in 2019 to guide the design of digital government projects[12] with recommendations, methods and tools that are publicly and freely available to support the development of digital transformation projects in the public sector. The document contains information and examples developed by consultants and officials working in AGESIC's Project Management Office to support the design and implementation of projects.[13]

Figure 2.3. Standardised project management models for digital projects in Latin America and the Caribbean

Survey question: Is there a standardised model for data, digital and technology project management at the central/federal government level?



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Finally, implementation of digital government investments requires relying on the capacities and expertise of the private sector through public procurement. Evidence shows that LAC countries have different levels of maturity regarding public procurement for digital goods and services, as well as different preferred procurement mechanisms to address digital needs in the public sector (Table 2.1). Nevertheless, it is possible to identify some trends in the procurement of digital goods and services. Firstly, some countries in the region have formalised joint procurement processes to improve value-for-money in the acquisition of standardised goods and services, with a particular focus on the procurement of hardware and ICT services such as internet and phone services. Secondly, despite recent initiatives in the region, Latin American and Caribbean countries have not been able to leverage innovative public procurement processes to equip public services with digital capabilities.

Table 2.1. Use of ICT procurement mechanisms in LAC governments

Digital government authorities when asked to indicate to what extent public sector institutions use the below procurement methods to purchase ICT goods and services

	Open public tenders (including tenders with negotiation)	Purchases below thresholds of formal tender procedures	Framework agreements (enabling repeated purchasing under predefined conditions)	Direct purchases (e.g. single source purchasing)	Public private partnerships (project financed schemes)	Innovative public procurement	Challenge-based and/or prize-based procurements
Argentina	Sometimes	Neutral	Neutral	Sometimes	Often	Neutral	Rarely
Barbados	Often	Often	Sometimes	Sometimes	Sometimes	Rarely	Sometimes
Brazil	Often	Sometimes	Often	Sometimes	Rarely	Rarely	Rarely
Chile	Often	Sometimes	Often	Sometimes	Rarely	Neutral	Never
Colombia	Rarely	Sometimes	Sometimes	Never	Never	Never	Never
Costa Rica	Often	Sometimes	Neutral	Neutral	Sometimes	Neutral	Never
Dominican Republic	Often	Rarely	Often	Never	Often	Neutral	Never
Ecuador	Often	Neutral	Rarely	Rarely	Rarely	Rarely	Rarely
Jamaica	Often	Often	Rarely	Often	Neutral	Rarely	Rarely
Mexico	Often	Neutral	Often	Neutral	Neutral	Neutral	Never
Panama	Often	Rarely	Neutral	Neutral	Rarely	Neutral	Neutral
Paraguay	Often	Often	Neutral	Neutral	Rarely	Rarely	Sometimes
Peru	Often	Often	Often	Neutral	Neutral	Sometimes	Never
Uruguay	Sometimes	Often	Neutral	Often	Never	Sometimes	Never

Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Framework agreements (along with open tender procedures) appear to be the most widely used mechanisms to implement public procurement processes for digital government in LAC given the faster access to approved suppliers under predefined conditions. Brazil, Chile, Dominican Republic, Mexico, and Peru use framework agreements to purchase digital goods and services. In Chile, ChileCompra prepares framework agreements for software development and digital service providers for contracts below a budget threshold; bids over the given threshold require an open tendering process. In Colombia, the government developed framework agreements for hardware, software, and digital services, including cloud services.[14] Uruguay developed a framework agreement tailored for short projects with a set of pre-approved providers, which is complemented with a specific framework to facilitate the collaboration with start-ups and innovators given existing restrictions for the participation of start-ups and other SMEs in public procurement.

LAC governments can also better leverage the benefits of co-ordinated public procurement processes for highly standardised and needed digital commodities, aggregating demand through a competitive procedure that improves purchasing conditions for the public sector. In the region, Chile stands out in the implementation of co-ordinated procurement for the acquisition of ICT goods and services. ChileCompra has two co-ordinated procurement mechanisms: co-ordinated purchases by mandate executed by ChileCompra; and joint co-ordinated purchases, where the procurement authority provides advice to the beneficiary institutions.[15] These procedures resulted in relevant efficiency gains, i.e. the co-ordinated purchase of computers reduce spending in 36,6% during the first half of 2022.[16] For 2023, ChileCompra and the Budget Office are planning to conduct co-ordinated procurement for mobile phone and broadband services, computer and printer leasing and purchasing of hardware. In addition to the work of Chile,

Colombia is also leveraging framework agreements to aggregate demand while securing technical standardisation for digital goods and services, cloud services and software.

Finally, digital government authorities in LAC are not yet fully leveraging the possibilities of innovative public procurement and challenged-based mechanisms. Table 2.1 shows that eleven out of the fifth teen countries never or rarely used challenge-based mechanisms for public procurement. Several reasons may explain this, including the absence of these mechanisms in LAC public procurement frameworks and a generalised lack of awareness about innovative procurement (Zapata and Sinde, 2022[8]).

Some LAC countries are advancing in adjusting existing public procurement mechanisms for this purpose. In December 2022, the Digital Government Secretariat in the Ministry of Management and Innovation in Public Services of Brazil issued the normative Instruction No. 94/2022,[17] which establishes public procurement procedures for ICT aligned with the New Law on Public Procurement and Administrative Contracts/NLLC (No. 14133/2021) including a standard defining new contracting modalities such as competitive dialogue. Overall, the use of innovative procurement mechanisms remains an exception rather than a regular practice when it comes to the procurement of digital goods and services in the public sector. there is an opportunity for the Latin American and the Caribbean governments to explore the use of innovative public procurement mechanisms such as competitive dialogue, design contests or innovation partnerships when procuring digital goods and services. These novel administrative instruments are an opportunity to equip the public sector with state-of-the-art digital capabilities by bringing in talent and knowledge from private providers and civil society. The European Commission developed in 2021 specific guidelines on innovative procurement practice to support countries through practical guidance that could be useful inspiration (Box 2.3).[18]

Box 2.3. European Commission - *Guidance on Innovation Procurement*

The European Commission published in 2021 a non-binding notice providing guidance to member countries on innovation public procurement. The notice aims to support public institutions in the use of innovation procurement to contribute better to the economic recovery, the twin green and digital transition and to the resilience of the EU. The guidance provides an overview of the innovation procurement concept, the policy framework required to advance towards a strategic approach, a description of the public procurement procedure to transform public service and the criteria needed to leverage innovation procurement. The notice provides a description of specific innovation friendly procurement mechanisms including:

- **Competitive dialogue**: this two-round procedure allows public institutions to describe needs in a descriptive document or contract notice, setting the minimum requirements for candidates and later defining the contract award criteria based on Best Price Quality Ratio (BPQR).
- **Design contests**: this procedure provides flexibility to propose innovative solutions based on contest needs. An independent jury evaluates designs using criteria outlined in the contest notice. The evaluation should follow an objective and transparent procedure balancing measurable quality criteria and cost-efficiency.
- **Innovation Partnerships**: this three-phased procedure applies in cases where there are no available solutions in the market, allowing public institutions to co-create solutions with provider by identifying a precise need to address. The innovation partnership was specifically designed to allow public buyers to build a partnership to develop and subsequently purchase innovative solutions. Through the research and development phase, providers and beneficiaries collaborate by developing prototypes and measuring performance.

Source: EC (2021[9]), *Guidance on Innovation Procurement*, https://ec.europa.eu/docsroom/documents/45975.

Some cases in the region show how governments are adapting public procurement processes to the contemporary challenges of digital technologies in the public sector such as artificial intelligence. For example, in Brazil different authorities including the Metro of Sao Paulo and the University of Sao Paulo Hospital[19] developed a dedicated AI procurement toolkit.[20] Similarly, in Chile, ChileCompra is collaborating with the Adolfo Ibañez University to formulate standardised bidding rules for procuring algorithms and artificial intelligence through public procurement processes.[21] These standardised directives consider ethical requirements such as transparency, privacy, non-discrimination and explainability for automated decision and artificial intelligence components in digital projects.

Monitoring and evaluation

The third aspect to analyse relates to instruments for monitoring and evaluating digital government investments. The OECD Recommendation of the Council on Digital Government Strategies (OECD, 2014[4]) underlines the importance of institutional capacities to monitor and assess the performance of digital government initiatives. When developing institutional capabilities and organisational knowledge, monitoring and evaluation tools play a critical role in an accountable and results-oriented digital transformation of the public sector. Finally, governments should acknowledge and address user experience when assessing the outcomes of digital investments. Monitoring and evaluation efforts are areas of improvement across LAC countries in digital government, as no consistent practices and efforts are observed in order to secure an effective implementation across participant countries. With a few examples on monitoring activities, most efforts in the region are concentrated on gathering of user experience regarding digital public services.

> Governments could more effectively use monitoring tools as strategic levers to steer the delivery of digital projects by developing performance indicators to better inform policymakers about the performance of digital investments in the public sector.

Monitoring and accountability mechanisms allow reporting on the progress and fulfilment of commitments set in NDGSs. Monitoring instruments and policy evaluation mechanisms can strengthen accountability by fostering institutional ownership over implementation and delivery. In this sense, LAC countries are not implementing whole-of-government and coherent mechanisms to monitor the implementation of digital government policy goals. One interesting example is being developed by Colombia's MINTIC through the Digital Government Index[22] as a measurement tool to support the implementation of the digital government strategy. This measurement instrument provides disaggregated data on the performance of national and local government institutions in relation to the policy goals established in the strategy. MINTIC publishes the results through an interactive dashboard and in open government data formats. The information is collected annually using a survey based on the three enablers and five objectives comprised in Colombia's NDGS.

> LAC countries could develop standardised methodologies to measure user experience and channel these insights into the design and delivery of digital transformation initiatives.

An area of further interest and expansion in LAC is measuring user experience in digital government services as a mechanism for ex-post evaluation of digital investments. Effective methods for measuring

user experience are critical to build a user-driven culture within the public sector, and enables the incorporation of user feedback into the design of digital government efforts and services. By developing standardised methodologies to measure user experience and channel those inputs into actionable insights, governments can transform the formulation of digital investments in a way that can be shaped by user needs. However, as further developed in Chapter 4 efforts conducive to collecting user satisfaction data are not yet fully leveraged in LAC governments, nor incorporated into feedback loops that inform service design and delivery.

Evidence shows different levels of maturity regarding collection and use of user feedback in LAC. Chile, Colombia, Dominican Republic, and Mexico collect user experience through dedicated surveys. In some cases, such as in Chile, Colombia and Mexico, citizen satisfaction surveys are designed and implemented by the public sector institutions responsible for quality of public service delivery (including outsourcing the data collection to external providers).

In the case of Mexico, the National Institute of Statistics and Geography (INEGI) conducts since 2011 the biannual National Survey on Government Quality and Impact[23] to measure citizen experience, perception and evaluation of government services. The 2021 edition included specific questions to measure the effect of corruption on service delivery and its overall impact on the citizen perception regarding public service delivery. In Colombia, the National Programme for Efficiency in the Service of the Citizen in the National Planning Department (*Departamento Nacional de Planeación* – DNP) ensures service quality and administrative efficiency in the public sector.[24] Since 2011, the DNP conducts the Survey for Citizen Perception,[25] measuring perception of the quality and accessibility of public procedures and services.

In Chile, since 2015 the Ministry of Finance in Chile develops a standardised yet adaptable methodology and survey to capture citizen satisfaction with public services.[26] The survey collects data on satisfaction rates, identifying users, channels, products, and services. While each institution conducts citizen satisfaction exercises, a standard methodology has been agreed to facilitate comparability between institutions and longitudinal analysis. External providers conduct the survey, including citizens' perception of service provision through face-to-face, digital and telephone channels.

In the Dominican Republic, the Ministry of Public Administration (MAP) is the body responsible for service quality. In 2019, MAP issued the resolution 03/2019[27] to conduct a citizen satisfaction survey across the public administration, including central government, local governments, and autonomous institutions. The resolution includes technical considerations for the survey methodology and specific questions covering accuracy, responsiveness, credibility and trust in public services. Based on these technical specifications, each institution is responsible for conducting the survey and informing the MAP of the results collected.

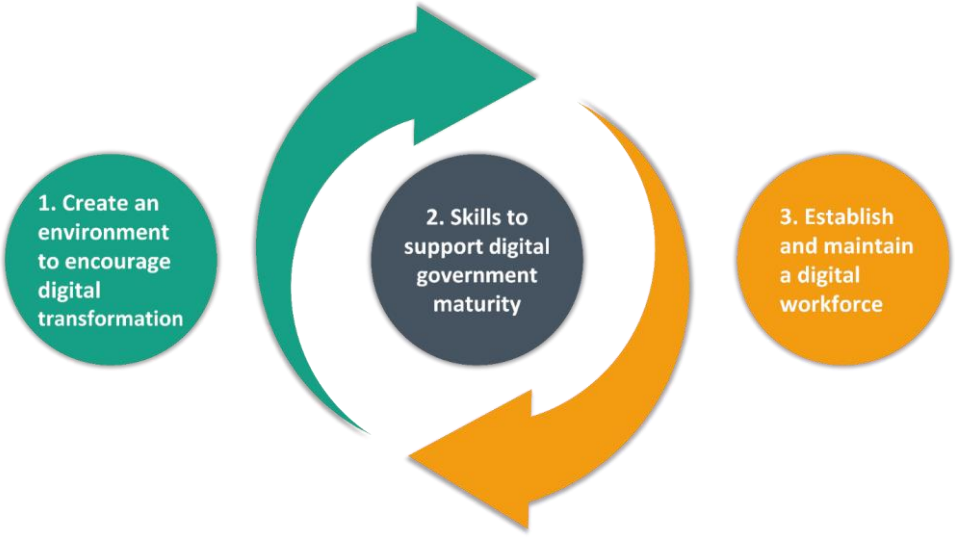
Digital talent and skills in the public sector

Digital talent and skills in the public sector are another critical capability to reap the benefits of digital technologies and secure a sustainable transformation. In the same way that management mechanisms and standardised processes in the planning, implementation, and monitoring of digital projects are needed, governments should develop an agile, user-driven, collaborative, innovative, and adaptable workforce (OECD, 2022[10]). To analyse the capacity of public organisations to acquire and develop digital talent, and equip public servants with the necessary digital skills, the OECD developed the Framework for Digital Talent and Skills in the Public Sector (OECD, 2021[1]). This analytical tool presents three pillars to understand what leaders and public servants need to do to effectively manage digital transformation in the public sector (Figure 2.4):

- *Create the right environment to encourage digital transformation*, which focuses on elements that constitute the environmental conditions that enable digital transformation, including the role of leadership, the learning culture and ways of working.
- *Skills to support digital government maturity,* which focuses on the specific skills needed to support governments in building digital maturity, including foundational skills and specific skills in four areas: digital government user skills, digital government socio-emotional skills, digital government professional skills and digital government leadership skills.
- *Establish and maintain a digital workforce*, which refers to the required elements to retain talent and bring in new people with the needed skills to drive digital transformation in the public sector.

The three pillars entail a thorough understanding of the skills required to drive transformation in the public sector, the importance of setting the leadership, procedures and organisational culture to motivate people by creating an appealing environment, and acknowledging the importance of recruitment, training, and mobility to incentivise and encourage digital talent in the public sector workforce.

Figure 2.4. OECD Framework for Digital Talent and Skills in the Public Sector



Source: OECD (2021[1]), "The OECD Framework for digital talent and skills in the public sector", https://doi.org/10.1787/4e7c3f58-en.

Creating the right environment to encourage digital transformation

Setting an enabling environment is essential for achieving digital government policy goals. Governments need to define a common narrative and a shared vision from executive and leadership positions to steer the public sector workforce towards a digital by-design mindset. Ensuring leaders thoroughly understand the strategic goals of digital government facilitates coordination efforts towards a cultural change within public administration. Given the rapid evolution of digital technology, digital skills need to mature and respond over time (OECD, 2021[1]). This evolving context is reflected in the need of creating safe environments for experimentation, recognising the value of iteration, failure and learning, and encouraging the inclusion of new practices and methods into existing processes.

Despite limited actions to enable experimentation in government digital transformation in LAC, a number of governments are taking action to encourage experimentation in the public sector. For example, in Colombia MINTIC developed the initiative *Catalysts of Innovation*[28] in which public servants are selected for initial training in design thinking to later identify and solve challenges in their respective institutions by leveraging digital tools for the development of prototypes. Colombia has also developed a challenge-based

initiative to build digital capabilities in public sector institutions, including subnational governments (Box 2.4). In the case of Uruguay, AGESIC developed new digital tools and skills through proofs of concept in which officials test tools and approaches in safe environments.[29]

Despite these initiatives, evidence collected reflects that LAC countries still face challenges when encouraging experimentation in the public sector. During interviews, officials from different countries acknowledge a risk-averse culture rooted in the administrative and legalistic culture of public sector institutions, limiting the cultural approach needed for experimentation in the public sector (see also Chapter 4).

Box 2.4. Max Speed Sprint in Colombia

The Digital Government Direction in the MINTIC has developed the Max Speed Sprint initiative (*Iniciativa Máxima Velocidad*) to foster digital capacities in public sector institutions in line with the digital government strategy. The initiative covers all public sector institutions including sub national governments. Institutions are categorised in three levels according to their digital maturity levels based on Colombia's Digital Government Index. Institutions apply through a multidisciplinary team of public officials reflecting specific roles predefined in by the MINTIC. Institutions and the MINTIC define a specific challenge taking into account the institutions needs and existing capacities. The outcomes of the initiative can be specific digital products, including components, services, or solutions, improvement to existing product or service, or specific outcomes such a documents and reports reflecting lessons learned.

Source: MINTIC (2022[11]), *Máxima Velocidad*, https://maximavelocidad.gov.co/804/w3-propertyvalue-396020.html.

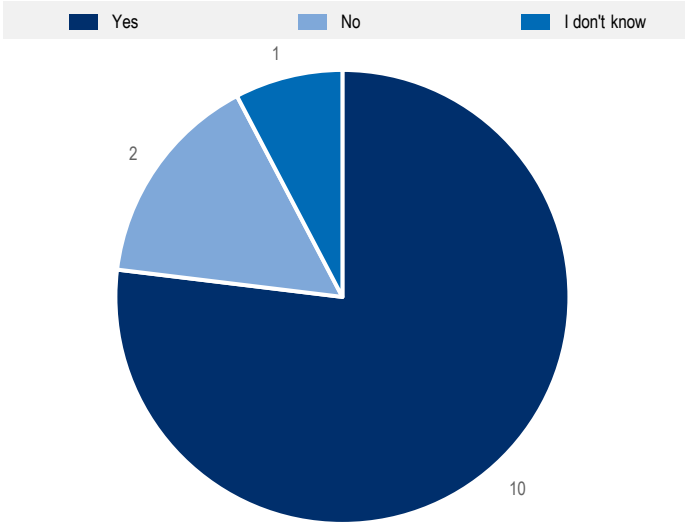
Working practices are critical in creating an environment that enables digital transformation in the public sector. Governments should encourage public officials to work together and collaborate in the delivery of digital projects. Multidisciplinary teams can draw on diverse expertise, including digital and data, to address the inherent complexities of policy making in the digital age (Figure 2.5). Participant countries in this report declared having actions to promote multidisciplinary teams for the delivery of digital projects (Figure 2.6). In Peru, the Ministerial Resolution N° 087-2019-PCM mandates each institution to create a multidisciplinary committee for developing each institutional digital transformation plan including digital, legal and human resource experts.[30] In Uruguay, professionals from different backgrounds and institutions formed the working group that defined the national strategy for open government data.[31] In the context of this report, AGESIC noted how multidisciplinary teams have been essential for the successful implementation of transformational projects in the Regional Government of Canelones.

Figure 2.5. Professions involved in a multidisciplinary service team

Source: OECD (2021[1]), "The OECD Framework for digital talent and skills in the public sector", https://doi.org/10.1787/4e7c3f58-en.

Figure 2.6. Development of multidisciplinary teams in digital government

Survey question: Do public institutions promote using multidisciplinary teams (involving designers, engineers, subject matter experts, content specialists, policy makers, procurement professionals) for delivering digital, data and technology projects?



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Skills to support digital government maturity

Governments should identify, promote and develop the different skill sets to secure a sustainable and organic digital transformation. This including digital government user skills, such as recognising the potential of digital for transformation, understanding users' needs, collaborating openly for iterative delivery, trustworthy use of data and technology, and data-driven government, socio-emotional skills and

digital government professional skills are core skills to support digital government maturity and are required across public sector institutions (OECD, 2021[1]).

Skills frameworks are key policy instruments to enable a shared understanding and standardisation of the skills needed to advance the digital transformation of governments as well as to adopt coherent and systematic approaches to skills development across the public sector workforce. Evidence indicates that nine of the fourteen countries have skills frameworks or strategies at the central or federal government level (Table 2.2). However, not all existing skills frameworks are fully comprehensive to address the digital needs of the public sector, including coverage of different and types of civil servants. For example, Argentina, Brazil, Costa Rica, Panama, Peru and Uruguay reported that their skill frameworks cover the managerial layer within the public administration. On the other hand, only four countries cover staff dedicated to providing services to citizens, while seven countries include specialised teams such as personnel dedicated to digital technologies and data.

Table 2.2. Skills Frameworks in LAC

Is there any skills framework/strategy at the central/federal government? If yes, which civil servants are covered by this framework/strategy?

Country	Skill framework	Management	Line departments	Support staff	Frontline service delivery	Specialised teams (e.g. digital technologies, data, etc.)
Argentina	Yes	✓	✓			
Barbados	No					
Brazil	Yes	✓	✓	✓	✓	✓
Chile	No					
Colombia	Yes		✓			✓
Costa Rica	Yes	✓	✓	✓	✓	✓
Ecuador	Yes					
Jamaica	No					
Mexico	Yes					✓
Panama	Yes	✓	✓			✓
Paraguay	No					
Peru	Yes	✓	✓	✓	✓	✓
Dominican Republic	No					
Uruguay	Yes	✓	✓	✓	✓	✓

Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

LAC governments should develop dedicated digital skills strategies in the public sector, including comprehensive digital skills frameworks to align and enhance training and capacity-building efforts, with a particular focus on subnational governments.

With several LAC governments having digital skills frameworks in place, countries could consider expanding the coverage and comprehensiveness of existing skills frameworks to secure that NDGSs are

accompanied by the needed digital skills in public sector institutions. Particular focus can be given to management, support staff and frontline service delivery. These frameworks can enable the standardisation of recruitment processes, fine-tuning of training programmes and identification of digital capacity gaps in public institutions. In addition, governments could leverage these policy instruments to bridge the digital talent gap in the public sector, encouraging subnational governments to adhere to these frameworks and build coherence across institutions and levels.

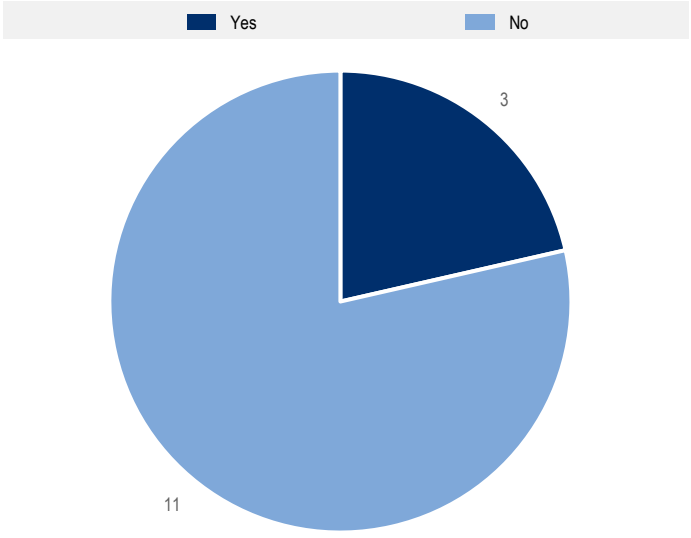
Establish and maintain a digital workforce

In addition to building an enabling environment and defining the required skills to drive digital transformation, it is essential that governments design initiatives to attract, develop and allocate talent across the public sector. Attracting talent for a digital workforce implies investing in recruitment processes and ensuring that recruitment selection is fair and merit-based (OECD, 2021[1]). Developing and maintaining a digital workforce also entails the provision of training and capacity- building for public officials to keep learning while promoting a learning culture that foster transformation, working in a co-ordinated way with relevant civil service authorities.

Evidence collected shows that LAC countries have not been able to develop integrated and whole-of-government approaches to attract and recruit digital talent in the public sector. For example, 12 out of 14 countries under review indicated that improving public servants' digital skills and competencies is a high priority. Nevertheless, only Brazil, Mexico and Peru indicated that digital skills are mandatory when recruiting civil servants in the public sector (Figure 2.7).

Figure 2.7. Digital skills in the recruiting of civil servants

Survey question: Is any type of digital skills mandatory when recruiting/hiring civil servants?



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Allocating talent and skills involves making sure public sector institutions can access the right people for the right roles (OECD, 2021[1]). Regarding the provision of talent across governments, LAC countries have adopted different approaches to identify skills gaps across the public sector. For example, in Brazil the Secretary of Digital Government developed the project Startup.gov.br to profile IT analyst roles, select

personnel with technical expertise and allocate them to specific positions across government. By identifying seven professional profiles, the Secretariat supported public institutions deploying a temporary digital workforce to scale up transformation, avoiding the burdensome procedure for permanent hiring. The programme created an opening for 350 digital professionals to support the delivery of strategic digital projects in the federal government.[32]

Other countries have taken centralised approaches to define job profiles while hiring processes are managed independently by each public sector institution. Such is the case of Colombia through the Resolution 667/2018[33] that creates IT profiles, specifying the requirement for IT roles in the public sector. In Uruguay, AGESIC developed a structured model for assessing digital skills, identifying gaps, and planning capacity building in the public sector. For doing so, the government implemented a study of more than 10 000 public officials, including a dedicated module focusing on public managers.

Remote working schemes are increasingly another important way to attract, develop and maintain the required talent for digital transformation. Governments should acknowledge the current context, where digital transformation experts and professionals can access more flexible jobs and non-monetary incentives such as remote working. The adoption of flexible practices impacts on the effectiveness of the public service and its ability to attract talent (OECD, 2023[12]). The digital ecosystem, particularly in the private sector, has been characterised by promoting these perks for more appealing conditions to attract talent to their organisations.

LAC governments are adopting different approaches to embed remote working practices. The COVID-19 pandemic played a critical role for governments to regulate this work modality, with most countries adopting new regulations after the outbreak in March 2020. Nevertheless, governments such as Chile, Costa Rica and Peru had implemented these approaches before the outbreak, building on this experience and maturity to enable the shift to remote government operations during the health crisis in early 2020. Countries have also adjusted teleworking regulations in the aftermath of the pandemic building on the lessons during the respond to the crisis.

Between 2017 and 2018, Chile implemented a remote work pilot programme at the Intellectual and Industrial Property Institute (*Instituto Nacional de Propiedad Industrial* – INAPI), which enabled the remote working system for specific functions within this institution. The pilot programme allowed up to 10% of this agency's workforce to perform its functions remotely. Even though there were previous teleworking experiences in the Chilean public sector, this was the first institutionalised remote working example in the country. In 2019, Costa Rica issued Law No. 9738 to regulate remote working.[34] [35] This law was built on lessons from the implementation of the decree N° 34704 in 2023[36] to promote teleworking in public institutions. The order set working conditions and mandates each institution to develop teleworking programmes describing the specific jobs subject to teleworking schemes, the working conditions, the total amount of employees entitled to this modality and the selection procedure. In the case of Peru, in 2013the government issued the Law Nº 30.036, which regulates remote working in the private and public sectors, providing a common understanding of teleworking arrangements and setting rules and rights for employers and employees.

The unprecedented disruption unleashed in March 2020 pushed governments to adopt remote work in the public sector to secure service continuity while keeping employees safe. LAC governments were not the exception, adjusting regulations, and legal frameworks and implementing concrete policies to facilitate the adoption of teleworking schemes in the public sector. For example, in March 2020, the Undersecretary of Public Employment of Argentina issued a resolution enabling teleworking in public institutions and a second decree with the provision regulating remote working in the public sector. In April 2020, the National Office for Public Employment published a set of recommendations for public employers on remote working and wellbeing.[37] Similarly, the government implemented flexible teleworking arrangements, including hybrid models that combine remote and on-site work. In April 2020 Bolivia published the decree N4218 regulating teleworking in the private and public sector. In 2020, the government of Panama published a

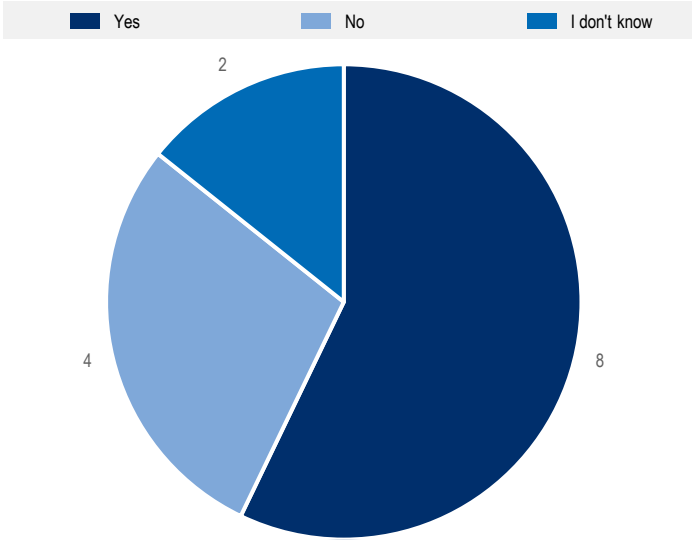
decree enabling public sector employees to work remotely on a full-time or part-time basis for suitable posts.

In the aftermath of the pandemic, governments have adapted remote working regulations and developed new approaches for the upcoming years. For example, in May 2022, the Government of Brazil issued a decree regulating remote working and framing it under the performance management programmes.[38] In December 2022, Chile updated the teleworking regulation, including accountability mechanisms, security considerations and the right to disconnect.[39] In July 2022, the Government of Costa Rica issued a presidential guideline to foster teleworking in the public sector, calling subnational governments to also adopt these principles.[40] The Ministry of Public Administration in the Dominican Republic issued the resolution 074 in March 2022, mandating the return to on-site working for all officials in the public administration while mandating each institution to implement dedicated teleworking agreements. In April 2021, the National Civil Service Office in Uruguay conducted a survey to collect data on the adoption of remote working in the public sector during the COVID sanitary emergency. The results showed relevant gaps across institutions and job families.[41]

Developing and maintaining the skills of a digital workforce implies building in-house capacities to avoid dependencies on external third parties (OECD, 2021[1]). In addition to formal training and capacity building, a digital workforce can also benefit from informal and flexible spaces such as the creation of communities of practices, professional networks, and mentoring programmes. Countries in the region have created and promoted the use of communities of practice: eight out of fourteen countries reported having developed some type of communities of practice, networks or mentoring programmes related to data and digital in the public sector(Figure 2.8).

Figure 2.8. Data and digital communities of practice in Latin America and the Caribbean

Survey question: Are there any specific initiatives in place to foster communities of practice, providing networking, mentoring, and developing skills and competencies for data and digitalisation for the public sector?



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

In Chile, the Network of Public Innovators run by the Government Innovation Lab brings together more than 24 000 members, including public servants, civil society and academia, creating a community of practice where members can connect, learn and share experiences on public innovation and public sector

transformation. In addition, the Civil Service has implemented a mentoring programme for digital leaders [42] in which younger and experienced officials partner to close the digital divide in the public workforce. In Colombia, MINTIC implements knowledge and experience-sharing communities such as CIOs and data science networks to develop strategic communities concerning data issues. In Panama, AIG has implemented collaboration and learning communities for public officials fostering peer learning and knowledge sharing in the public sector workforce. In Uruguay, AGESIC has developed a community of practice on interoperability, allowing members to work collaboratively to address common challenges and build shared knowledge (see Box 2.5). These processes enable learning and favour the transformation of paradigms, generating new visions and knowledge.

Box 2.5. AGESIC's Knowledge Centre in Uruguay

AGESIC created the Knowledge Centre (*Centro de Conocimiento*) to foster collaboration and professional development of civil servants by generating exchange opportunities and discussions within the public sector work, promoting training, research, and innovation. The Centre's goals include promoting networking, creating communities of practice, disseminating, and promoting experiences, knowledge and learning, communicating existing resources, policies and standards. For doing so, the Centre organises forums and consultations, elaborates document, tutorial, and guides, and fosters knowledge sharing in the public sector.

Source: Based on AGESIC (n.d.[13]), *¿Qué es un Centro de Conocimiento?*, https://centrodeconocimiento.AGESIC.gub.uy/sobre-el-centro.

Evidence shows that training programmes are one of the main lines of action regarding developing digital skills through training and capacity building for public officials at central and sub-national levels. Despite these efforts, the lack of clarity on the skills required, reflected in absent or partially developed digital skills frameworks, limits the effectiveness and sustainability of digital skills development in LAC public sectors.

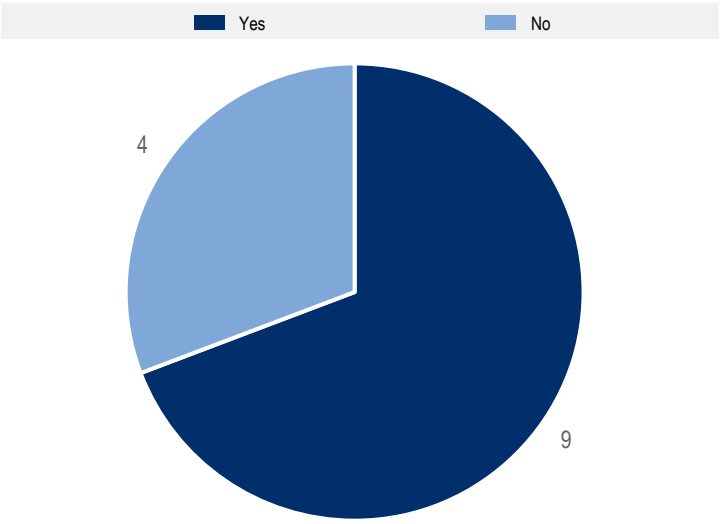
For example, Argentina's National Institution of Public Administration[43] provides training and knowledge management for civil servants. INAP priorities include digital capacities, technologies, and soft skills for change management. INAP also provides Virtual courses for public officials in central and subnational governments. Similarly, the National School of Public Administration in Brazil has developed dedicated courses on digital capabilities, including user experience, quality assurance methods, open data, and service assessment.[44] In Chile, the Civil Service Campus delivers digital training for public services through short modules on digital transformation.[45]

In Colombia, MINTIC and the Civil Service provide training sessions and certifications for public officials on digital technologies, digital transformation and innovation, including diplomas on interoperability in the public sector. In Ecuador, the MINTEL signed an agreement with COURSERA to deliver training to the public sector reaching more than 7 000 officials. Besides training, MINTEL has carried out seminars and dissemination events communicating officials on digital government policies. In Panama, the Institute for Technology and Innovation (ITI) within the AIG, provides training for the public sector including digital skills. AIG works together with ITI on strategic planning capacity building. In addition, AIG provides workshops for public sector institutions on change management and digital transformation.

The essential role that subnational governments play in service delivery makes it imperative to build capacities for digital transformation at these levels of public administration. To address these challenges, some LAC governments have focused on providing training for local and regional government officials and tapped the use of distance learning systems to train and develop local governments' workforce skills (Figure 2.9).

Figure 2.9. Developing skills in subnational governments in Latin America and the Caribbean

Survey question: Is there any skills framework/strategy that includes sub-national/local governments?



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

In Brazil, ENAP implemented the Government Virtual School, providing online modules for public officials, including one on digital government. All modules are available for federal and local governments, and some topics focus on sub-national governments. The contents related to digital government were developed in collaboration with the Secretary of Digital Government in collaboration with civil society organisations. In Chile, the Training Academy created in 2012 under the Undersecretariat for Regional Development (SUBDERE), provides training programmes for public officials in regional and local governments. In collaboration with Universities, the Academy provides scholarships, certifications, and training modules for officials in subnational governments of the country. The courses include innovation, digital transformation and change management, among other public administration-related topics. In the Dominican Republic, the National Institute for Public Administration, under the Ministry of Public Administration, provides training for public officials, including innovation management, change management and use of ICT in the public sector. In addition, the INAP has elaborated dedicated modules for local government, including innovation in local administrations. In Uruguay, AGESIC and the National School of Public Administration, under the National Office for Civil Service, have created multiple virtual training programmes for public officials in central and subnational governments.

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3 Building data-driven public sectors for regional data integration

This chapter takes a glance at the state of data-driven public sectors at the national level in Latin America and the Caribbean (LAC). It underlines policy achievements and key challenges in this area, with a foresight vision of the opportunities that can help to build regional data integration in the long term.

A brief overview of the OECD work on data-driven public sector

The OECD has developed a set of standard-setting instruments, analytical frameworks, and policy measurement tools to support member and partner countries in their efforts to advance towards greater digital and data maturity. For the analysis in this chapter, relevant OECD work includes:

- The OECD Recommendations of the Council on **Digital Government Strategies** (2014[1]), on **Artificial Intelligence** (2019[2]) and on **Enhancing Access to and Sharing of Data** (2021[3]), which provide a set of guidelines government adherents can use to inform policy decisions. Thus, further paving the way to move towards coherent and interoperable data governance arrangements across sectors and borders, and human-centred and trustworthy data-intensive technology applications.
- The **OECD Digital Government Policy Framework (DGPF)** (OECD, 2020[4]), and the **Digital Government Index (DGI)** (OECD, 2020[5])which cover and benchmark the key policy aspects governments need to advance towards digital government maturity. The data-driven public sector dimension of the DGPF and the DGI pays particular attention to the data governance arrangements governments and public bodies could take into consideration when deploying data-driven projects and initiatives in the public sector.
- The **OECD framework for data-driven public sector** and its related **data governance model** (OECD, 2019[6]), which provide a more in-depth view of foundational data governance elements; the application of data for public service design and delivery, policy and decision making; and trust, including data protection, privacy, and ethics.
- The **Open, Useful and Re-usable data (OURdata) Index**, which benchmarks open government data policies and their implementation across OECD member and partner countries (OECD, 2020[7]).
- The **Good Practice Principles for Data Ethics in the Public Sector** (OECD, 2021[8]) and its implementation strategy which provide action-oriented guidelines to countries to operationalise data ethics within the public sector in line with crosscutting values and fundamental rights.

Analytical approach

In Latin American and the Caribbean (LAC), decisions made today on data governance arrangements at the national level, including in the public sector, can either help or obstruct data integration and cross-border government-to-government data flows in the future. Building the foundations for regional governance for data is key to advance in areas such as cross-border public service design and delivery, shared services between governments and to build trustworthy data infrastructures to inform data-intensive technologies, including Artificial Intelligence (AI).

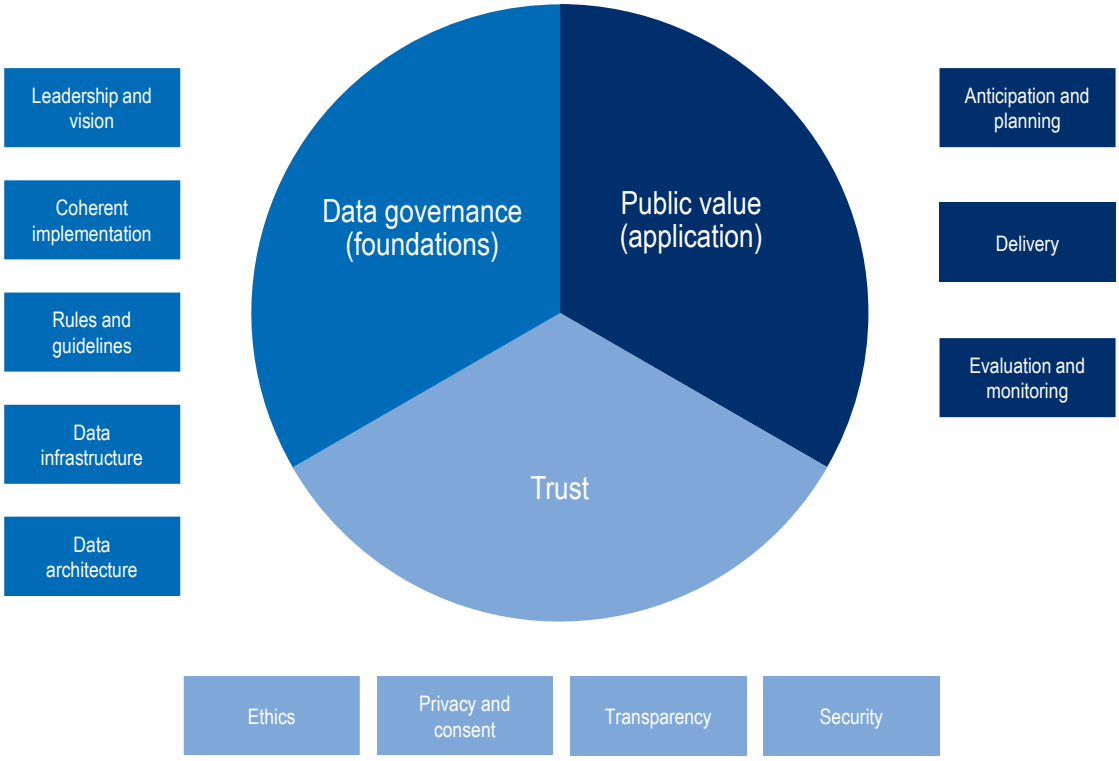
At the same time, these actions can increase the available value base of digital public goods (e.g., open data, open standards, and open-source data infrastructures) in the region which in return can contribute to economic growth and digital innovation and to advance agendas such as the fight against corruption, climate change, democracy and AI at a regional scale.

The assessment and analysis presented in this chapter aims at raising the most current issues on data-driven public sectors in LAC as a means to provide proposals for action that can help to advance regional government-to-government data integration in the years to come.

For this purpose, this chapter follows the OECD model for data-driven public sector (Figure 3.1) and the OECD framework for data governance in the public sector (Figure 3.2) to assess the state of data-driven public sectors in LAC and identify opportunities for joint policy action in the region. In terms of *data governance*,[1] this chapter unfolds the components of the OECD model for data governance (Figure 3.1)

and follows a bottom-up analytical approach. Rather than starting with the strategic and tactical aspects of data governance (e.g., strategy, leadership, regulation) it starts by presenting observed practices at the technical level (e.g., interoperability, standards, data infrastructures) as described in the delivery layer of the data governance framework. It presents relevant practices implemented by governments and public bodies in LAC to provide the reader with the overall regional context in terms of policy achievements to date and challenges ahead.

Figure 3.1. OECD model for a data-driven public sector



Source: OECD (2019[6]), *The Path to Becoming a Data-Driven Public Sector*, https://doi.org/10.1787/059814a7-en.

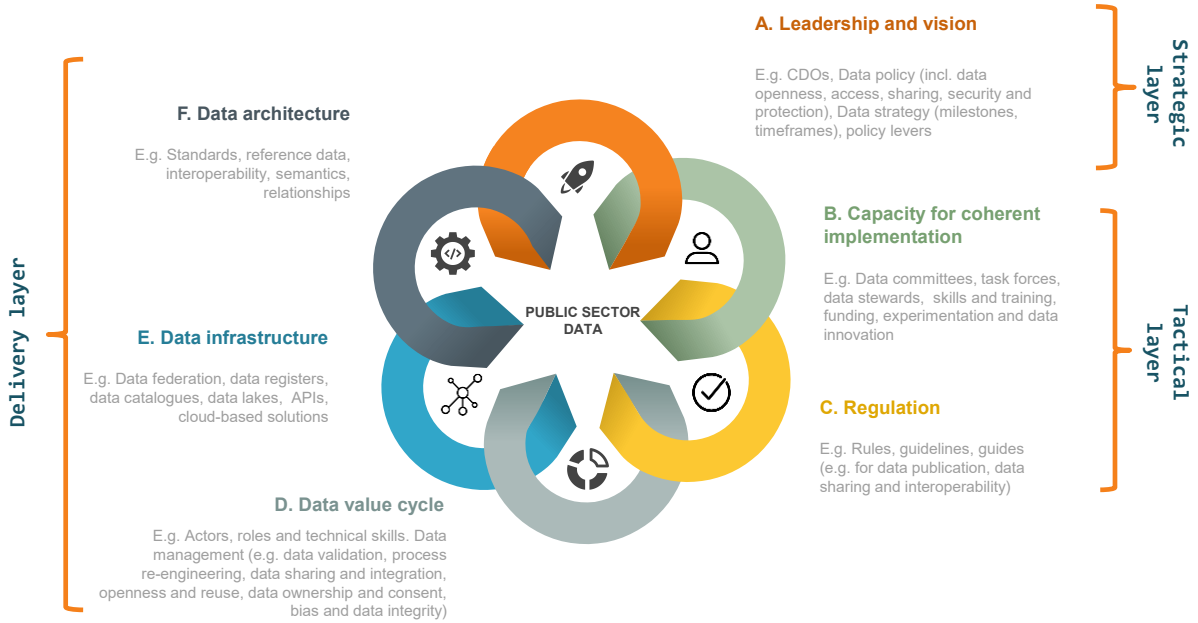
It also pays particular attention to open government data policies and initiatives given the role of open data as a key element of the data value cycle and the value of open data as a digital public good for good governance, economic growth, and the digital economy.

In terms of *trust*, the chapter discusses the topics of personal data protection and data ethics throughout the chapter whenever relevant, namely in the section on regulatory, policy and institutional frameworks, and the correspondent final sections. The chapter finalises by providing a short non-comprehensive overview of identified *application* cases from interviews and the survey administered for the purpose of this report.

This chapter does not go into a detailed analysis of all policy issues presented for those would require a deeper level of understanding of every national context in the form of a dedicated national policy review. It also provides an updated and deeper level of analysis of that presented in the 2022 Report on Artificial Intelligence in Latin America and the Caribbean (OECD/CAF, 2022[9]) in terms of data governance in the public sector. Issues related to the application of data-intensive technologies in the public sector are discussed in Chapter 5 on digital innovation and are also analysed in-depth in the aforementioned

OECD/CAF report on AI in LAC. Issues related to digital literacy and skills in the public sector, including on data, are addressed in Chapter 2 on public sector capacities, and therefore not covered in this chapter.

Figure 3.2. Data governance in the public sector



Source: OECD (2019[6]), *The Path to Becoming a Data-Driven Public Sector*, https://doi.org/10.1787/059814a7-en.

Lastly, evidence, information and data presented in this chapter are based on the surveys and interviews carried-out for the purpose of this report; data collected through previous and on-going policy measurement exercises for the calculation of the OECD Digital Government Index and the OECD Open, Useful, Re-sable data (OURdata) Index; previous policy country reviews and thematic reports on digital government and data in OECD countries and in the LAC region; and additional desk research.

Strengthening data interoperability and infrastructure

Overview

The achievement of user- and data-driven services and policies in the public sector implies advancing in the implementation of digital government principles such as *once-only,* streamlining of data access and sharing practices within the public sector and achieving data integration.

Once only and data integration are core to digital government as they reduce the burden on citizens and businesses by preventing them to provide the same information and data multiple times to public bodies. This triggers public efficiency and productivity as multiple organisations can access and retrieve data (e.g., such as registers) from a one single yet shared data source, reducing data fragmentation, eliminating data siloes, increasing data consistency and integrity across multiple data sources, and laying the data foundations for the application of data-intensive technologies such as Artificial Intelligence (AI) (see Chapter 5).

At a technical level, achieving *once only* and data integration, requires the availability - and common use - of *shared* digital public infrastructure such as interoperability buses and data centres as the highways for data flow (state-owned or provided by third parties); and the generation, collection, access to and use of reliable data that should be fed into those highways.

The mapping of data access and sharing processes, including the actors/roles involved across the various stages of the value cycle, is also critical to identify areas of opportunity and improve how actors interact and exchange data assets. Likewise, the availability, application and enforcement of data standards is critical to generate reliable data that can be accessed, shared, used, and re-used in later stages.

Evidence from surveys and interviews carried out in the context of this report show that governments in LAC are not oblivious to the importance of data integration and interoperability within the public sector, with the COVID-19 acting a wake-up call to further advance in these areas:

- Argentina: The central government has invested significant efforts to improve data interoperability within the public sector. Initiatives to develop a data interoperability bus for the public sector materialised in INTEROPER.AR – a platform connecting registers from different public bodies in charge of areas such as social security, justice, and the population register (OECD, 2019[10]).
- Brazil**:** The Secretary of Digital Government at the Ministry of Management and Innovation in Public Services has invested resources to promote real-time data access and sharing within the public sector through Application Programming Interfaces (APIs). These efforts aim at streamlining data flows within the Brazilian public sector through the CONECTA platform,[2] and to facilitate data analysis, access and sharing and improve the delivery of user-driven public services.
- Chile**:** Since the start of the COVID-19 pandemic, Chile has seen progress in terms of data access and sharing within the public sector. It advanced in streamlining the approval of data sharing agreements among public sector organisations and the National Service of Civil Registry and Identification, with the availability of new infrastructure and efforts on digital identity allowing for these changes to be implemented.
- Colombia**:** The country has taken important steps to scale up the importance of interoperability beyond technical aspects – as shown in the Interoperability Framework[3] developed by the Ministry of Information and Communication Technologies (MINTIC). Other efforts include the 2022 National Data Infrastructure Plan developed by MINTIC, the National Planning Department (DNP) and the Office of the President.[4]
- Dominican Republic**:** The Normative Framework for ICT and E-government[5] published in 2013, includes normative and implementation guidance on interoperability (NORTIC A4) and highlights the relevance of interoperability for public service design and delivery (NORTIC A5). Other efforts include the creation of the National Data Centre, as observed also in other countries, and the piloting of the national interoperability framework in social security.
- Ecuador**:** The Ministry of Telecommunications and Information Society (MINTEL), as responsible body for data interoperability, provides guidance to public organisations in terms of interoperability and integration, from data generation to data consumption, so that data can be shared in the State's interoperability bus. Also, in 2010, Ecuador**,** created a National System of Public Data Registers by law[6] and set up an institutional structure (including the creation of the National Direction of Public Data Registers) to guide, co-ordinate and control the access, sharing, use and protection of data within and across the public sector. By 2020, the National System of Public Data Registers centralised data from 300 public sector organisations, and Ecuador was also working on creating a National Data Centre. These efforts have been led by the MINTEL.
- Mexico**:** The platform InteroperaMX was an initiative that aimed to advance interoperability within the public sector, but it is not clear if this initiative is still current. Interoperability is also explored in the context of the Transparency, Open Government and Open Data Policy for the Federal Public Administration (2021-24)[7]..

- Panama**:** Interoperability efforts are under the responsibility of the National Authority for Government Innovation (AIG). Yet, these efforts are still incipient thus currently focusing on increasing the number of public bodies connected to the interoperability bus. By 2021, the bus comprised a total of 10 public bodies. This work responds to the legal mandates created by Law 144 (2020), namely to those provisions touching upon interoperability, *once-only* and citizens´ consent.[8]
- Paraguay**:** Paraguay´s Information Exchange System[9] connects data registers across different areas (car register, public safety, and civil register) and helps addressing data discrepancies and inconsistencies resulting from the availability of multiple data records (e.g., personal or sensitive data) across the public sector. These efforts are led by the Ministry of Telecommunication and Information (MITIC), and draw upon the interoperability initiatives implemented by the former National Secretariat of Information and Communication Technologies (SENATIC).
- Peru**:** By 2020, Peru - under the leadership of the Secretariat of Digital Government (SEGDI) - was also working on the project to set-up a National Data Centre, and on bringing together the National Interoperability Platform[10] (NIP) and the open data platforms[11] under one single tool. Also, by 2020, Peru reported having connected more than 300 public organisations to the NIP including those in charge of core data registers and justice.
- Uruguay: the work of the Agency for Electronic Government and the Information and Knowledge Society (AGESIC) stands out in the region by working on improving interoperability for more than 10 years. AGESIC Interoperability Platform[12] is at the core of Uruguay´s digital government strategy, and the platform stands as a foundational tool for public service design and delivery, public sector integration e.g., through web services, and digital security in line with predefined security standards and protocols.

Challenges

Despite on-going achievements, there is a tension between data centralisation vs. data federation.

In general terms, countries in the region are **at cross-roads to decide between greater data centralisation and data federation**. Whereas broader national governance arrangements (e.g., unitarian vs. federal countries) and diverse levels of digital government maturity can influence and define the way LAC countries address data governance in the public sector, most countries report the need for greater data centralisation but only a few highlight the benefits of decentralised data management or enforcing data standards and guidelines.

Data centralisation remains a core priority in most countries, which puts additional pressure on digital government and data bodies and somehow diverts the attention and responsibility from public bodies as data holders.

As LAC countries build greater data maturity in the public sector, digital government and data bodies should remain as providers of strategic, tactical and technical guidance and shared tools (e.g. interoperability buses, open source tools) and enforce their use and application. Yet, achieving data maturity requires data holders in the public sector (in particular those in charge of data registers and authoritative data sources) to be given greater responsibility and accountability in relation to data generation, distribution and consumption.

Emerging concepts such as *data meshing* and EU-driven actions (including data spaces) are starting to permeate the data ecosystem. Yet, moving from concepts to practice within the public sector will require a change of paradigm in terms of how LAC countries understand a data-driven public sector - one where the governance of data is shared and distributed with equal levels of responsibility of all players involved.

Data legacies and outdated data generation processes could be given further attention. Moving from paper-based data to digital data remain also a priority, including at the local level.

One other challenge which is not endemic to the LAC region is addressing the still persistent generation of data in analogue form rather **being created digital by default -** as reported by Paraguay. This specific issue has implications at different levels. One is related to how the data is generated and by whom.

For instance, structured data generated by municipalities and collected by the central government can be originally generated on paper, which requires data being then inputted in digital platforms at later stages, thus delaying processes and opening further room for human error. Such challenges can be observed for instance in relation to data assets such as civil registers managed at the local level but collected at the central level.

Yet, addressing these challenges would call for actions related to foundational aspects in terms of local capacity e.g., the availability or access to hardware and connectivity in remote and rural areas. In this respect, LAC countries should also acknowledge that digital inclusion has direct impact on how data registers are or are not generated at the very source (e.g., municipalities or local civil registers).

Data access and sharing is still restricted by time-consuming approvals, burdensome inter-institutional processes, and institutional resistance.

Streamlining data access and sharing processes and breaking down data siloes might also benefit from paying further attention to **data relationships** (e.g., among data registers). This would also require **mapping data access and sharing processes** to understand a) what data public bodies exchange, b) through which processes, c) the barriers blocking data flows, and d) how shared data infrastructures such as interoperability buses could help to address existing challenges.

For instance, Chile reports approval times of data sharing agreements of up to 6 months. This does not have only an impact on data flows, but on the services (internal or public) that rely on these data. Better understanding the data relationships of core data registers and other relevant datasets could help to have a better overview of the problem and define priorities with a focus on improving public sector productivity.

Some countries show a strong focus on technical interoperability solutions and platforms, but semantic interoperability remain a challenge. The value of data as a service is not widespread.

Despite the ambition to advance data interoperability in the region, leading countries such as Uruguay and Colombia still report remaining challenges in this area. Uruguay, a country with great achievements in place in terms of technical data interoperability, acknowledge the importance of **improving semantic**

interoperability within the public sector. In Colombia**,** the Interoperability Framework[13] has been in place for almost a decade but according to information provided by the Colombian government, less than half of public bodies have advanced in terms of documenting data assets or in terms of implementing a reference data architecture useful to build the basis to build digital solutions within the public sector.

Defining and mainstreaming **common data classification and categorisation schemes and definitions** (e.g., sensitive/non-sensitive data, personal data, confidential data) can also help public officials and public bodies to make better and faster decisions in terms of data access and sharing. For instance, to improve data governance in the public sector, Chile is currently working closely with public bodies to help them develop data catalogues they can use to differentiate between sensitive and non-sensitive data and make decisions in terms of open data or the sharing of data through web services.

It is also essential to understand interoperability beyond data. In this respect, countries also face the issue of addressing the **proliferation of multiple data access and sharing platforms in the public sector and the interoperability among those**. For instance, In Ecuador**,** the availability of different interoperability platforms requires performing legal and technical analysis to decide which platform institutions should use to exchange data once a request for data access is filed. This can have a severe impact on **data discoverability** in the public sector for data, leading to public bodies requesting connections to multiple platforms rather than interconnecting the data directly through web services.

Making **data-as-a-service** (DaaS) relevant is also critical to advance efforts. Policymakers in Argentina and Peru stress the relevance of DaaS for the digital transformation of the public sector. Other countries carry-out actions which follow such an approach *de facto*, with semantics, metadata, standards, inventories, and web services being among technical topics most referenced during interviews carried out for the purpose of this report. Yet, DaaS is still an abstract and somehow diffuse concept in the mind of digital government officials and those outside digital government and data bodies. Besides conceptual discussions, leading bodies would benefit from investing further efforts to move away from a data discourse that relates to tacit value creation in order to invest further efforts **to make potential and delivered impact explicit and measurable** – in particular when the efficient delivery of public services is at stake.

> Increasing knowledge on available data assets, and their quality requires building greater data capacity within the public sector.

Also, advancing data governance and management efforts at the technical level would require investing more efforts to assess the current state of data assets in the public sector, including in terms of data maturity and available data assets.

Running data maturity assessments as well as promoting and enforcing the availability of data catalogues is critical to **increase the level of knowledge about available datasets** to improve how data is generated by default, in what formats, under which rules, and through which platforms can be shared or accessed.

> Further investment on digital identity tools is fundamental to enable a better governance of personal data, but the implementation of new data governance mechanisms for data access and sharing would need further exploration.

Governments' collection, processing and use data is not restricted to internal data sources e.g., data registers, administrative data, but to data generated by citizens, businesses and through platforms such as social media or IoT devices.

As presented in the 2019 OECD report *The Path to becoming a Data-driven public sector*, "common data governance frameworks contribute to the effective implementation of cross-sector data collection, sharing and/or accessing initiatives" (OECD, 2019[6]). At the technical level, these requires setting shared and trustworthy tools for data access and sharing to better govern and shared data for a common purpose.

At an early stage, further investments on digital identity and authentication mechanisms and other tools such as citizens' folders would benefit the operationalisation of transparency and consent in the use of citizens' personal data and of those sensitive data from businesses (see section on Trust). Yet, in the mid- and long-term, data subjects will require access to new arrangement and mechanisms to transform them from passive to active players in the data governance field. Emerging mechanisms to be explored include tools such as data trusts[14] and data collaboratives.[15]

> The widespread use of shared tools for data access and sharing at the national level (e.g., open source) and strategic data harmonization can help to build the technical foundations towards digital and data integration at the regional level.

As noted in the OECD *Digital Government Review of Argentina* (2019[10]) country members of trade blocks such as that from the MERCOSUR are taking common steps to advance a common digital agenda[16] in areas such as digital identity, personal data protection, open data, and the delivery of cross-border services - all of which require solid data governance foundations at the technical, tactical and strategic level.

Other forums advancing in these areas include the Working Groups on Interoperability[17] and on Open Data[18] of the E-Government Network of Latin American and the Caribbean (GEALC), and the activities of the Digital Nations (D9) which includes Mexico and Uruguay.

With this context in mind, LAC countries should understand that actions taken today would determine the feasibility of achieving regional digital and data integration in the future.

For instance, Chile, Colombia, Dominican Republic and Peru are following international lead by exploring the implementation of Estonia´s X-Road platform and its open-source code. Whereas these actions aim at advancing greater data interoperability and improving data flows within the public sector, the adoption of common and open-source data interoperability tools at the national level should be understood as a starting point to advance data access and sharing across borders in the region. Current gaps in terms of data interoperability platforms in specific countries should therefore be understood as an opportunity to take a leapfrog with a mind-set on regional integration by design.

Also, self-assessing efforts at the national level *vis-à-vis* well-grounded interoperability principles and frameworks such as the **European Interoperability Framework**[19] (EIF) would help surface existing interoperability gaps at the national level, including those specific to semantic interoperability. Only Costa Rica reported using the European Interoperability Framework[20] (EIF) to advance its public sector interoperability efforts based on best international practices and principles.[21]

Steering data policy change

Creating data-driven public sectors that are coherent and trustworthy require setting an enabling environment around data governance in the public sector. Such an environment can take the form of regulatory frameworks, co-ordination and collaboration mechanisms, advisory bodies, and formal institutional networks of practitioners in the public sector.

Regulatory frameworks

Overview

The scope of hard and soft regulatory instruments related to data governance and data access and sharing can be quite diverse. These can range from regulations on data interoperability within the public sector and a paperless government to guidelines on open government data, data anonymisation, privacy and personal data protection. Box 3.1 shows a non-comprehensive list of relevant regulatory developments on data governance at the regional level.

Box 3.1. Relevant regulatory instruments on data in LAC

Brazil

- 2021 Law 14.129: Digital Government Law (http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2021/lei/L14129.htm)
- 2019 Law 13.853 creating the National Data Protection Authority (https://www.planalto.gov.br/ccivil_03/_ato2019-2022/2019/lei/l13853.htm)
- 2019 Decree on Data sharing within the public sector, the Citizen Register and the Data Governance Central Committee (http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2019/decreto/D10046.htm)
- 2019 Decree on the Open Data Policy (https://presrepublica.jusbrasil.com.br/legislacao/729983345/decreto-9903-19)
- 2019 Updated Interoperability Standards (ePING) (https://www.gov.br/governodigital/pt-br/governanca-de-dados/padroes-de-interoperabilidade)
- 2018 General Law 13.709 on Data Protection (https://www.gov.br/cidadania/pt-br/acesso-a-informacao/lgpd)
- 2011 Law 12.527 on Access to Information (http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2011/Lei/L12527.htm)

Chile

- 2019 Digital Transformation Law (21,180) (https://digital.gob.cl/transformacion-digital/ley-de-transformacion-digital/)
- 2014 Decree 14: E-documentation and e-signature (https://www.bcn.cl/leychile/navegar?idNorma=1059778&idParte=)
- 2012 Presidential Directive on Open Government (incl. open data) (https://transparenciaactiva.presidencia.cl/Otros%20Antecedentes/Gab%20Pres.%20N%C2%BA%20005.pdf)
- 1999 Law 19628 on the Protection of Private Life.(https://www.bcn.cl/leychile/navegar?idNorma=141599)

Colombia

- 2022 Decree 1389: General Guidelines on the Governance of the Data Infrastructure and the creation of the Governance Model of the Data Infrastructure (https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=191409)
- 2022 Ruling 460: National Data Infrastructure Plan
- 2021 Strategic Open Data Roadmap for the Colombian State (https://herramientas.datos.gov.co/sites/default/files/2021-07/Hoja%20de%20Ruta%20Datos%20Abiertos%20Estrat%C3%A9gicos%202021_1.pdf)
- 2020 Decree 620: General guidelines on the use and operation of digital services (https://www.suin-juriscol.gov.co/viewDocument.asp?id=30039155) (includes principles on data portability, consent, privacy and personal data protection)
- 2019 Interoperability Framework (http://lenguaje.mintic.gov.co/sites/default/files/archivos/marco_de_interoperabilidad_para_gobierno_digital.pdf)

- 2015 Ruling 3564, including guidelines on open data
- 2014 Law 1712: Transparency and Access to National Public Information Law, including provisions on open data
- 2013 Decree 1377 on data protection (https://www.suin-juriscol.gov.co/viewDocument.asp?id=1276081)
- 2012 Law 1581 on personal data protection (https://www.suin-uriscol.gov.co/viewDocument.asp?ruta=Leyes/1684507#:~:text=La%20presente%20ley%20tiene%20por,el%20art%C3%ADculo%2015%20de%20la)
- 2008 Law 1266 on Habeas data and data protection. (https://www.suin-juriscol.gov.co/viewDocument.asp?ruta=Leyes/1676616)

Costa Rica

- (*Under development*) Guide on open data publication
- 2018 Executive Decree 41190 on the Reform of Executive Decrees No. 38994 "Promotion of Open Government in Public Administration and Creation of the National Commission for Open Government", No. 40199, and Decree No. 39372 (http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=86815&nValor3=112831&strTipM=TC)
- 2017 Decree 40200 on Transparency and Access to Public Information (http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=84166&nValor3=108486&strTipM=TC)
- 2017 Decree 40199 on Open Data publication (http://www.pgrweb.go.cr/scij/Busqueda/Normativa/normas/nrm_texto_completo.aspx?nValor1=1&nValor2=84004)
- 2012 Regulations of the Law on Personal Data Protection (http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?nValor1=1&nValor2=74352)
- 2011 Law 8968 on Personal Data Protection.(http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=70975&nValor3=85989#:~:text=Ninguna%20persona%20estar%C3%A1%20obligada%20a,la%20orientaci%C3%B3n%20sexual%2C%20entre%20otros)

Dominican Republic

- (*Under development*) Open Data Policy
- 2014 General Law No. 200-04 on the Unrestricted Access to Public Information (https://presidencia.gob.do/sites/default/files/statics/transparencia/marco-legal/leyes/Ley-200-04.pdf)
- 2013-2020 Normative Framework on ICT and e-Government (https://ogtic.gob.do/wp-content/uploads/2019/02/Marco-Normativo-de-TIC-y-Gobierno-Electr%C3%B3nico-en-Rep%C3%BAblica-Dominicana.pdf), including the Norms on open data publication (NORTIC A3), Interoperability (NORTIC A4), and Security (NORTIC A7).

2013 Law No. 172-13 on Personal Data Protection.(https://indotel.gob.do/media/6200/ley_172_13.pdf)

Ecuador

- (*Under development*) Open Data Guide
- 2021 Organic Law on Personal Data Protection
- 2020 Ministerial Agreement 011 on the Open Data Policy (https://www.gobiernoelectronico.gob.ec/wp-content/uploads/2020/04/Acuerdo-Poli%CC%81tica-Datos-Abiertos-17.04.20-v4-signed.pdf)
- 2019 Norm for the Creation of the Interoperability Services Platform's Federation (https://www.gobiernoelectronico.gob.ec/wp-content/uploads/2019/11/Federaci%C3%B3n-de-Buses.pdf)
- 2012 Decree 1384: Public Sector Interoperability (https://www.gobiernoelectronico.gob.ec/wp-content/uploads/2018/10/Decreto-1384-Interoperabilidad.pdf)
- 2010 Law on the National System of Public Data Registers (https://www.telecomunicaciones.gob.ec/wp-content/uploads/2016/04/Ley-Organica-del-Sistema-Nacional-de-Registro-de-Datos-Publicos.pdf)
- 2004 Law on the Access to Public Sector Information.(https://observatoriop10.cepal.org/sites/default/files/documents/lotaip.pdf)

Mexico

- 2021 Agreement on the policies and provisions promoting the use and exploitation of information, digital government, information and communication technologies, and information security in the Federal Public Administration (https://www.dof.gob.mx/nota_detalle.php?codigo=5628885&fecha=06/09/2021#gsc.tab=0).
- 2021 Transparency, Open Government and Open Data Policy for the Federal Public Administration (2021-24) (https://funcionpublica.gob.mx/web/transparencia/Politica_de_Transparencia_Gobierno_Abierto_y_Datos_Abiertos_ de_la_APF_2021-2024.pdf)
- 2017 General Law on Personal Data Protection held by Regulated Entities(*Ley General de Protección de Datos Personales en posesión de Sujetos Obligados*) (https://www.diputados.gob.mx/LeyesBiblio/pdf/LGPDPPSO.pdf)
- 2015 General Law of Transparency and Access to Public Information (https://www.diputados.gob.mx/LeyesBiblio/pdf/LGTAIP_200521.pdf)
- 2015 Executive Decree on Open Data. (https://www.dof.gob.mx/nota_detalle.php?codigo=5382838&fecha=20/02/2015#gsc.tab=0)
- 2010 Federal Law on Personal Data Protection held by Private Parties (*Ley Federal de Protección de Datos Personales en Posesión de los Particulares*) (https://www.diputados.gob.mx/LeyesBiblio/pdf/LFPDPPP.pdf)

Panama

- 2020 Technical Implementation Guide on Open Data (https://www.datosabiertos.gob.pa/documentos/1-about-guia-publicacion.pdf)
- 2019 Law No. 81 on Personal Data Protection (https://www.gacetaoficial.gob.pa/pdfTemp/28743_A/GacetaNo_28743a_20190329.pdf)

- 2018 Resolution No. DS-3513-2018 defining the Transparency Policy on Open Government Data (https://transparencia.css.gob.pa/wp-content/uploads/2020/01/Resoluci%C3%B3n-No.-DS-3513-2018-de-17-de-enero-de-2018-por-la-cual-se-desarrolla-la-pol%C3%ADtica-p%C3%BAblica-de-transparencia-de-datos-abiertos-de-gobierno.pdf)
- 2017 Executive Decree No. 511 adopting the Transparency Policy on Open Government Data (https://transparencia.css.gob.pa/wp-content/uploads/2020/01/Decreto-Ejecutivo-511-de-24-de-noviembre-de-2017-que-adopta-la-pol%C3%ADtica-p%C3%BAblica-de-transparencia-de-Datos-Abiertos-de-Gobierno.pdf)
- 2016 Resolution No. 15 approving the Government Interoperability Schema of Panama (https://aig.gob.pa/descargas/2019/06/Resolucion15_2016ApruebaEsquemadeInteroperabilidadCNIG.pdf?csrt=14471955142736531)
- 2012 Law No. 83 regulating the use of electronic tools in government formalities, creating the National Interoperability and Security System (Article 15)
- 2002 Law No. 6 on Public Transparency, Habeas Data and other matters (https://www.antai.gob.pa/wp-content/uploads/2015/04/Ley-6-de-22-enero-2002.pdf)

Paraguay

- 2023 Decree 8942 publishing the National ICT Plan 2022-2030 (https://www.presidencia.gov.py/url-sistema-visor-decretos/index.php/ver_decreto/31861)
- 2022 Law 6822 on Trusted services for Electronic formalities and Electronic documents, including specific provisions on personal data protection (https://www.bacn.gov.py/leyes-paraguayas/10318/ley-n-6822-de-los-servicios-de-confianza-para-las-transacciones-electronicas-del-documento-electronico-y-los-documentos-transmisibles-electronicos)
- 2020 Law 6522 on a Paperless government (https://www.bacn.gov.py/leyes-paraguayas/9281/ley-n-6562-de-la-reduccion-de-la-utilizacion-de-papel-en-la-gestion-publica-y-su-reemplazo-por-el-formato-digital)
- 2018 Law 6207 creating the Ministry of Information Technologies and Communication (among others defining the responsibilities of the Ministry on public sector interoperability)
- 2014 Law 5282 on Citizens´ access to Public Information and Government Transparency (https://www.bacn.gov.py/leyes-paraguayas/3013/ley-n-5282-libre-acceso-ciudadano-a-la-informacion-publica-y-transparencia-gubernamental)
- 2013 Law 4868 on Electronic Commerce (including provisions on personal data protection)
- 2013 Law 1682 on Information classified as private (https://www.bacn.gov.py/leyes-paraguayas/1760/ley-n-1682-reglamenta-la-informacion-de-caracter-privado)
- 2010 Law 4017 granting legal validity to electronic signature, digital signature, data messages (*transfers*), and electronic files. (https://www.bacn.gov.py/leyes-paraguayas/3550/ley-n-4017-de-validez-juridica-de-la-firma-electronica-la-firma-digital-los-mensajes-de-datos-y-el-expediente-electronico)

Peru

- 2020 Urgency Decree Nº 007-2020 approving the Digital Trust Framework. The Digital Trust Framework addresses issues related to data protection, the ethical use of data and technology, and crated the National Data Centre (https://www.gob.pe/institucion/pcm/normas-legales/395322-007-2020)
- 2020 Urgency Decree N° 006-2020-PCM creating the National System of Digital Transformation. The Decree defines "*data as a strategic asset*" as a core principle of the

National System of Digital Transformation (https://busquedas.elperuano.pe/normaslegales/decreto-de-urgencia-que-crea-el-sistema-nacional-de-transfor-decreto-de-urgencia-n-006-2020-1844001-1/)

- 2018 Legislative Decree 1412 approving the Digital Government Law (https://www.gob.pe/institucion/pcm/normas-legales/289706-1412) (Including provisions on data interoperability, open data, data governance and data protection)
- 2018 Ministerial Resolution N° 119-2018-PCM (https://www.gob.pe/institucion/pcm/normas-legales/2951-119-2018-pcm) & 2019 Ministerial Resolution N° 087-2019-PCM (https://www.gob.pe/institucion/pcm/normas-legales/267481-087-2019-pcm), creating the Digital Government Committee and defining its responsibilities, including in terms of advancing data sharing within the public sector, open data and data security
- 2017 Supreme Decree N° 016-2017-PCM defining the 2017-21 National Open Data Strategy and Peru´s Open Government Data Model (https://www.gob.pe/institucion/pcm/normas-legales/292314-016-2017-pcm)
- 2011 Law N° 29733 on Personal Data Protection (https://www.gob.pe/institucion/congreso-de-la-republica/normas-legales/243470-29733)
- 2011 Decree N° 083-2011-PCM, creating the State Interoperability Platform (PIDE). (https://www.gob.pe/institucion/pcm/normas-legales/292465-083-2011-pcm)

Uruguay

- 2021 Open Data Strategy 2021-24 (https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/datos-abiertos)
- 2020 Decree N° 64/020 (https://www.impo.com.uy/bases/decretos/64-2020) and Article 40 of Law N° 19670 (https://www.impo.com.uy/bases/leyes/19670-2018/40) (2018) with regulation on personal data protection
- 2017 Decree N° 54/017 defining the Technical Guidelines for Open Data Publication (https://www.impo.com.uy/bases/decretos/54-2017)
- 2015 Law Nº 19.355 (Article 82) defining the obligation of publishing the national budget in open formats
- 2008 Law N° 18381 on the Right to Access Public Information
- 2008 Law on Personal Data Protection, creating the Regulatory Unit for the Control of Personal Data (https://www.impo.com.uy/bases/leyes/18331-2008#:~:text=%2D%20Toda%20persona%20f%C3%ADsica%20o%20jur%C3%ADdica,de%20la%20que%20es%20titular)

Source: Based on information collected through the survey administered for the purpose of this report and additional desk research.

Challenges

Evidence from the LAC region points to diverse levels of regulatory maturity, with some countries missing stronger legal foundations in areas such as data interoperability, open data or personal data protection. The Covid-19 pandemic and other events surfaced this

existent gaps thus forcing some countries to take quick action to update their regulatory frameworks in these areas.

Peru´s and Brazil´s Digital Government Laws (see Box 3.1) stand as leading examples at the regional level in relation to the use of regulations as tools to improve data governance in the public sector and bridge the gap among specific areas.

Peru´s Digital Government Law provides the legal basis for the development of Data Governance and Management Framework for the Peruvian State. This achievement has led to current efforts implemented by Peru´s SEGDI including the development of the National Data Strategy for Peru and is in line with best practices observed in OECD countries such as the Netherlands, the United States, and Japan. Brazil´s Digital Government Law has helped to further link open data with digital government initiatives (e.g., the use of data for the co-development of public services), thus going beyond the traditional understanding of open data as a matter of public transparency (OECD, 2022[11]).

Nevertheless, whereas the availability of laws and regulations does not determine success, other countries are still lagging in terms of advancing on their efforts to develop solid data governance regulatory frameworks in the region.

Costa Rica and Panama could establish a stronger regulatory framework to advance data interoperability in the public sector. In 2018, Executive Decree N° 40951[22] overturned the 2010 Decree on the Promotion of the Public Sector Interoperability Model (Decree Nº 35776 -PLAN-G-J)[23] in Costa Rica. As a result, Costa Rica´s Ministry of Science, Innovation, Technology and Telecommunications (MICITT) is following a technical approach that focuses on the National Code of Digital Technologies but lacks stronger regulatory levers to enforce adoption. In Panama, AIG is working to bring public bodies to use the central Interoperability Bus (as defined in Panama´s 2020 Digital Agenda). Yet, despite the availability of technical guidelines, processes and requirements, the lack of hard-law instruments such as legislation and regulations in the area make enforcement a challenging task.

Last, despite earlier efforts and proposals to improve regulatory framework on open government data,[24] Paraguay still lacks legal provisions and regulations in this area. Nevertheless, with the arrival of the Covid-19 pandemic the government, as many other countries worldwide, faced public pressure to release information and data of public interest. In this line, Paraguay´s 2020 Law 6524 (which declared the state of emergency in the country) mandated the MITIC to create an on-line portal where all public bodies could publish emergency budget expenditures as open data.[25] Paraguay also lacks more solid legal framework for personal data protection despite the provisions included in the 2013 Law 4868 on Electronic Commerce.

Outdated or inexistent regulatory frameworks pose a challenge for greater regulatory interoperability in the region and therefore for the trustworthy integration, access and sharing of data across borders.

Data governance and its complexity is determined by the context in which data is accessed and shared (e.g., organisational, cross-sectoral, cross-border).

At the international level, instruments such as the European General Data Protection Regulation[26] (GDPR), the European Directive on open data and the re-use of public sector information,[27] and the European Data Governance Act[28] are trailblazing data-related regulations worldwide. It is worth mentioning that, among all LAC countries, the European Commission has only recognised Argentina and Uruguay as providing adequate levels of data protection[29] in line with EU regulations. Not in vain, countries worldwide are using GDPR to update their own national personal data protection regulations.

In LAC, outdated or inexistent regulations in areas such as open data, personal data protection and interoperability create an uneven field to tap on the growing availability of data sources for regional digital innovation and (cross-border) service design and delivery. This, while observing and protecting the legitimate interests of individuals, businesses and communities.

From this perspective, advancing in areas such as the availability of harmonised regulatory frameworks at the regional level should remain a priority for LAC countries for the years to come.

Co-ordination and collaboration

Overview

"Good data governance […] benefits from the adoption of open, inclusive, iterative, collective and value-based approaches to its definition, implementation, evaluation and change. […]. Stakeholder engagement can help to better identify data policy priorities and data needs, and to assess the current context in terms of data capability within the public sector (OECD, 2019[6]). In this light, co-ordination and collaboration with internal and external stakeholders is critical to, among other objectives, identify changing trends and emerging needs; co-develop, design and understand the rules and tools supporting good data governance (e.g. to balance personal data protection with open data); and to foster the use of common data tools, infrastructures, and standards across the public sector.

In terms of **whole-of-government co-ordination**, relevant examples include that of Brazil´s Central Committee for Data Governance[30] (CCGD), which was created by decree in 2019 to promote better co-ordination around specific data-related policy topics such as data access and sharing within the public sector, open data, data protection, and the citizen register. The CCGD is integrated only by representatives from public bodies, plus two representatives from civil society organisations with experience and proven performance in the field of personal data protection.

Co-ordination on data-related topics is also observed at the sectoral level. For instance, in 2020 Colombia´s Statistics National Administrative Department (DANE) created the Data Management Committee with the objective of promoting the governance of data access and sharing for statistical purposes.[31]

Co-ordination on data-related issues can take place nevertheless in fora with a broader focus on digital government. In Peru, and in line with the recommendations provided by the OECD (OECD, 2019[12]), Ministerial Resolution N° 119-2018-PCM[32] mandates the creation of a Digital Government Committee within each public body with the task, among other responsibilities, of promoting the exchange of data and information within the organisation and with other organisations.

Challenges

> Co-ordination and collaboration at all levels (from decision-makers to technical staff) is needed to advance efforts towards more data-driven governments. Tapping on communities of practice is fundamental to build public sector data maturity from the bottom up.

One of the key challenges LAC countries faces is to ensure all relevant stakeholders within and outside the public sector are aware, co-ordinate and collaborate around data-related or data-intensive initiatives. Evidence collected during interviews shows that whereas in some instances co-ordination takes place at the political or decision-making level, this practice is less extended to data-savvy players in the public sector or actors outside the public sector. These can include officials and bodies in charge of the actual implementation of data-driven initiatives, data stewards (if available), those bodies holding the

responsibility of administering registers in the public sector, and grassroots organisations. If co-ordination takes place, it is mostly *ad hoc* and project specific.

As presented in Figure 3.2, data governance is multi-faceted, and depending on the context of its implementation, multi-level. As such, different actors have different responsibilities depending on their roles and position. Ensuring co-ordination takes place at all levels is needed to make sure policy goals translate into coherent actions during the implementation stage. Clarity in terms of attributions of roles and responsibilities at the institutional level is however a precondition for success in this area (see Section on Data roles and responsibilities).

At the same time, collaboration through communities of practice were not often cited among interviewed actors. Earlier work in the LAC region by the OECD shows the impact changes of political administration can have on public officials' stability and as such on the continuity of specific data initiatives such as open data. One way of addressing this challenge is to give further importance to informal communities of practice within the public sector so that knowledge on what works and what does not is widespread, data and tech tools re-used, and a data access and sharing culture built from the bottom up.

> Good data governance is collaborative and open. In LAC, co-ordination and collaboration should take place beyond the public sector to engage with external communities of practice and with those impacted by data projects and initiatives.

In LAC, evidence show that the participation of actors from outside the public sector in co-ordination bodies (e.g., human rights watchers, start-ups, civil society) is not common practice. This "open" governance of data is relevant in particular when data access and sharing has implications in terms of personal data protection, privacy and consent. Addressing this gap would be critical to ensure that data-related strategies, projects and initiatives are inclusive, representative and integrate all voices, in particular the ones of those who will be affected first-hand by their implementation, including vulnerable groups and minorities.

Data roles and responsibilities across public bodies

Overview

Defining clear roles for data leadership and management (ranging from data protection to data openness) is a precondition for the sound implementation of a data strategy. Having clarity about roles:

- Facilitates co-ordination, reduces the risk of duplication, and increases awareness as public officials know who is responsible of specific tasks and as such, know to whom address specific questions when in doubt.
- Makes the distribution and attribution of responsibilities clear to all actors involved in data management, access and sharing.
- Sheds further light in terms of the accountability of public officials in charge of a specific data management task.

In terms of the distribution and attribution of roles and responsibilities, the most relevant examples are observed in the governance arrangements for personal data protection, as defined in available legislations and formal requirements.

In Barbados, the 2019 Data Protection Act[33] (DPA) created a Data Protection Commissioner for the public sector and mandates public agencies to appoint a Data Protection Officer. Brazil's 2018 Personal Data

Protection Law also defined a similar specific role to channel communication between data controllers, data subjects and the National Data Protection Authority (ANPD). Both Barbados' and Brazil's data protection regulations have also introduced the concepts of "data comptroller" and "data processor" in line with European regulations. In Uruguay**,** Law 19.670 (Article 40) of 2018 mandates public bodies to appoint a Data Protection Delegate. The responsibilities of data protection delegates are further detailed in Decree N° 64/020 of 2020. The appointment of these data protection positions within public bodies helps also in co-ordinating with data protection authorities, as available.

Challenges

The appointment or allocation of roles and responsibilities is not formalised in some instances whereas in other cases it is rather organic and leverages existing governance structures.

The stages of the data value cycle include, but are not limited to, data generation, collection, selection, curation, storage, protection, disposal, access, sharing, and use (OECD, 2021[8]). Whereas it would be not feasible to derive a specific role or position from the tasks that result from each of the aforementioned stages, some tasks can lead to the definition of tactical roles such as data protection, privacy, information and open data officers. In practice, these roles (should) interact and be co-ordinated to make sure data delivers value within the context of available legislation and in the respect of values and rights.

In LAC, the implementation of data protection and privacy regulation, which one may consider quite straightforward in terms of scope and goal, has been translated into the definition or appointment of *personal* data protection roles in the public sector by law as described before. Yet, in practice, the appointment of personal data protection *roles* translates into the allocation of the role as a new *responsibility* or task of an existent official.

Another challenge arises in relation to other stages of the data value cycle which can be often perceived as more complex or at the intersection of different policies.

For instance, in LAC the institutional arrangements for the implementation of open government data policies are deeply connected with transparency efforts. This trend was reported by the OECD in earlier studies, namely the 2015 *Report on Open Government in Latin America* (OECD, 2014[13]). This connection, (which also results from the inclusion of open data goals in the context of Open Government Partnership's Action Plans in the region) has made some LAC countries to tap on the governance arrangements for public sector transparency as the main channel to deliver on their goals or commitments on open government data (see section on open government data).

Examples of the above include Panama, where Resolution DS-3513 (2018)[34] states that open data implementation is the responsibility of agencies' public information officers (Article 15). In Costa Rica, the absence of specific regulations on open data makes Access to Information Officers (as defined in the 2017 Decree 40 200 on Transparency and Access to Public Information[35] *de facto* implementers of open data efforts across the public sector as reported by Costa Rica. In other countries such as Brazil and Mexico regulatory instruments such as open data decrees do define the role of public bodies in terms of open data publication, without providing further detail in terms of *whom* within public bodies oversees implementation. Thus, leaving room for public bodies' discretion in the allocation of the open data *responsibility* internally. In Peru, evidence collected through the survey administered for this report point to institutional Digital Government Leaders (a formal position created by the Digital Government Law) as the implementers of open data initiatives.

Tendency to link open data to public sector transparency has had an impact on the understanding of the goal of open government data policies in LAC, which sometimes can focus largely on data publication and not to the same extent on the value that public sector data can create beyond openness and transparency, such as through its reuse. Besides, the lack of more detailed or secondary regulations in the area paired with discretionary decision making in terms of allocating open data responsibility can make that incentives focus on compliance rather than value creation. In general terms, the allocation of the open data responsibility to public officials with diverse backgrounds can also make difficult to find common ground for co-ordination and collaboration, making data publication the main outcome rather than a mean towards value creation.

At the same time, and as showed in the 2019 Open, Useful, and Re-usable data (OURdata) Index (OECD, 2020[7]), the emergence and growing adoption of data-intensive technologies such as artificial intelligence (AI) (see Chapter 5) have shifted policy priorities, with some countries investing greater efforts in building capacity for data use within the public sector.

The abovementioned trend, however, requires further efforts to close existing data governance gaps i.e. taking a more cohesive approach to data governance capability within public sectors. This, as applying data and retrieving value from it requires order and structure - from defining standards for data generation and selecting a trustworthy data source to securing data integrity and deciding if a specific dataset is fit for public sharing.

Institutional data stewardship is needed to bring all pieces together and ensure cohesion and co-ordination.

It is important to understand the data value cycle as a continuum of interlinked stages and tasks which, as mentioned earlier, are often fragmented in different roles and organisations. In LAC, fragmentation is not only related to data siloes but also to the limited co-ordination among existent roles or those that will be created as an effort to better manage, control, protect, open or re-use data. In this context, as observed with the adoption of National Data Strategies, there is a generalised need to bring closer different data responsibilities and increase data literacy within the public sector so that policies, actions and decisions are coherent and do not conflict or interfere with each other (e.g., data protection and open data).

Achieving this integration would require defining more strategic and cross-cutting roles such as **institutional data stewards and/or leaders**. Such roles can help connect different data responsibilities with both an understanding of the more strategic aspects of data efforts (as defined by central authorities) and an action-oriented, tactical and advisory mind-set of what must be done within the public body and how that can be achieved. These roles would also help to facilitate co-ordination of national and institutional data strategies if available.

Evidence from LAC show that strategic institutional data leadership roles are mostly absent from public bodies.

Peru is the only country reporting the formalisation of such a role (Data Governance Official) in public bodies by law. Whereas in practice data governance officials have been translated into task attributed to existent positions and not necessarily as a formal position, data governance officials should oversee different tasks including fostering a data culture within public sector, promoting better data management and quality, and co-ordinating with officials in charge of open data, the use of data for services, interoperability, and data protection (2021 Regulations of the Digital Government Law).[36] Brazil reports the absence of these positions in practice. In Panamá**,** these networks are available but only in relation to Information Officers and in connection to open data efforts with a focus on transparency. A similar context in observed in Colombia**,** where these roles are mostly focused on open data. In Chile**,** public officials

interviewed for the purpose of this report expressed that only 20% of public sector bodies have a leadership role for data e.g., chief data officers, but these are mostly technical.

While the underlying causes behind the abovementioned context would require further research and data collection, the lack of resources (in particular in smaller public institutions or at the local level) could have an impact on the actual capacity of public bodies to create additional formal positions and allocate further resources (e.g., salaries) for that purpose. In turn, this creates an environment where public officials take given extra responsibilities in addition to their regular roles. Consequence, extra workload could lead to a compliance-based public culture and a lack of the necessarily knowledge to make decisions on issues such as data protection, privacy, or data access and sharing.

Data leadership and strategies

At the more strategic level, public sector data governance requires whole-of-government leadership and clarity in terms of expected outcomes, as well as milestones and actions needed to achieve those outcomes and deliver value. Adopting a whole-of-government approach to data access and sharing is among the key provisions of the OECD Recommendation on Enhancing the Access to and Sharing of Data[37] adopted by the OECD Council in October 2021. In this line, the Recommendation stresses how national data strategies and leadership at the highest level can help to "foster data access and sharing within and across society, public and private sectors, and jurisdictions" and enable "policy co-ordination and implementation" (OECD, 2021[3]).

Whole-of-government data leadership

Overview

Whole-of-government leadership is fundamental for digital and data governance. As detailed in the OECD *E-leaders Handbook on the Governance of Digital Government* (OECD, 2021[14]), and the OECD Report *The Path to Becoming a Data-Driven Public Sector* (OECD, 2019[6]) national contexts can determine how the whole-of-leadership function is attributed in terms of location (e.g., at the centre of government vs. ministry), institutional arrangement (e.g., an agency vs. an internal unit, one-person leadership vs. group-led strategy), and the influence or type of leadership sought for (political, administrative or technical). The available governance arrangements for digital government also play a significant role as they can also influence how the whole-of government data leadership is attributed. For instance, as a *task* or function of the digital government leading body rather than a stand-alone formal position.

Comprehensive data leadership positions, in the form of formal, stand-alone, one-person roles, are mostly absent from public sectors in LAC (e.g. a Government Chief Data Officer as observed in Estonia). Yet, practice in the LAC region shows a close connection between governance structures for digital government (as discussed in Chapter 1) and the attribution of the responsibility for the whole-of-government leadership for data.

In LAC, overall data leadership is often attributed as a *task* of the body in charge of the digital government strategy and has a strong focus on interoperability. This confirms the strategic value of data for public service design and delivery, policy making, and public sector efficiency. However, the leadership and/or mandate on personal data protection and open government data often fall in different bodies across LAC countries (see Table 3.1).

Table 3.1. Distribution of the data leadership *task* in LAC

	Institution	Institution is in charge of:		
		Interoperability	Open data	Personal data protection
Argentina	Secretariat of Public Innovation, Chief of Cabinet Office	Yes	Yes	No - Public Information Access Agency
Barbados	..	..	..	..
Brazil	Secretary of Digital Government, Ministry of Management and Innovation in Public Services	Yes	No - Office of the General Comptroller	No - National Data Protection Authority
Chile	Digital Government Division, Ministry General Secretariat of the Presidency	Yes	Yes	No - Task not clearly attributed
Colombia	Direction of Digital Government Ministry of Information and Telecommunications	Yes	Yes	No - Superintendence of Industry and Commerce
Costa Rica	National Agency of Digital Government	Yes	No	No - Personal Data Protection Agency
Dominican Republic	Government Office of Information Technologies and Communication (OGTIC)	Yes	No - Government Ethics and Integrity General Direction	No - Task not clearly attributed
Ecuador	Ministry of Telecommunications and Information Society	Yes	No	No - Task not clearly attributed
Jamaica	..	..	..	..
Mexico	Co-ordination of the National Digital Strategy, Office of the President	Yes	No - Ministry of Public Administration	No - National Institute of Transparency, Access to Information and Personal Data Protection
Panama	National Authority for Government Innovation	Yes	Yes	No - National Authority of Transparency and Access to Information
Paraguay	Ministry of Information Technologies and Communication	Yes	Yes	No - Personal Data Protection Agency (to be created)
Peru	Secretariat of Digital Government, Presidency of the Council of Ministers	Yes	Yes	No - Personal Data Protection National Authority
Uruguay	E-government and Information Society Agency (AGESIC)	Yes	Yes	No - Personal Data Regulatory and Control Unit

.. : Information not available/unclear.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

For instance, in Brazil, the Secretary of Digital Government under the Ministry of Management and Innovation in Public Services owns the operational leadership in terms of data governance and interoperability. This role was previously executed in close collaboration with the former Special Secretary of State Modernisation located at the Office of the President (which acted more as the political arm of the digital government agenda). The Special Secretary of State Modernisation disappeared in 2023. The mandate for open data, however, is located at the Office of the General Comptroller (CGU) (OECD, 2018[15]). The Secretariat of Digital Government chairs the Central Committee for Data Governance[38] (see section on co-ordination).

In Colombia**,** MINTIC's Direction of Digital Government oversees diverse aspects related to data interoperability and open data (OECD, 2018[16]). MINTIC's role is implemented in close collaboration with the DNP and the Office of the President. Similar scenarios are observed in Ecuador, and Paraguay, where the respective Ministries in charge of Information Technologies and Communication lead the digital government agenda, including interoperability.

In Uruguay**,** the AGESIC integrates data interoperability and open data as part of its responsibilities. A similar scenario is observed in Peru where SEGDI leads interoperability and open data efforts in the public sector. While different in terms of arrangement (one being an agency, the one other an office), the location of AGESIC and SEGDI within the Centre of Government (CoG) gives these bodies the political lever and operational leadership needed to advance digital government and data efforts in the public sector (see OECD (2017[17]); (2019[12]); Chapter 1).

In the Dominican Republic, the data leadership task (in terms of interoperability) is under the responsibility of the Government Office for Information and Communication Technologies (OGTIC). OGTIC co-ordinates with the Governmental Ethics and Integrity General Direction in the area of open data.

In Panama, data governance, interoperability and open data are under the responsibility of AIG, which has also a specific internal unit focusing on advancing data science in the public sector.

In Chile, the responsibility for interoperability is under the Digital Government Division (DGD) at the Ministry General Secretariat of the Presidency (MINSEGPRES). DGD has a specific area in charge of data governance in the public sector and is also in charge of the strategic and operational aspects of open government data, including the management of Chile's open data portal.

In Argentina and Mexico, changes of central administration shifted the attribution of data-related responsibilities in recent years. In Argentina, interoperability is under the responsibility of the Secretariat of Public Innovation at the Chief of Cabinet Office. Open data is intricately connected to the open government agenda for the Secretariat of Public Innovation's Open Government National Direction leads the open data agenda. Formerly, the National Direction of Public Data and Public Information "acted as a *de facto* chief data officer for the government" (OECD, 2019[10]), thus, advancing data management, interoperability and open data efforts in connection with the digital government agenda. It is not clear if this integrated data leadership approach is still in place in the Country according to evidence provided.

In Mexico, the Co-ordination of the National Digital Strategy (CEDN) at the Office of the President leads interoperability efforts, whereas open data is under the responsibility of the Ministry of Public Administration (SFP) and personal data protection under the National Institute of Transparency, Access to Information and Personal Data Protection (INAI). Formerly, open data in Mexico sit at the Office of the President (2012-18) which gave this policy area a strong policy lever (see OECD (2016[18]); (2018[19])). The CEDN was also located at the Office of the President for the period 2012-2018 but acted more as the political lever of the digital government and agenda, whereas the Unit for Digital Government at the SFP acted as the operational arm for the digital government, including the needed support for open data between 2012 and 2018.

Challenges

Whole-of-government data leadership is often attributed as a task of the body in charge of digital government and has a strong focus on interoperability. Therefore, it can be perceived as strictly technical and operational. The attribution of data leadership roles in areas such as open data and personal data protection is driven by national contexts and governance arrangements. This allocation of the data leadership task call for a more integrated and shared vision in the public sector.

Evidence presented in the previous section shows the diverse and sometimes ambiguous institutional frameworks for whole-of-government data leadership, and their relationship with other agendas that might fall under other bodies' responsibilities (open government data and personal data protection) (see Table 3.1).

In terms of *personal data protection*, these leadership roles are normally allocated to stand-alone bodies such as Data Protection Offices (e.g. Brazil's National Authority of Data Protection, Mexico's INAI, or Costa Rica's Personal Data Protection Agency), but in some instances, the mandate and therefore leadership for personal data protection is still blurry as the organisational leadership task is not clearly attributed to a public body.

In terms of *open government data*, institutional arrangements are highly uneven among LAC countries for the mandate and leadership task can be attributed to an internal unit within digital government body or to other public bodies in charge of access to public information, transparency, or open government.

As discussed in previous sections, the more distributed data leadership roles are (data interoperability, open data, data protection) the more need for closer co-ordination and coherence. Yet, the heterogeneous governance arrangements observed in open government data and personal data protection stress the importance of clarifying institutional frameworks and the attribution of the leadership task in some countries. This is also relevant in the context of other data-intensive areas such as artificial intelligence (AI).

Clarity and co-ordination among those bodies and leaders in charge of personal data protection and open data (if not defined as a *task* of the digital government body) would help avoid moving towards the appointment of one-person data leadership models - which might not be feasible in specific contexts or conflict existing digital government and data roles if positioned at the same level. Improved co-ordination of existing bodies and roles would be more organic as it would fit into current governance structures available in some countries.

Nevertheless, in some countries a stronger political leadership for digital government (which often includes the data leadership task) can also help in advancing strategic ambitions besides the technical aspects of digital government, data-driven public sectors and data governance as a whole (see Chapter 1 on governance).

National data strategies

Overview

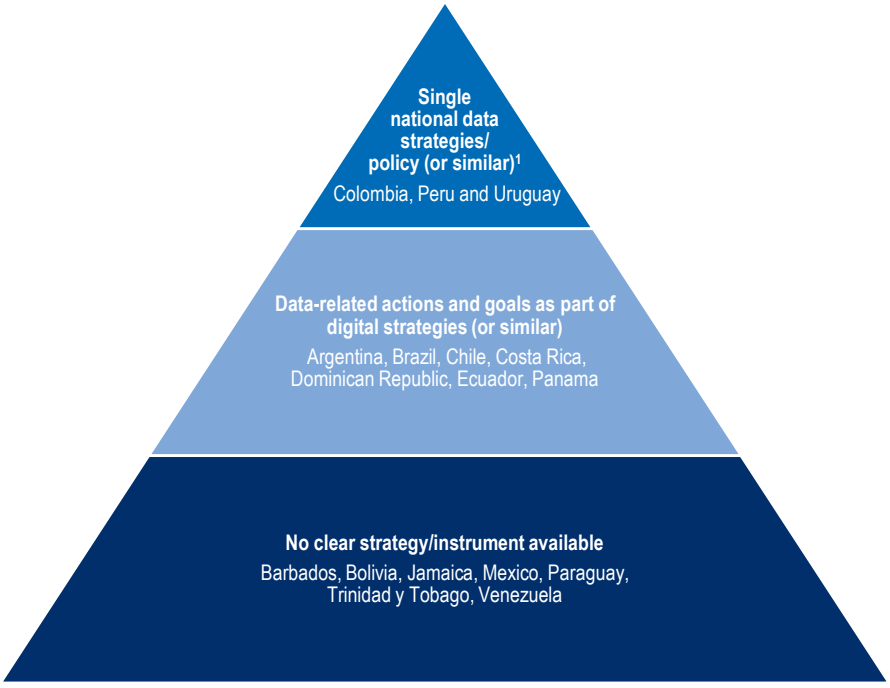
Earlier OECD policy and measurement work on digital government, including the *OECD Digital Government Index* (OECD, 2020[5]) and the OECD 2019 Report *The Path to Becoming a Data-Driven*

Public Sector (OECD, 2019[6]) provided evidence on how OECD member and partner countries have moved towards greater coherence of national data efforts by developing **national data strategies** or embedding these within policy instruments such as digital agendas and other instruments such as AI strategies.

National data strategies (as those put in place by Australia,[39] Germany,[40] Japan,[41] the United States,[42] Ireland,[43] the Netherlands[44] and Sweden)[45] have often a broader scope for their aim is to bring together relevant data policy areas, including data access and sharing within the public sector and across sectors, interoperability, data management, open data, data protection, data ethics, and data security.

Following up on and in line with the findings presented in the 2022 OECD/CAF Report *The Strategic and Responsible Use of Artificial Intelligence in the Public Sector of Latin America and the Caribbean* (OECD/CAF, 2022[9]), single national data strategies or policies are not standard practice in LAC countries (see Figure 3.3). According to evidence provided and further research, Colombia, Peru, and Uruguay are the only countries with similar policy instruments in the region.

Figure 3.3. National data strategies in Latin America and the Caribbean



[1] In addition to the availability of broader digital agendas or similar instruments.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

Colombia's National Policy on Data Exploitation (or CONPES 3920[46] on Big Data from 2018) developed by the ministerial-level DNP defines the main goals and actions to be implemented by actors from different sectors to tap on the value of data for social and economic development. For this purpose, the CONPES 3920 includes 11 action lines in the areas of data infrastructure, open data, data classifications and legal certainty, public-private data sharing, public sector capacity, data markets and data sandboxes, among others. CONPES 3920 is linked to the goals of the National Policy for Digital Transformation and Artificial Intelligence (CONPES 3975[47] from 2019). In 2022, Colombia also published the National Data Infrastructure Plan (PNID) developed by MINTIC, DNP and the Office of the President.

Uruguay's national data policy was launched in 2019 and set a group of general and specific principles for data management in the public sector in connection with Uruguay's 2020 Digital Agenda (AGESIC,

2019[20]). In 2021, Peru underwent a process to develop a national data strategy in line with the provisions of its Digital Government Bill. In 2023, Peru's issued its national data strategy, which is organised around six main axes: data as an asset, data management, data infrastructure, ethics, talent, and data ecosystem (see PCM (2021[21]), Government of Peru (2021[22]) and (2023[23])). Peru's and Uruguay's data strategy/policy are deeply rooted and connected to digitalisation efforts in the country and the digital government agenda.

In most cases, data-related strategies are included as a sub-component of broader digital government strategies or similar, or specific to areas such as open government data. As a result, this type of strategies could have a narrower scope than dedicated national data strategies and provide less clarity in terms of timeframes and actions:

- Argentina: In the Digital Agenda 2030,[48] published by decree in November 2018, the Argentinian government included specific goals related to personal data protection and data infrastructure. The Annex of the Agenda highlights data use by public bodies and open data as key actions of its digital government component. Data-related goals such as open data and the finalisation of the National Public Data Infrastructure Programme (INDAP) are also included in the 2022-24 Argentinian OGP Action Plan.[49]
- Brazil: Objectives on data interoperability and open data are included in the 2020-22 Digital Government Strategy (Decree 10,332 from 2020),[50] and further detailed on other legal instruments such as Decree 10.046 on Interoperability (2019) and Decree 8.777 (2016) on Open Data Policy (see section on regulatory frameworks).
- Chile: Chile's 2018-22 Digital Transformation Strategy[51] includes data-driven public sector as one out of its five action lines, covering issues related to open data and data use in the public sector. Data also is one out of the tree enabling axis of the 2021-2030 National AI Policy,[52] integrating issues and specific actions related to personal data protection, open data, science and research, and data communities. The National AI Policy is under the leadership of the Ministry of Science and Technology, and thus a different body of those in charge of digital government. In 2023, the Chilean government launched a public consultation to inform the development of its national data strategy.
- Costa Rica: The Country's Digital Transformation Strategy 2023 - 2027 proposes actions in six thematic areas, namely certified digital signature and digital identity, digital services, digital skills, data governance, interoperability, and the updating of the regulations on digital transformation.
- Dominican Republic: In 2022, the Dominican Republic published its 2030 Digital Agenda,[53] including also specific elements related to data interoperability, data protection and open data. Notably, the Dominican Republic issued an Action Plan for 2021-24[54] as means to operationalise the goals defined in the Digital Agenda (including those related to data), and attribute responsibilities to public bodies in this regard.
- Ecuador: Ecuador has also followed regional leaders an in 2021 the Country issued a biennial Digital Agenda[55] (2021/22) including topics and objectives on open data, interoperability, data protection and big data.
- Panama: The 2020 Digital Agenda[56] includes both clear policy actions related to interoperability, data protection and open government data, and explicit policy goals related to data governance, open data and AI - all with the objective of making the Panamanian public sector data-driven.

In its ICT Directive Plan[57] Paraguay included specific actions (mostly technical) related to interoperability and similar, but it is unclear if this policy document has been updated since its publication in 2011. In September 2021, Mexico published the National Digital Strategy for 2021-24.[58] Yet, the document briefly touches on data, besides including the importance of integrating structured databases within the public sector.

No information was available for Bolivia, Barbados, Jamaica, Trinidad y Tobago, and Venezuela.

Challenges

The understanding of national data strategies is still narrow in some cases, and often focuses on siloed policy aspects e.g., interoperability, open government data.

In some countries, a coherent and broader view is needed to integrate aspects related to interoperability, open data, data ethics, personal data protection, data security/protection, and cross-sectoral/border data sharing under cohesive policy instruments and common actions. At the same time, such coherent approach can help to further bridge the understanding of "*data as a right*" present in the region (the right to access data, personal data protection) with the policy discourse that calls for the understanding of *data as an asset*, and as a digital public good.

Also, during fact-finding interviews, public officials and decision makers often confused legal instruments (such as open data decrees or Access to Information laws), and other softer instruments (such as OGP action plans) with comprehensive national data strategies which may confirm the absence of an integrated view to data at a more conceptual level.

In LAC, national data strategies are somehow *de facto* instrument to translate the vision into a set of policy tools and initiatives (as opposed to action-oriented instruments). Digital agendas (when available) have further paved the ground to bring data-related policy issues under one single policy instrument. However, countries in LAC could take a step ahead and explore if tools such as national data strategies could help to support policy implementation and shed further clarity in terms of actions, timeframes, responsibilities and accountability, while also acknowledging their relevance in the context of AI strategies. Alignment and adherence to international instruments such as the OECD Recommendation on Enhancing Access to and Sharing of Data (OECD, 2021[3]) could also help in this regard.

Current efforts are incipient but can help to build the basis for data integration at a regional scale in the long run.

Whereas moving towards a common data strategy for the region is ambitious in the long term, and the harmonisation of rules, institutions, systems and data much needed as discussed in previous sections, in LAC, the appetite for regional data integration and cross-border data exchange is reflected on the actions taken in fora such as GEALC Network and the Digital Nations group, and trade blocks such as the MERCOSUR (as discussed earlier in this chapter). Other efforts are observed in ECLAC's eLAC2022 strategy, which includes objectives to achieve regional data flows with trust.[59]

At the international level, the EU Data Strategy[60] has set a precedent as an instrument for data access and sharing at the regional level. In particular, its objective of creating data spaces in strategic sectors (including energy, mobility, health, and agricultural data, and a specific data space for public administrations, starting with public procurement data) (EC, 2020[24]) underlines the relevance of this instrument as a driver of trustworthy data access and sharing.

Along these lines, potential medium-term actions in LAC could consider the creation of similar mechanisms for data access and sharing in the region building on common priorities and interests. For instance, in the short term, promoting the further adoption and implementation of international open standards in areas such as public contracting, beneficial ownership, and public infrastructure can help create a common

(open) data space in the region to fight corruption across borders. Also, sustaining close co-ordination among national governments with data holders from outside the public sector (incl. citizens, indigenous communities, and the private sector) will be instrumental to avoid creating national data governance arrangements which are neither interoperable by design nor respond to current and future needs in terms of data access and sharing, including across sectors and borders.

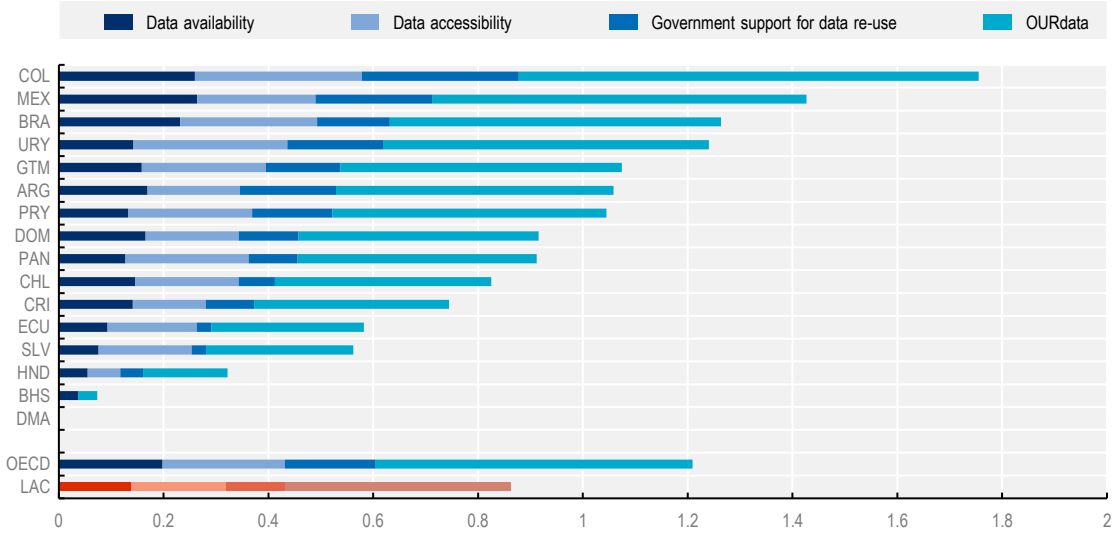
Open government data

Overview

Data from the 2019 edition of the Open, Useful, and Re-usable data (OURdata) Index showed significant gaps on open data availability, accessibility and re-use by 2019 (OECD, 2020[25]), with Colombia, Mexico and Brazil leading, back at the time, open data efforts in LAC. Recent evidence collected for the purpose of this report shows that in some instances, LAC countries have increasingly reinforced the regulatory and institutional governance arrangements for open government data (see section on steering policy change). Yet, progress is still uneven in terms of compliance, implementation and value co-creation (e.g. good governance and economic growth). Monitoring impact is still a challenge.

Important developments at the national level have taken place mostly in terms of the governance for open government data. In Brazil, instruments such as the revised version of the open data policy (2019), the Open Data Monitoring Panel (2019), the updated National Digital Government Strategy (2020) and the Digital Government Law (2021) have improved the governance foundations for open government data in the Country, also broadening its reach to the digital transformation of the public sector (OECD, 2022[11]). Other example if that of Ecuador's 2020 Ministerial Agreement 011 on the Open Data Policy, and Panama's 2020 Technical Implementation Guide on Open Data.

Figure 3.4. OURdata Index 2019: Latin America and the Caribbean



Source: OECD (2020[25]), *Government at a Glance: Latin America and the Caribbean 2020*, https://doi.org/10.1787/13130fbb-en.

As discussed in earlier OECD studies on digital government and data in the region[61] open government data policies in LAC were and, in some cases, still are deeply connected to the "data as a right" policy discourse and are therefore driven by public sector transparency and open government agendas – in particular the latter which, in the context of the OGP, remains a driver for open data in the region.

Drawing on the recommendations of the 2019 OECD Open Government Review of Argentina (OECD, 2019[26]), in 2020 the country launched its first Strategic Plan on Open Government (2020 – 23), including specific goals on open data. Costa Rica has tapped on its 4th OGP Action Plan (2019-22)[62] to sustain open data efforts at the national level. Specific policy sectors are also priority targets in LAC. Uruguay's 5th OGP Action Plan[63] has helped secure the implementation of open data initiatives and paved the way for the definition of Uruguay's Open Data Strategy for 2021-24 (goal 1.9), which aims at tackling social and policy changes in areas such as anti-corruption, environment, and gender.

The publication of open data to fight corruption is also preponderant in the region. Evidence from the interviews conducted in the context of this project point to the fact Colombia, Costa Rica, Ecuador, and Paraguay are investing on open data efforts to fight corruption, in collaboration with actors such as the Open Data Charter and the German Agency for International Co-operation (GIZ), and in line with the Organisation of American States (OAS) Inter-American Programme on Open Data to Prevent and Fight Corruption (PIDA). In Colombia for instance PIDA´s implementation was included in Colombia´s fourth OGP Action plan. In Mexico also the 2021-24 Transparency, Open Government and Open Data Policy underlines its connection and alignment with the fight against corruption.

In terms of promoting re-use of data, Peru is working on further exploring public-private partnerships to increase open data re-use and improve services for citizens, in line with the Peru's National Open Government Data Strategy 2017-21. Argentina organised workshops to design its most recent OGP Action Plan for 2020 – 24. Costa Rica also created the National Commission of Open Data, a multi-stakeholder co-ordination group in charge of steer the open data Policy in the country.[64] Paraguay and Dominican Republic have also invested efforts to further engage with data users to identify demand in the context of worktables with the private sector and hackathons.

In 2021 and 2021, Mexico's National Institute of Transparency, Access to Information and Protection of Personal Data (INAI) in partnership with other organisations from the public sector and the civil society has organised the National Open Data Conference (DATACON). The DATACON was an on-line effort to bring experts from different sectors to collaborate to address policy challenges through open data. More recently in 2023, the INAI launched Open Mexico[65] – a multi-stakeholder initiative aimed at developing a National Open Data Policy.

Panama reports the absence of a systemic interaction with data users that can help to identify demand and promote reuse. Yet, it also points to initiatives such as partnerships with universities that aim to address this challenge.

Challenges

> Transparency and open government are the main drivers for open data agendas in LAC. This misses the role of open data as a digital public good and its contribution as a key policy lever to address pressing and emerging regional policy challenges, and as an asset for data-intensive technologies such as AI and business models.

In LAC, the strong connection of open data with public transparency remains a key driver of open data initiatives but in some cases it has not evolved in line with developments at the international level.

For instance, the contribution of open data to foster the data economy and the development of services, or as tool to support or address democratic processes challenges such as elections and the fight against mis- and dis-information is still not central nor widespread. As discussed earlier in this chapter, countries

like Brazil and Peru have made efforts to further connect open data to digital government efforts, including areas such as service design and delivery by embedding open data in digital government legislation. However, this understanding is not widespread in the region yet.

At the same time, emerging global challenges such as the protection of democracy would require exploring the contribution that open data can play in this area at a regional level. Broader initiatives such as C40, the World Organization of United Cities and Local Governments (UCLG), and the Cities Coalition for Digital Rights would also offer an ideal platform to further promote the role of local governments in the region as key players in priority policy areas such as sustainable development, climate change and democracy and scale up the potential and value of digitalisation and data in these areas.

Public decision makers would need to evolve their policy discourse and implement concrete actions and initiatives to ensure that open government data policies and initiatives respond to new policy challenges. This would help also to open data initiatives are further integrated with broader digitalisation agendas (including AI strategies) and policy issues of relevance in the current global context.

Initiatives to collaborate and engage with internal and external actors to promote data re-use have increased but are not mainstreamed. In some other cases, efforts on open data re-use have stagnated.

Despite the abovementioned initiatives, mainstreamed engagement to promote data re-use with communities of practice and data users (including within the public sector) remains a challenge. This is a long-standing challenge in the LAC that requires concrete actions and a clearer understanding that data publication is only a means towards a broader goal within policy and decision makers. Recent results from the Global Data Barometer confirm these findings.[66]

Moreover, several issues are observed in some LAC countries that have stagnated open data policies, such as the lack of high-level commitment, changes of political administration, lack of understanding by decision makers, or resistance in some sectors.

In Chile, the 2012 Presidential Directive on Open Government mandated the implementation of open data by public sector institutions, including in areas such as procurement and public budgeting. However, the country failed to maintain momentum or increase its efforts to promote data re-use, as the results of the 2017 and 2019 editions of the OURdata Index show.[67] Also, evidence from the survey and the interviews carried-out for the purpose of this report point out the lack of a clear strategy and systematic practice, with the open data portal being only a dataset repository rather than an instrument to co-create value. Yet, despite the lack of a continuous central push to the open data policy, sectoral initiatives such as those by Chile's Ministry of Science on open data for research and development, and other initiatives in budgeting and energy sectors have maintained practice on-going.

Open data and data governance at the local level remain incipient. Smart cities are taking an increasing role in the multi-level data governance, but the role of cities as key actors in the open data ecosystem is still missing from the broader public discourse in the region.

Cities like Buenos Aires (Argentina), Lima (Peru), Bogotá (Colombia), and Mexico City (Mexico)[68] have been long standing leaders in the region in terms of digital government and open data at the local level, but much remains to be done in the region in this area beyond these and other metropoles.

Whereas this specific area would require further research, initiatives such as the Metropolitan Network of Municipalities and Local Governments by the Ministry of Finance in Paraguay, *País Digital* in Argentina, Mexico's DATACON (which includes the participation of local authorities) and other similar practices in place can help to advance open data efforts at the local level. This would need close co-ordination with the central level and solid data federation and multi-level governance arrangements to avoid fragmented practices and policies. Addressing challenges related to connectivity, lack of capacity at the local level of government, access to rural communities will play a decisive role to advance in this regard.

Trustworthy data access and sharing

Overview

In relation to regulatory arrangements, the application of *habeas data* mechanisms is widespread in LAC, thus being present in most personal data protection regulations in the region (Fernandez Nieto, 2022[27]). Yet, as detailed in previous sections, countries are still in the process of either building or consolidating regulatory and institutional arrangements at the national level for personal data protection and privacy (see section on steering policy change).

In this regard, recent national developments include Panama's Law No. 81 on Personal Data Protection[69] (2019), Colombia's Decree 620 from 2020 that provides general guidelines on the use and operation of digital services[70] (including on data portability, consent, privacy and personal data protection), and Ecuador's Organic Law on Personal Data Protection[71] from 2021.

At the same time, while the COVID-19 pandemic further underlined the relevance of data access and sharing within the public sector and across sectors and borders, it also stressed the importance of these actions to take place within a context of trust guaranteeing data security and safeguarding personal privacy. For instance, Peru's Emergency Decree 007-2020 established the Digital Trust Framework, which focuses on privacy by default, and highlights public-private collaboration to secure public trust in digital services.

In terms of whole-of-government institutional arrangements to ensure and enforce data protection, examples in this area include Uruguay's Personal Data Regulatory and Control Unit (URCDP),[72] Costa Rica's Population Data Protection Agency (PRODHAB),[73] and Peru's Personal Data Protection National Authority (a body within the Ministry of Justice).

Another case is that of Mexico's INAI.[74] It is worth mentioning that in June 2022, INAI launched a set of guidelines for the management of personal data in the context of artificial intelligence[75] which confirms the relevance of advancing or modernising personal data protection regulations and supportive soft-instruments in line with technological development.

For more information of the current regulatory and institutional arrangements for personal data protection in LAC see section on steering policy change, Table 3.1 and Box 3.1.

Challenges

Making personal data protection operational implies providing citizens with the right mechanisms to exert their rights. Digital public

infrastructure such as digital identity can help to advance transparency efforts on the use of personal data in the public sector.

Despite advancements, some LAC countries are still struggling to advance implementation efforts and to proactively provide citizens with tools they can use to know how their data is being used within the public sector, for what purpose and by whom.

For instance, Brazil's 2018 General Law 13.709 on Data Protection[76] defined requirements for public sector organisations to appoint Data Protection Officers to address past issues where responsibility and accountability in the area of personal data protection was not clearly attributed. Brazil established a Council on Data Protection to co-ordinate decisions relevant to personal data protection and privacy, and in 2022, Brazil´s National Data Protection Authority also published the Guidebook on Personal Data Processing by Government Entities.

As regulatory and leadership arrangements are further clarified in specific countries, implementation would also require defining and attributing clear responsibilities and appointing roles across public sector organisations. Similarly, it would require to increase digital literacy on personal data protection within public bodies, so that goals and ambitions are translated into real-world action and preventive actions at the institutional level.

At the same time, enablers and tools such as digital identity (authentication and signature), digital wallets, and citizens' folder mechanisms are fundamental to empower citizens and grant them with agency to timely and proactively access information regarding personal data held and used by public bodies and facilitate the provisions of consent when required.

Furthermore, recent cases in the region related to the potential use of specific software and data analytics by government bodies[77] stress the need for transparency in the use of techniques and tools implying the processing of personal data should be equally and proactively informed to the general society. The latter takes a predominant importance given the risks these applications can pose in terms of social surveillance, the monitoring of actors such as journalists, activists, other actors in society, and the protection of the civic space.[78]

Data governance efforts, including in terms of clearly communicating rights, consent requirements and exemptions to data subjects and increasing digital literacy, need to further stress and raise awareness on consent requirements and exemptions.

The GDPR set a global reference on personal data protection and brought to the public attention the importance of consent in the use of personal data and personal sensitive data by data controllers.[79] Nevertheless, the operationalisation of consent should further acknowledge that, in principle, consent might not be always needed, particularly in the context of governments´ and public bodies´ operations.

The legal, regulatory and policy obligations of public bodies, as data controllers within the public sector, can imply the processing of personal data. Facilitating these data flows is inherent to achieve the mission of the public service and the public administration. The main purpose behind personal data processing can be related to the implementation of public policies, regulatory compliance or to perform a specific public function. These purposes are also linked to the implementation of principles such as *once only* (its application requires personal data to be shared among public organisations), to data governance and management practices related to data interoperability (e.g., population registers), and to decisions on citizens' access to public services. For instance, Article 9 of Uruguay's Law on Personal Data Protection

(Law N° 18331) list the exemptions on which consent from the data subject is not needed,[80] including in the context of the functioning and responsibilities of the state.

Considering the above, investing on data literacy among population and public officials is needed so that consent requirements and exemptions are better understood by all relevant parties, including data subjects. These efforts shall complement the provision of tools (e.g. citizens' folders) data subjects can use to exert their right to privacy and transparency in the use of their data by public authorities.

> Data ethics is still an emerging area, which is commonly understood with a narrower focus on personal data protection.

Interviews and information collected through the survey undertaken in the context of this report indicate data ethics[81] is an area that requires further attention in LAC. In most cases, public officials seemed to understand data ethics and personal data protection as interchangeable concepts which might limit the possibility of advancing efforts in this area.

The importance of generating public sector data, and consequently open government data, which is inclusive and representative of key societal challenges and communities is intrinsic to data ethics and could have a more prominent role in countries' actions. As mentioned during interviews, advancing open data efforts in critical areas of concern in the region such as **gender violence, feminicides, access to justice, violence against LGBTQ+ communities and other vulnerable groups, crime rates, climate change, deforestation and illegal logging, and the sovereignty of data by indigenous communitie**s will require strong commitment at the highest policy and political level in the short term, solid regulatory and institutional frameworks across the public sector, co-ordination beyond borders, and continuity across political administrations and changing political agendas.

OECD tools such as the *Good Practice Principles for Data Ethics in the Public Sector* (OECD, 2021[8]) can provide further guidance in this area, including in terms of data management and AI governance practices. This includes ensuring data is representative, inclusive, and when possible disaggregated and granular, and its sources transparent, recorded, and traceable when needed so that the generation, selection, and use of data does not contribute to perpetuate social inequalities and disparities, including in the context of AI systems.

> The COVID-19 pandemic and the overnight digitalisation of public services placed data security higher in the policy agenda, but there's still a need to invest more efforts to better prepare, manage and respond to digital risks.

LAC countries could pay further attention to data security and to take a more proactive and preventive stand against digital risks rather than reactive one. A joint study from the IDB and OAS found that by 2020, the LAC region "was not sufficiently prepared to handle cyberattacks" with only 7 out of 32 countries having "a critical infrastructure protection plan" and 20 having "established cybersecurity incident response teams, often called CERTs or CSIRTs, which limited countries "ability to identify and respond to attacks" (IADB/OAS, 2020[28])

In May 2022, Peru created the Digital Trust Operational Unit in response to a personal data breach that took place in the Country.[82] This Unit, which operates under the Secretariat of Digital Government, will help to better co-ordinate efforts between the National Digital Security Centre and other actors such as the Personal Data Protection National Authority, the High-Tech Crime Investigation Division, and the

Specialized Prosecution Unit on Cybercrime (PCM, 2022[29]). These efforts are in line with Peru's National Digital Security and Trust Strategy (2021).[83]

Also relevant is the case of Ecuador**,** which adopted the Organic Law on Personal Data Protection in 2021. Thus, addressing a long-standing policy issue that gained further traction in 2019 due to a major personal data breach in the country.

Application cases

Table 3.2 presents a group of projects and/or initiatives showing the practice of using data to achieve specific outcomes among LAC countries. These projects and initiatives were collected from the interviews carried out with countries, through surveys, and from earlier OECD work in LAC at the national level. Examples are neither exclusive nor extensive and are limited only to the projects and/or initiatives raised by interviewees and survey respondents or identified by the Secretariat in the context of earlier, current and broader OECD work and collaborations on digital government, innovation and digital transformation.

Table 3.2. Identified practices relevant to data-driven public sector

Country	Initiative	Brief description	Source/link
Argentina	Open data portal	Central open government data portal	https://www.datos.gob.ar
Brazil	Emergency Aid program	In Combating COVID, Brazil implemented the Emergency Aid program, which benefited around 118 million citizens (55.8% of Brazilians citizens). 67.9 million individuals received the benefit directly. Databases containing information of lower-income citizens, already in place before the pandemic, helped to reach out for the target-public. In addition, the Emergency Aid was publicized on a web portal and an app was designed to get citizens request for the benefit.	Fact-finding interviews. Text adapted from: G20 Compendium on the use of digital tools for public service continuity (OECD, 2021[30])
	Open data portal	Central open government data portal	https://dados.gov.br
Chile	Open data portal	Central open government data portal	https://datos.gob.cl/
Colombia	Open data portal	Central open government data portal	https://www.datos.gov.co
Dominican Republic	Open data portal	Central open government data portal	https://datos.gob.do
	SIUBEN pilot	Pilot project aimed at using data in the context of social security, and used as testing case of the National Interoperability Framework	Fact-finding interviews. https://siuben.gob.do
	Vivienda Feliz	Collection and use of data from various sources to make decision on personal loans. Includes the collection of sensitive personal data (e.g., salaries)	Fact-finding interviews
Ecuador	..	Pilot project to explore data exchange between the Judiciary and other bodies to make judicial procedures more efficient	Fact-finding interviews
	Health appointments	Data interoperability across the public sector to improve the process of making appointments with public health providers and reduce the burden on citizens	Fact-finding interviews
	Open data portal	Central open government data portal	https://www.datosabiertos.gob.ec

Country	Initiative	Brief description	Source/link
	Huella Social	..	..
Mexico	National Digital Platform of the National Anti-corruption System	The National Digital Platform of the National Anti-corruption System access and federates data from different public bodies (including from the local level) to monitor progress of anti-corruption efforts in the Country	Fact-finding interviews https://www.plataformadigitalnacional.org
	Open budget data	Mexico's budget transparency portal provides data in CSV formats in areas such as budget planning and execution, population subsidies, and social programmes.	https://www.transparenciapresupuestaria.gob.mx/
Panama	Data sharing platforms	AIG has developed a number of platforms that underpin the collection and exchange of information, including the National Health Electronic Management (Gestión Electrónica de Salud Nacional), 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).	Adapted from OECD Digital Government Review of Panama (OECD, 2019[31])
	Open data portal	Central open government data portal	https://www.datosabiertos.gob.pa
Paraguay	Datatón 2020	Multi-stakeholder effort organised by the civil society in collaboration with Paraguay's National Innovation Strategy to advance open data initiatives and promote data use	Fact-finding interviews https://latinno.net/es/case/16104/
	Open data portal	Central open government data portal	https://www.datos.gov.py
	..	Data analysis and lineage to track and monitor public procurement processes and identify potential corruption risks. Based on the application of the open contracting data standard. Initiative led by the National Direction of Public Contracting.	Fact-finding interviews
Peru	Covid-19 data	Use of Covid-19 data for foresight and pandemic impact assessments	Fact-finding interviews
	Peru's Geodata Infrastructure	Coherent ad co-ordinated publication and sharing of geodata by public bodies (data hubs or *nodos*) in different portals at the central and local level	Fact-finding interviews https://www.gob.pe/institucion/pcm/campa%C3%B1as/4733-infraestructura-de-datos-espaciales-del-peru-idep
	Open data portal	Central open government data portal	https://www.datosabiertos.gob.pe
Uruguay	Open data portal	Central open government data portal	https://catalogodatos.gub.uy
	..	Data integration and interoperability between the Ministry of Health and the civic register for birth certificates automated generation and issuing.	Fact-finding interviews

..: Missing value or not available.
Source: Based on information and data from indicated sources.

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Notes

[1] See for instance the digital government reviews done in countries like Sweden (OECD, 2021[14]) and Argentina (OECD, 2019[10]), and the 2019 OECD Report *The Path to Becoming a Data-Driven Public Sector* (OECD, 2019[6]).

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[17] For more information see: https://www.redgealc.org/lineas-de-trabajo/interoperabilidad-transfronteriza/.

[18] For more information see: https://www.redgealc.org/lineas-de-trabajo/datos-abiertos/.

[19] For more information see: https://ec.europa.eu/isa2/eif_en.

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[26] For more information see: https://gdpr-info.eu/.

[27] For more information see: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1561563110433&uri=CELEX:32019L1024.

[28] For more information see: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020PC0767.

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[35] For more information see: http://www.pgrweb.go.cr/scij/Busqueda/Normativa/Normas/nrm_texto_completo.aspx?param1=NRTC&nValor1=1&nValor2=84166&nValor3=108486&strTipM=TC.

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[48] For more information see: https://www.boletinoficial.gob.ar/detalleAviso/primera/195154/20181105.

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4 Improving government service design and delivery

This chapter presents the current state of play in the design and delivery of government services in Latin America and the Caribbean (LAC), with particular attention to public sector governance, culture, capacities, and digital tools to enable the digital transformation of government services under a human-centric and joined-up approach.

OECD approach to service design and delivery in the digital age

Public service delivery is the cornerstone of the relationship between citizens and governments. Accessible, responsive, and resilient government services are essential to reinforce democracies, build trust in the public sector and secure timely government support and benefits to their constituents in times of crisis (OECD, 2022[1]).

With the wider availability and increased sophistication of digital technologies, governments have strategized the use of digital tools and data to make public services more user-friendly, transparent, and efficient (OECD, 2020[2]). Additionally, governments world-wide have advanced in offering services through digital channels, including the availability of service delivery portals with informational and transactional services (OECD, 2020[3]).

However, the advantages offered by the digital transformation go beyond putting analogue processes into digital means. They create an opportunity to rethink public services around users and their needs, fostering vertical and horizontal integration within governments as well as human-centric approaches when services are designed and delivered. Similarly, shifting from a silo-based digitalisation and rethinking of government services towards an integrated and omnichannel approach builds on appropriate governance and collaboration mechanisms for joined-up government services as well as a culture around users and their needs to achieve the transformative potential in public service delivery.

In this context, the OECD has assisted member and partner countries in their efforts to improve public sector capabilities to design and deliver services in the digital age through dedicated standards, conceptual frameworks and measurement tools including:

- The **OECD Recommendation of the Council on Digital Government Strategies** which provides a set of principles for adherent governments to digitalise government processes and services closely understanding users and their needs, and to reflect them into government priorities embedded into national digital government strategies (OECD, 2014[4]).
- The **OECD Declaration of Public Sector Innovation** which provides five principles and associated actions that governments or public organisations can use to inform and enhance innovation and its management across the public sector (OECD, 2019[5]).
- The **OECD Digital Government Policy Framework** and the **Digital Government Index**, which together provide conceptual basis and country performance about governments' capacity to understand, meet and eventually anticipate the needs of users in digital transformation of government services and processes (OECD, 2020[2]).
- The **OECD Framework for Service Design and Delivery**, which builds on the contextual, cultural, and enabling factors that define governments' capacity to understand user needs and design and deliver services that solve their final problems (OECD, 2020[6]; Welby and Tan, 2022[7]).
- The **OECD Good Practice Principles for Service Design and Delivery in the Digital Age**, which set guiding provisions for governments to build more equitable, scalable, and accountable public services (OECD, 2022[8]).

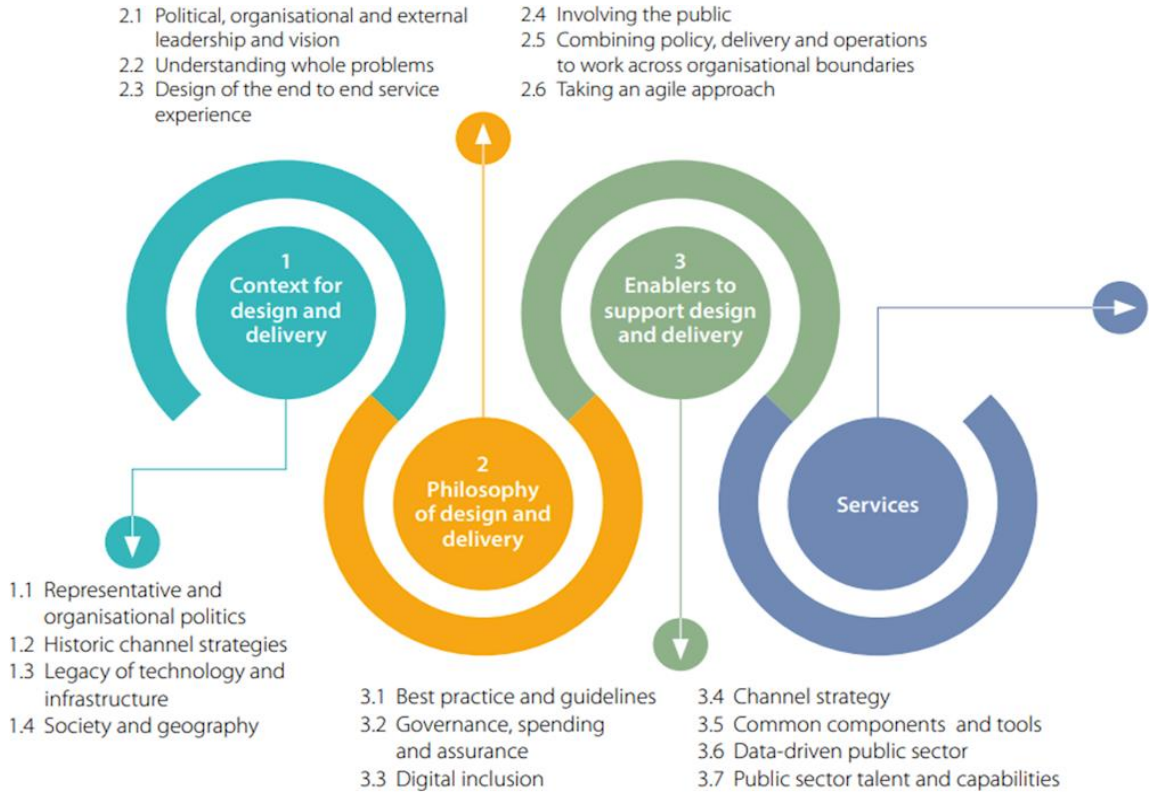
Analytical approach to this chapter

The panorama of service design and delivery in Latin America and the Caribbean (LAC) is structured around selected components of the OECD Framework for Service Design and Delivery to support countries deliver more human-centric, streamlined, integrated and proactive public services (Figure 4.1), which includes:

- The strategic and historical approach to government services provision, including relevant policies, multi-level co-ordination and channels for service transformation in the public sector (***Context for service design and delivery***).
- The cultural and organisational conditions to design and deliver services around users and their needs (***Philosophy of service design and delivery***).
- The common tools and standards that equip service teams to design and deliver user-driven services (***Enablers to support service design and delivery***).

Figure 4.1. OECD Framework for Service Design and Delivery in the Digital Age

Three pillars to design and deliver digitally enabled government services



Source: OECD (2020[6]), "OECD Good Practice Principles for Public Service Design and Delivery in the Digital Age", https://doi.org/10.1787/2ade500b-en.

This chapter will address the design and delivery of public services identifying the most relevant aspects to assess the service approach in LAC countries.

- First, in terms of context for service design and delivery, the analysis covers existing strategies for service transformation including co-ordination with and applicability to sub-national governments, and existing channels approaches.
- Second, the chapter addresses the philosophy for public services by looking at how LAC countries are involving users in meaningful ways to understand and meet their needs, including user research methods and capacities, existing mechanisms and culture to measure performance and satisfaction of services.

- Finally, the chapter looks at the panorama of enablers for service design and delivery in the region, looking at some core building blocks within the digital public infrastructure stack such as digital identity, registries and cloud technologies, as well as existing guidelines and standards for digitally enabled service transformation that secure a whole-of-government and human-centric approach.

Strategies for public service design and delivery

Strategic approach to and co-ordination for service design and delivery

Improving the quality, accessibility, and responsiveness of digitally enabled public services requires public sector institutions to have a common vision about understanding and meeting user needs, as well as work in a co-ordinated fashion to deliver coherent and integrated public services. As indicated in Chapter 1, the OECD Recommendation of the Council on Digital Government Strategies underscores a unified strategic approach to government digital transformation as a fundamental pillar to secure coherent and government-wide change. Similarly, setting a common strategy to guide digital government efforts constitutes a foundation for a transformative and effective governance for digital government, as underlined by the E-Leaders Handbook on the Governance for Digital Government (OECD, 2021[9]).

In line with global trends, the COVID-19 pandemic created a window opportunity for the public services agenda in LAC countries to gain traction within government priorities. Most governments managed to secure the political support to mobilise human and financial resources to secure public service continuity during the critical months of lockdown, rapidly making available online critical services such as social benefits. For example, Brazil saw a drastic increase in the number of available digital public services during the first year of the COVID-19 pandemic (1,000+). Similarly, uptake of relevant digital public infrastructure such as digital identity became pivotal for citizens to benefit from existing digitalised services. For instance, Chile's digital identity system, ClaveUnica, increased the number of active users from 6.2 million to 10 million during 2020, and observed an increase of 500% in the total number of transactions during the same period.

LAC governments are still at an early stage to have a forward-looking approach that builds public services around users and their needs. The informality and inequality that characterise the region (see Chapter 1) sets a context in which most efforts undertaken still focus largely on ensuring the availability of the necessary digital public infrastructure and connectivity for digital public services to be deployed and accessible across the territories – as documented through country surveys and fact-finding interviews. This is reflected in the predominant focus of national digital government strategies (NDGS) given to advancing the development of foundational digital government tools (e.g. interoperability, digital signature, digital identity), and setting commitments to progress towards paperless operation models without always integrating users, their needs and the mechanisms required to understand and solve their problems. Addressing these issues requires a concerted, whole-of-government and strategic approach towards service design and delivery that articulates a common vision with government capacities to better understand and meet user needs, as outlined in the OECD Good Practice Principles for Service Design and Delivery in the Digital Age (OECD, 2022[8]) (see Box 4.1).

Box 4.1. OECD Good Practice Principles on Service Design and Delivery in the Digital Age

Starting in October 2021, the OECD developed a set of Good Practice Principles for Service Design and Delivery in the Digital Age. This work drew on the combined insights from previous work in this area, which highlighted the emergence of similar activities in multiple governments where shared values were being embodied into sets of principle that inform and shape service design and delivery activities. Establishing good practice principles reflects a growing consensus around the priorities for governments in approaching public services in the digital age

The following principles were drawn from studying the standards and principles guiding digital government in Australia, Canada, Denmark, Finland, France, Germany, Italy, Mexico, the Netherlands, New Zealand, Scotland, Singapore, the United Kingdom and the United States. In total, approximately 300 distinct ideas were contained within these standards.

1. Build accessible, ethical and equitable public services that prioritise user needs, rather than government needs.
   a. Understand users and their needs.
   b. Make the design and delivery of public services a participatory and inclusive process.
   c. Ensure consistent, seamless and high-quality public services.
2. Deliver with impact, at scale and with pace.
   a. Create conditions that help teams to design and deliver high quality public services.
   b. Develop a consistent delivery methodology for public services.
   c. Curate an ecosystem of enabling tools, practices and resources.
3. Be accountable and transparent in the design and delivery of public services to reinforce and strengthen public trust.
   a. Be open and transparent in the design and delivery of public services.
   b. Ensure the trustworthy and ethical use of digital tools and data.
   c. Establish an enabling environment for a culture and practice of public service design and delivery.

Source: OECD (2022[8]), "OECD Good Practice Principles for Public Service Design and Delivery in the Digital Age", https://doi.org/10.1787/2ade500b-en.

Evidence from the data gathering process conducted in the context of this report indicates that LAC governments are addressing the strategic approach to government service design and delivery from different perspectives, including NDGS, , formal requirements in legal frameworks, dedicated policies for government service transformation, and guidelines to assist public sector institutions in the digitalisation of government services.

- Argentina: The Secretariat for Public Innovation at the Cabinet Office published the National Strategy for the Federal Programme of Public Digital Transformation[1]. The strategy outlines online services as one of its core pillars building on the development of common digital public infrastructure and calls for the implementation of the *once-only* principle as well as the development of dedicated institutional structures responsible for its implementation.
- Barbados: The country progresses towards strengthening digital public services in the context of the Modernisation of the Public Sector Programme[2] supported by the Inter-American Development Bank (IDB). The Programme aims to bridge gaps in terms of digital public infrastructure and

accessibility to enable an increased digitalisation of government services and uptake of digital channels.

- Brazil: The Secretary of Digital Government at the Ministry of Management and Innovation in Public Services published the Digital Government Strategy 2020-2022[3] (recently extended until 2023). The strategy builds on six pillars, one of which reflects the user-centred approach to digital services and the importance of understanding and meeting user needs.
- Chile: The Digital Transformation Law 21.180[4] is currently driving the strategic efforts for the digitalisation of administrative procedures in Chile. Under the co-ordination of the Digital Government Division (DGD) at the Ministry General Secretariat of the Presidency (MINSEGPRES), it mandates all public sector institutions (both at central and local levels) to digitalise all administrative procedures to transit towards a paperless administration (OECD, 2020[6]). It requires the development of reusable building blocks to for government institutions to digitalise administrative procedures, including interoperability, digital notification, and digital identity systems.
- Colombia: The Ministry for Information and Communication Technologies (MINTIC) issued the Policy for Digital Government[5] (updated in 2022) which gives a prominent role to users in the digitalisation of government services and following a long path of digital development within the Colombia public sector (OECD, 2018[10]). This includes the development of the Citizen Folder and other common enablers for digital service delivery. Similarly, Colombia also complements this approach with the work of the Administrative Department for Public Function (DAFP) and dedicated guidelines to support the rationalisation and streamlining of government services.[6]
- Costa Rica: The Ministry for Science, Innovation, Technology and Telecommunications (MICITT) issued the Strategy for the Digital Transformation of Costa Rica 2018-2022.[7] This policy instrument underscores the importance of advancing towards transparent and accessible digital services in the country, as well as promoting the integration between central and local governments for service provision.
- Dominican Republic: The former Government Office of Information Technologies and Communications (OGTIC, formerly OPTIC) issued in 2019 the Technical Standard for Delivery and Automation of Public Services.[8] The document frames government actions regarding channels strategy, administrative simplification and relevant building blocks for service delivery.
- Ecuador: The Undersecretariat for Quality in Public Service at the Ministry of Labour issued a Technical Standard for the Continuous Improvement and Innovation in Processes and Services.[9] This standard establishes government protocols and procedures to continuously assess government services as well as the responsibilities and roles within the Ecuadorian public sector for its implementation.
- Jamaica: While the country does not have a recent consolidated strategy for digital government, several efforts are being undertaken to strengthen the governance for digital government as well as to advance towards a mobile-first and omnichannel approach to service delivery in the country.[10]
- Panama: The Authority for Government Innovation (AIG) issued the National Digital Agenda 2022-2023.[11] The document articulates Panama's vision for digital government, with particular prominence to public digital infrastructure for service delivery, as well as a number of sectoral initiatives to digitalise government services, in line with the recommendations made by the OECD (OECD, 2019[11]).
- Paraguay: The Ministry for Information and Communication Technologies (MITIC) issued the National Agenda for Digital Transformation[12] with a dedicated pillar on digital government. Actions in this area aims to develop core building blocks for digital service delivery, including a citizen folder, document management systems and interoperability.

- Peru: The country has been working for years in the consolidation of the digital government ecosystem, including governance and service delivery aspects (OECD, 2019[12]). In this context, Peru enacted in 2021 the Digital Government Law[13] with the purpose of structuring the governance for digital government as well as the mandate of the Secretariat for Digital Government (SEGDI) at the Presidency of Council of Ministers. The Law and its respective implementation decree[14] includes provisions for the development of digital public infrastructure such as digital identity and interoperability, as well as for promoting accessibility and usability of digital public services.
- Uruguay: The Agency for Electronic Governance and Information and Knowledge Society (AGESIC) issued the Digital Government Plan 2025[15] which sets as a goal the redesign of government services to solve user needs. It includes provisions to streamline, integrate and offer proactive services to users, as well as to advance towards an omnichannel approach that blends the online and offline experience of users with Uruguay's government. Additionally, the country has set ambitious goals to advance in the integration of government services as well as the provision of proactive services.

The extent to which public service goals are materialised in concrete actions to create a service design culture and practice differ in line with the digital government maturity observed as part of this review. Plausibly, the inequality observed in the development of digital government in LAC makes that countries have targeted service transformation goals to different levels. While some countries like Barbados, Jamaica and Bolivia had made commitments to close accessibility gaps, develop foundational digital public infrastructure and create government central service platforms, others such as Brazil, Colombia and Uruguay have achieved greater digital maturity to embed service design within their strategic goals for digital government in the recent years. Furthermore, some countries have defined specific targets or KPIs to achieve regarding digitalisation of government services. This includes Brazil and the goal of 100% digital administrative procedures by 2023; or Chile which set a similar goal for 2027.

Responsibility for steering service design and delivery in LAC countries differ also regarding the maturity and empowerment of existing digital government authorities. This is reflected in the extent to which dedicated service delivery teams have been established to support public sector institutions in their digital transformation efforts, as well as the degree of responsibility has been given to digital government authorities to set service standards, technical guidance, or regulatory frameworks. For instance, in Uruguay, Brazil, the Dominican Republic, and Paraguay digital government authorities have the mandate to steer the public services agenda including capacities to define user-centric approaches to guide digitalisation of government services. In other cases, such as Barbados, Bolivia, Argentina and Peru, the mandate does not clearly define service design actions within the remit and capacity of digital government authorities.

Other countries see the responsibility for service design is fragmented across several public sector institutions, calling for greater co-ordination to secure a unified and coherent public services agenda. This is the case of Colombia and the existing co-ordination between MINTIC, the National Planning Department (DNP) and DAFP to align the work on service design with administrative simplification efforts; or in Chile between the Digital Government Division and the Institute for Social Security (IPS) which is responsible for the management of service channels including online and offline means, as well as with the Government Innovation Lab which has developed service design capacity linked to the public sector innovation policy in the country (OECD, 2020[6]). In Ecuador, there is a dedicated Undersecretariat for Quality in Public Services at the Ministry of Labour, which requires close co-ordination with the digital government authority within the Ministry for Telecommunications (MINTEL). In several countries, this also involves co-ordination between public sector organisations that are responsible for the digitalisation of government services to businesses, including efforts on administrative simplification such as the cases of Argentina (CAF, 2020[13]) and Colombia.[16]

Acknowledging the institutional diversity across the region, looking ahead it would be important that **LAC countries advance towards defining specific mandate and responsibilities regarding the public service agenda** that go beyond the development of core building blocks and give a more prominent role to user research and user-centric design in the digitalisation of government services.

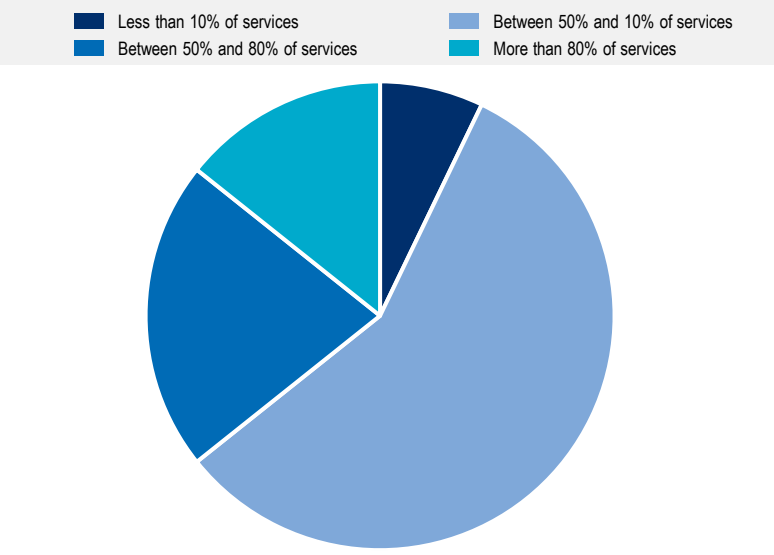
Given the scope of digital government policies to support the rethinking of government processes and services benefiting from the extensive use of digital tools and data, digital government authorities are placed in a key position to be also responsible for the service agenda. However, this requires **evolving the mindset, mandate and capacities of digital government authorities together with the enactment of changes to institutional structures, and the deployment of policy tools and resources to further develop service design** within national digital government strategies (NDGSs). Advancing public sector capacities for service design would complement the technical development of building blocks for government digitalisation and/or the management of digital channels that currently seems more present in LAC governments.

Aligning central and local efforts to public service design and delivery

Another core aspect for the development of service design and delivery in LAC governments refers to the interplay between central and local governments in the implementation of digital government strategies and the digitalisation of services provided at the local government level. Local governments are often the closest point of interaction between users (citizens and businesses) and the public sector. With the large territorial diversity in LAC government and the vast fraction of the population still living in remote areas (OECD et al., 2020[14]) local governments have a fundamental role in service delivery in the region. Local governments are responsible for between 10% and 50% percent of total services in 8 out of 13 surveyed countries.

Figure 4.2. Local governments play a key role in service delivery in LAC

Relationship between number of services delivered by central/federal vs. local governments



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

LAC countries are progressively developing policies and actions that promote alignment between digitalisation of local government services with overall government priorities on digital government. In Chile, the Digital Transformation Law 21.180 requires local governments to digitalise administrative processes and go paperless building on the close co-ordination between the Digital Government Division and the Undersecretariat for Regional Development (SUBDERE) at the Ministry of Interior.

In Ecuador and the Dominican Republic, the existing technical standards that legally structure the digitalisation of government services are also applicable to subnational governments. In Colombia, the work of MINTIC on service design and delivery has a predominant focus on improving the co-ordination between national and sub-national governments, including their involvement in decision-making. Within these efforts to promote multi-level alignment for the digitalisation of government services, some countries have established dedicated programmes at the central level to assist local governments in this process. For example, Costa Rica has included the initiative Digital Local Governments in the NDGS, which aims to equip local governments with common tools for service digitalisation and to integrate them into a single service delivery platform.

In Uruguay, AGESIC issued a dedicated strategy for digital government in sub-national governments[17] working with the Office of Planning and Budgeting (OPP) and the Association of Mayors with particular emphasis on simplification of administrative procedures. This initiative comes to complement existing support from AGESIC through the Interior Co-operation Programme (PCI) for local governments to adopt existing digital tools and common enablers (e.g. document management systems and service delivery interfaces) to digitalise local government services (see Box 4.2). In Argentina**,** the Undersecretariat for Public Innovation is implementing since 2022 the Federal Programme for Public Digital Transformation to structure multi-level co-operation to assist federal governments in the adoption and use of digital tools to transform their processes and services.

Box 4.2. "Programa de Cooperación Interior" in Uruguay

The Internal Co-operation Programme implemented by AGESIC aims to support regional and local governments in Uruguay to improve quality of services offered to citizens through the use of digital tools. Framed under the Digital Government Plan 2025, through this programme AGESIC aims to:

- Develop digital government capacities and skills to support the implementation of the national digital government strategy and support change management.
- Enhance information security, considering trust and integrity as pillars for the management and availability of government data.
- Secure digital public infrastructure, including needed tools and common resources for local governments to implement their digital transformation ambitions.
- Promote digitalisation of government services with a user-centric approach, including service design and omnichannel strategies that improve the capacity of local goverments to understand users and meet their needs.

Source: Government of Uruguay (2018[15]), *Gobiernos subnacionales*, https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/gobierno-digital/cooperacion-interior.

Despite the growing relevance of sub-national governments within central government digital transformation policies, evidence from the fact-finding calls and data collection process indicates that **further efforts are needed to anchor the digitalisation of local government services within digital**

government strategies and policy frameworks. Examples such as from Uruguay and PCI can be of relevance for LAC governments to expand the coverage of existing policies for digitalisation of (sub)national governments, learning from the structures, financial incentives and co-ordination in place to secure coherence and alignment.

Channels strategy and users

Public service delivery has been traditionally implemented through physical access such as public sector institutions premises or centralised delivery offices. The widespread availability and use of digital technologies has opened new opportunities to deliver services through digital means and channels including mobile devices and online platforms. Countries progressively adhere to the development of multichannel service delivery models in which services are offered through different channels (face-to-face, mobile, website, email) to increase convenience and accessibility for users. However, the multichannel approach largely focuses on the convenience for users to access services rather than on ensuring a services experience that is consistent, coherent, and integrated across channels. More forward-looking approaches such as omnichannel service delivery aim also to secure a coherent and integrated experience to users regardless of their preferred channel (OECD, 2020[6]; 2020[2]).[18]

Most governments in LAC have adopted multichannel service delivery approaches in contrast to a few that are delivering omnichannel government services that provide a seamless user journey across multiple channels. This reflects the still limited strategic approach to address service design and delivery beyond proving access to digital services in LAC as well as to transit towards a digital by design approach in which government services are digitally enabled from the outset (OECD, 2020[2]; 2018[16]). For example, in Chile the omnichannel approach to service delivery is branded under ChileAtiende (OECD, 2020[6]) under the remit of the Institute for Social Security (IPS). Pension delivery has played a key role to shape Chile's omnichannel strategy since IPS had the largest network of delivery spots across the country (200+) which are integrated with telephone and digital channels – the latter co-ordinated with the Digital Government Division. In Uruguay, AGESIC is also responsible for the Integrated Service Delivery System[19] which blends online and offline delivery channels. Both Chile and Uruguay manage their omnichannel approach through Customer Relationship Management systems (CRM) to effectively monitor use and workload of different channels across the countries.

The development of omnichannel approaches requires sound strategies, co-ordination mechanisms and enabling conditions (from funding to effective data sharing within the public sector). In the cases of Chile and Uruguay, efforts to integrate channels under a unique experience have required more than a decade to consolidate and there are still challenges to make sure different channels are fully aligned and users can benefit from an equal and consistent service delivery quality in each of them. Given the diversity, rurality and inequality across countries and regions in LAC, other countries could consider advancing and aligning the digitalisation of government services through an omnichannel approach that secures an inclusive delivery, respects user preferences and leaves no one behind.

Across different channels, digital service delivery platforms have a primary role in providing easier access to either informational or transactional services in LAC countries. Regarding the digital experience of users with government services in LAC, all surveyed countries have a central service delivery platform that offers information and/or transactional services (see Table 4.1). This represents a positive step ahead compared to the state of the art in 2014, where only 66% of LAC countries had at least an informational service delivery website (OECD, 2018[16]). Progress towards transactional services is clear in the region, with only Barbados and Jamaica only offering informational services through their respective digital channels. Furthermore, and in the context of rising coverage and uptake of mobile devices and connectivity (OECD et al., 2020[14]), mobile apps have gained traction across governments in the region. In Argentina (MiArgentina), Brazil (gov.br), Ecuador (Gov.EC), Dominican Republic (Servicios Públicos RD) and Uruguay (gub.uy), governments have developed mobile apps that offer digital services at convenience.

Table 4.1. Panorama of online central service delivery platforms in LAC

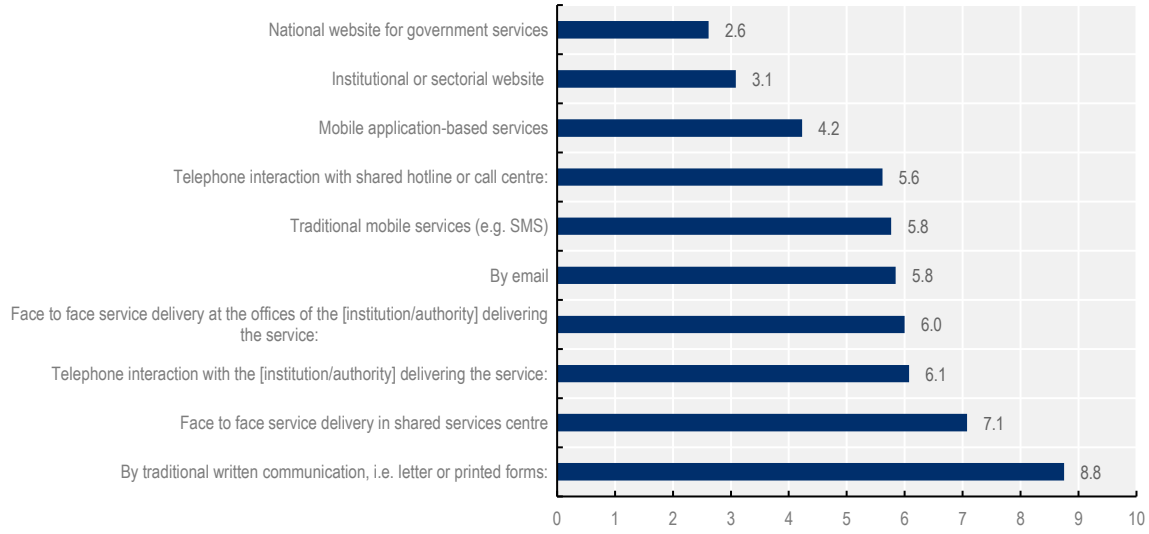
Country	Website	Service catalogue	Informational services	Transactional services
Argentina	https://www.argentina.gob.ar/	Yes, for between 90%-50% services	✓	✓
Brazil	https://www.gov.br	Yes, for 100% services	✓	✓
Barbados	https://www.gov.bb/	Yes, for between 50%-10% services	✓	×
Chile	https://www.chileatiende.gob.cl/	Yes, for 100% services	✓	✓
Colombia	https://www.gov.co/	Yes, for between 90%-50% services	✓	✓
Costa Rica	http://gob.go.cr/	Yes, for between 50%-10% services	✓	✓
Dominican Republic	https://serviciosrd.gob.do/	Yes, for between 90%-50% services	✓	✓
Ecuador	https://www.gob.ec	Yes, for 100% services	✓	✓
Jamaica	https://www.gov.jm	No	✓	×
Mexico	https://www.gob.mx/	Yes, for between 90%-50% services	✓	✓
Panamá	https://www.panamadigital.gob.pa/	Yes, for between 50%-10% services	✓	✓
Paraguay	www.paraguay.gov.py	Yes, for between 90%-50% services	✓	✓
Peru	https://www.gob.pe/	Yes, for between 50%-10% services	✓	✓
Uruguay	https://www.gub.uy/tramites/	Yes, for 100% services	✓	✓

Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico Panama, Paraguay, Peru and Uruguay.
Source: Based on OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

Digital channels played a key role to secure service continuity in the aftermath of the COVID-19 pandemic (OECD, 2021[17]). In LAC, preference for digital channels took up during lock-down period (Figure 4.3) with national and institutional websites as well as mobile app as primary means to access government services. Within a social and economic context that required easy access to public services to mitigate the consequences of the COVID-19 pandemic, several countries encountered during this period an opportunity to mobilise political support and resources to intensify previous efforts to digitalise government services (IDB, 2022[18]; OECD, 2020[19]; 2021[20]). Additionally, governments' capacity to digitalise government services largely leveraged the maturity of existing digital government strategies, policies, and tools to rapidly react and respond to the need to secure service continuity (OECD, 2021[17]). In Brazil, the Secretary for Digital Government managed to digitalise more than a 1,000 federal services after the beginning of the pandemic and in a short period of time during 2020. In Ecuador, MINTEL managed to increase the number of services from 35% to 70% during 2020.[20] In Chile, tools such as SIMPLE, a widespread public sector business modelling process tool (BPM) supported a rapid transition of services to digital channels in line with the mandate of the Digital Transformation Law 21.180 and the Presidential Instructive for Digital Transformation and a Paperless Administration.[21] However, evidence from the fact-finding calls with LAC governments and digital government authorities questions the extent to which the **rapid digitalisation of government services is reflecting putting analogue process into digital means (digitalising bureaucracy) rather than a meaningful service transformation (i.e. an opportunity to rethink processes and services to deliver more convenient, user driven services).**

Figure 4.3 Preferred service delivery channels during the COVID-19 pandemic

Average user preferences over existing channels across surveyed countries, with 1 highest preference and 10 lowest preference



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Finally, service catalogues play a key role in mapping government services and as tools to support an end-to-end approach when integrating different interactions or fragmented formalities that can constitute a discrete service. Surveyed countries indicate that almost all of them count with a service catalogue, although with disparity regarding their coverage out the total number of government services. As flagged previously in Table 4.1, only Brazil, Chile, Uruguay and Ecuador (see Box 4.3) indicated having a service catalogue covering 100% of government services. For most of LAC countries, progressing towards a comprehensive repository of government services would be a pillar in the design and delivery of proactive and streamlined services.

Box 4.3. The path towards www.gob.ec and the Unique Register of Services in Ecuador

The strategic approach for the digitalisation of government services in Ecuador builds on the Law for service streamlining and service catalogue[22] issued in 2018. As part of this work, Ecuador implemented during the same year the first version of the national service delivery platform www.gov.ec in order to centralise access to both transactional and informational government services. Between 2019 and 2021, the government managed to offer almost 70% of government services online, including the development of dedicated mobile delivery channels.

Source: Government of Ecuador (n.d.[21]), *Acerca de GobEC*, https://www.gob.ec/acerca-gobec.

Strengthening a public sector culture and practice around users and their needs

Involving and understanding users and their needs

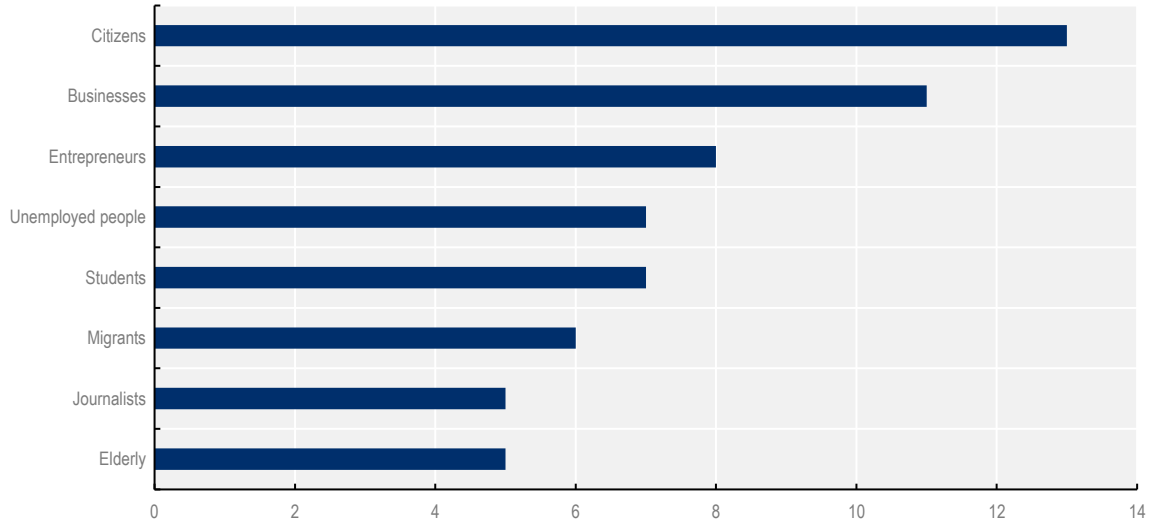
The ultimate goal of public service delivery is to solve users' end-problems. The approach to understanding and meeting these needs may differ according to the level of digital government maturity, the mindset and culture around involving users in service delivery and policy making, and the tools in place to capture those needs and transforming them into responsive and accessible services (OECD, 2020[2]; 2020[6]). The departing point for OECD members is not positive: in most countries, citizens are not confident that services are responsive to their needs and feedback (OECD, 2022[1]).

Delivering services that meet user needs is grounded on good service design. The most effective experience with government services should allow users to access and complete simple processes, based on governments' re-using data to anticipate and proactively deliver services. Additionally, OECD countries are advancing towards meaningful ways to better involve users in service design and delivery to secure that services meet the expectations and needs of citizens and businesses (OECD, 2020[2]).

In LAC, embracing a mindset and culture that builds on user research to better understand user needs would be particularly relevant considering existing social and economic inequalities as well as the yet limited engagement of targeted groups in digital service delivery such as elderly and migrants (Figure 4.4). This requires governments to develop organisational capacities for a government-wide culture of user research that do not see interactions in isolation but aim to understand and meet whole problems, including agile development and design methods that assist service teams throughout the digitalisation process (Figure 4.5).

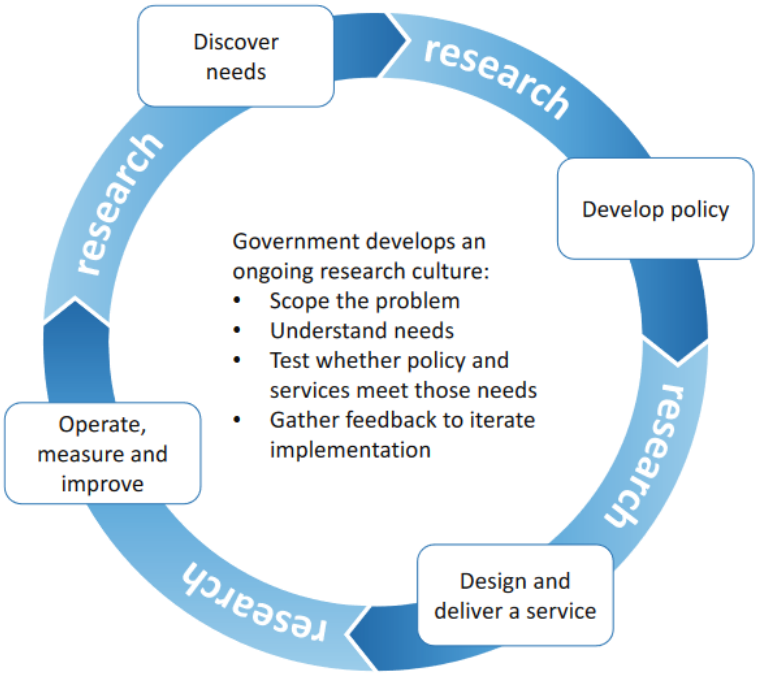
Figure 4.4. Main users of the digital service delivery channel

Total of surveyed countries indicating each option as main target user



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Figure 4.5. An agile approach to involving users in service design and delivery



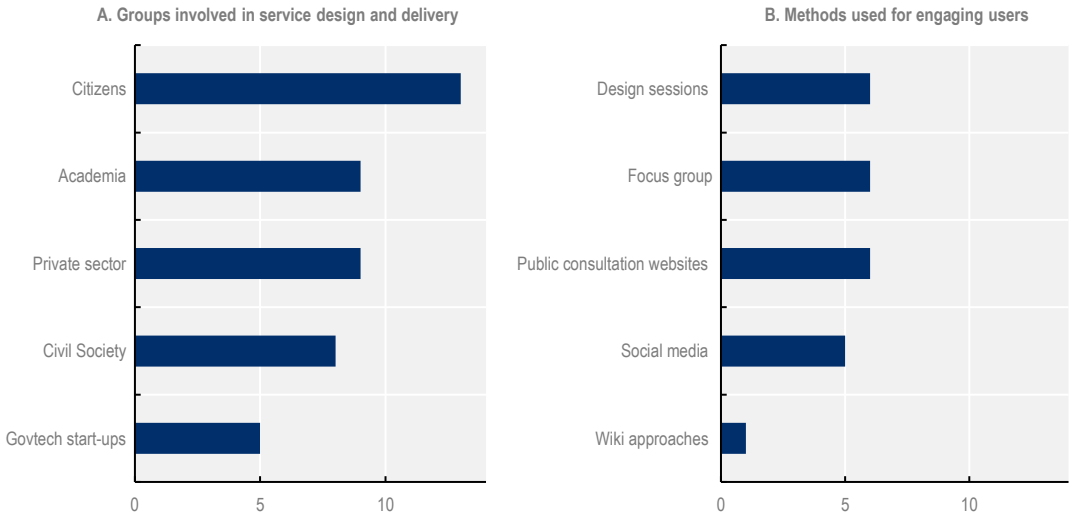
Source: OECD (2021[22]), *Digital Government Review of Slovenia: Leading the Digital Transformation of the Public Sector*, https://dx.doi.org/10.1787/954b0e74-en.

In LAC, the culture of public administration is characterised by a predominant legalistic mindset in administrative procedures and services that constrains much of digitalisation efforts in a context which is also characterised by limited financial and human resources. In effect, in LAC "government transactions are often headaches. Public institutions rarely co-ordinate with each other, still rely on paper, and are more concerned about fulfilling bureaucratic requirements than meeting citizens' needs." (Roseth, Reyes and Santiso, 2018[23]). The redesigning of services often requires going through administrative simplification processes to revise existing regulatory frameworks to identify blind spots and possibilities for data sharing and integration of multiple transactions into more comprehensive services, e.g. organised through life experiences or life events. However, **the legal culture that impacts service transformation often creates incentives for a top-down approach (i.e. interpretation rather than understanding of user needs) and an inward-looking mindset (i.e. oriented to internal needs and bureaucracy rather than users) that limits the extent to which digital services can be transformed to meet the expectations of increasingly demanding users with changing needs.**

Surveyed countries in this report indicate that citizens remain the primary group involved in service design and delivery (see Figure 4.6). However, the quality of this process, intended as the mechanisms for engagement and user research in place to effectively understand user needs, remain limited across most countries. Evidence from fact-finding meetings sheds light on these results: when asked about how users are involved in service design, most government organisations indicated that they interpret users and their needs and inform them about possible solutions (e.g. by testing alternatives) rather than engaging them from the outset. **Digital government authorities often lack human resources and sufficient digital tools and standards on user research and service design to equip public sector institutions when digitalising their government services.**

Figure 4.6. Engaging users in service design and delivery: Groups involved and research methods

Number of surveyed countries selecting one of the options listed below



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Some LAC countries are experimenting with user research and creating a culture for service transformation around user needs. In Chile, the Laboratorio de Gobierno has a dedicated department for service design and contributes to priority areas to transform service delivery, for example in the implementation of Protected Middle-Class Network (*Red Clase Media Protegida*) in collaboration with the Digital Government Division, the Ministry for Social Development and relevant social service delivery institutions.[23] In Uruguay, AGESIC developed a toolkit with service design tools to better understand, empathise, co-create and experiment with users.[24] In Brazil, the Secretary of Digital Government has started to experiment with user-centric approaches to service design, but interviewees agree is rather a new approach. In the Dominican Republic, OGTIC developed the Dominican Design System, a set of design methods to secure a coherent and consistent experience across government platforms.[25] In Colombia, MINTIC has signed a Memorandum of Understanding with UK's Government Digital Service for sharing of good practices with particular focus on how Colombia can learn from existing UK practices on service design[26] and implemented a dedicated framework to assist public sector institutions when designing government services (see Box 4.4).

LAC countries are also addressing user engagement in service design through the adoption of agile development methodologies that help better define problems, involve users and find solutions through iteration, experimentation and testing prior to scale up (OECD, 2020[6]). In Peru, the Secretariat for Digital Government promotes a common standard for agile development of digital services building on the good practices from UK's GDS Service Standard.[27] In Uruguay, AGESIC developed a toolkit for agile development that includes service design and project/product management guidance.[28] Yet, **consistent and widespread adoption of agile methodologies in LAC governments remains limited.**

While positive, examples listed above unveiled the absence of a consistent approach in LAC to user research and service design which may require further national and regional efforts. In line with best OECD practices, **LAC governments could further develop service design capacities as part of the ongoing recovery to the COVID-19 pandemic, in which several governments have increased the financial resources and strengthened digital government policy frameworks and strategies.**

Box 4.4. Service Design Toolkit in Uruguay

AGESIC established a dedicated set of methods and supporting instruments for the implementation of its service design standard. The purpose of this toolkit is to assist public sector institutions to operationalise the service standard under the leadership of the Social Innovation Lab for Digital Government (LAB) at AGESIC. The toolkit includes dedicated supporting material for understanding users and needs, identify problems and improve services, focus groups, among others.

This toolkit is part of a broader strategic approach to secure a user-centred approach to design and deliver government services in Uruguay given the legal mandate of AGESIC as public sector organisation to promote and implement actions to strengthen the relationship between citizens and the State.

Source: Government of Uruguay, *Metodologías LAB*, https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/tematica/metodologias-lab.

Measuring service performance and user satisfaction

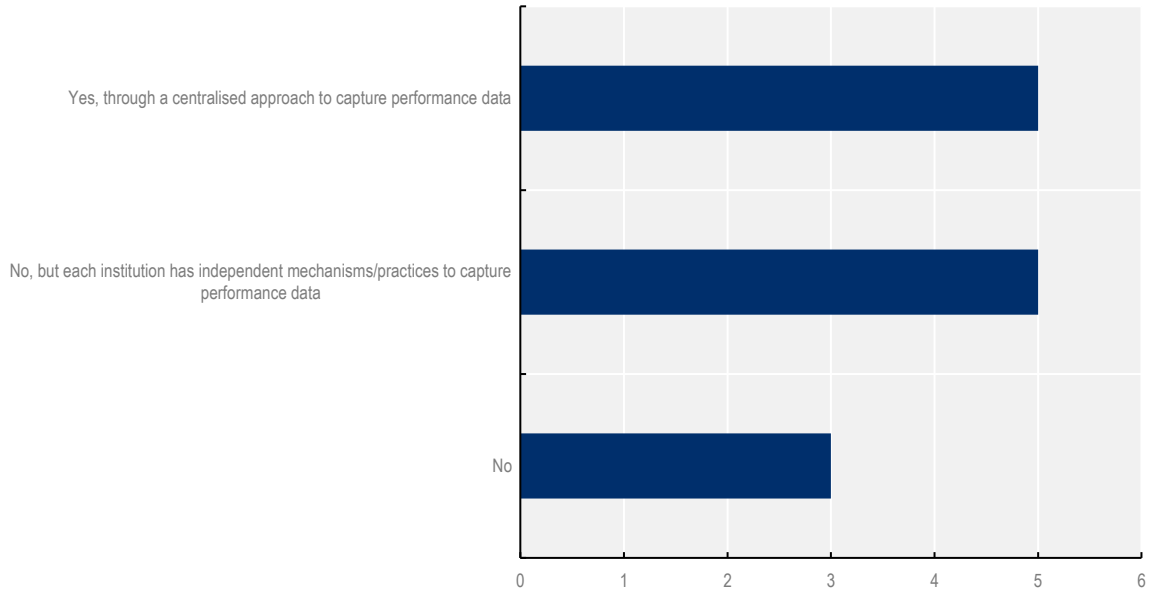
Delivering responsive and convenient services to users requires continuous improvement and a systematic approach to capture performance, opinions and satisfaction as well as to incorporate them into feedback loops (OECD, 2022[8]). LAC countries are still progressing towards having a consolidated approach to measuring and using performance data to improve service design and delivery. Only 5 out of 13 surveyed countries have centralised mechanisms in place to capture some level of service performance data at central/federal levels (e.g. number of visits, transactions per channel, transactions completed), while in an equal number of countries specific public sector institutions may collect similar data for the services they offer. However, in most of cases performance measurement systems focus on digital services, in line with previous findings about the limited omnichannel approach to government services in LAC. **Countries in LAC do not have a consistent and comprehensive approach to collect performance data** as most data points refer to basic indicators such as number of visits (inc. per channel), or average processing time.

Collecting performance data enables timely decision-making to improve service design and delivery. In line with the limited capacity to collect performance data in a consistent way, only a few countries in LAC are using this data in a consistent and coherent way to improve service design and delivery. For example, in Brazil the Secretary for Digital Government has developed a monitoring system for federal *digital* services which includes information about access, availability and use of services.[29] In Chile, IPS's ChileAtiende network manages channel performance through a dedicated CRM that provides information about workload and in-person demand to centralised decision making about how to speed up service delivery in specific offices (OECD, 2020[6]). At the same time, ChileAtiende and the Digital Government Division manage a service performance dashboard with transactional services to monitor adoption and migration from in-person to digital channels[30] serving to prioritise what services will be digitalised. In Uruguay, AGESIC has an integrated service system which monitors performance of online and offline services as part of the omnichannel strategy in place in the country (Box 4.5). AGESIC complements this system with cost-benefit analysis about digitalisation of government services (see Chapter 2).

Finally, user satisfaction complements service performance data to assess the experience of users when accessing a certain service. As covered in the section Monitoring and Assessment in Chapter 2, countries are taking up satisfaction measurement as part of evaluating the success of digital transformation efforts. However, it is important to consider that the feedback loop of satisfaction data is longer and more complex

than real-time and granular service performance data, and **LAC countries could consider embedding existing efforts on user satisfaction measurement within a broader service improvement agenda** that integrates data captured throughout service delivery (performance data) and once services have been accessed (satisfaction data).

Figure 4.7. LAC countries measuring service performance of transactional services



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Box 4.5. Integrated Service Delivery System in Uruguay

AGESIC is responsible for the design and delivery of government services in Uruguay. For this purpose, AGESIC has implemented a dedicated and integrated service delivery system that equips both AGESIC and public sector organisations in the process of designing and delivering government services to citizens and businesses.

The system includes dedicated actions on four different areas, including:

- Single information repository (service catalogue) for government services.
- Dedicated delivery channels including web, face-to-face and telephone channels.
- An integrated customer relationship management system (CRM) to monitor service performance across channels.
- Management of service delivery workforce.

Figure 4.8. Uruguay's Integrated Service Delivery Model

Source: Government of Uruguay (n.d.[24]), *Modelo de Atención a la Ciudadanía - Componentes del Modelo*, https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/comunicacion/publicaciones/modelo-atencion-ciudadania/modelo-atencion-ciudadania/componentes-del.

Setting enabling conditions for digitalisation of government services

Guidelines, standards, and capacities

A coherent and whole-of-government omnichannel approach to service design and delivery builds on the goal of offering a convenient, cohesive, and integrated experience to users. Going digital government implies developing common guidelines and standards that help public sector institutions design and deliver digitally enabled services while consolidating a unified and seamless experience to users (OECD, 2020[2]). This includes *actionable* guidance and mechanisms to ensure consistency of accessibility of digital services, user engagement, procurement of digital goods and services, and assurance prior and during service development.

In the context of LAC, it is important to distinguish the extent to which regulatory frameworks can effectively equip public sector institutions in the design and delivery of services. Laws and similar regulatory frameworks often define *what* should be done, as opposed to guidelines and standards that frame *how* a certain action should be done. In this regard, evidence from the fact-finding meetings with LAC countries indicate that **more efforts are needed to translate regulatory frameworks into actionable guidance that effectively support service design and delivery.**

Table 4.2 gives a panorama of the availability of at least one written central/federal guideline or standard supporting service design and delivery in surveyed LAC governments. Regarding accessibility, it is the most widespread guideline provided from the central/federal government. In Chile, the Digital Government Division issued guidelines to assist in the design of public sector institutions' websites adhering to accessibility principles and standards such as W3C.[31] In Colombia, MINTIC published similar guidelines that accompany the UI/UX toolkit platform that equip public sector institutions to align institutional branding and website to the GOV.CO standard.[32,33] In Costa Rica, MICITT's National Code for Information Technologies structures guidance on accessibility along with cybersecurity, cloud and interoperability.[34]

Several other LAC countries have issued similar guidance addressing the technical user-centricity of digital government services, including Paraguay,[35] Peru,[36] Bolivia,[37] the Dominican Republic[38] and Brazil.[39]

Table 4.2. Availability of at least one written central/federal guideline and/or standard supporting service design and delivery

Country	Accessibility of/to digital government services	Engagement of users in the service and policy design process	The procurement and commissioning of digital, data and technology projects	How to assure the quality and consistency of digital, data and technology projects during design and prior to launch
Argentina	✓	×	×	✓
Brazil	✓	✓	✓	✓
Barbados	✓	✓	×	✓
Chile	✓	✓	✓	✓
Colombia	✓	×	✓	✓
Costa Rica	✓	×	✓	✓
Dominican Republic	✓	✓	✓	✓
Ecuador	✓	✓	✓	✓
Jamaica	×	×	×	×
Mexico	×	×	✓	×
Panamá	✓	×	✓	✓
Paraguay	✓	✓	×	✓
Peru	✓	✓	✓	✓
Uruguay	✓	✓	✓	✓

Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) and desk research.

In line with existing limited forward-looking approaches to user-driven service design and delivery in LAC governments, only a few countries have consistent guidelines equipping service teams when engaging users in the design and delivery of services. In Colombia, MINITC's Standard for Service Design[40] structures meaningful engagement of users through 11 principles – from identifying and understanding users to continuous improvement practices and feedback loops. This standard is coupled with dedicated guidance to service simplification and rationalisation.[41] In Peru, SEGDI issued practical guidance on the same aspects, inspired by the work of OECD countries such as the United Kingdom and Canada[42] (Box 4.6). In the same line, in Uruguay AGESIC issued similar guidance inspired by the work of UK's Government Digital Service.[43]

Box 4.6. Guidance for service design in Peru and Colombia

Peru's service design standard

Inspired by the work of the UK's Government Digital Service, Peru developed a dedicated standard for service design and delivery that comprises key principles and supporting guidance to equip government institutions when digitalising government services.

The standard comprises accessibility, user research, testing and implementation guidance with a primary focus on users and their needs. This effort is framed under ongoing efforts in Peru to advance the country's digital government maturity.

The standard defines three main steps for government institutions to digitalise their services:

1. Understand users and their needs, including user research, user profiling, and user journey's definition.
2. Test and experiment possible solutions, including guidance for prototyping and UX content.
3. Agile development of government services, including enabling digital public infrastructure and enabling tools to scale up as well as to measure performance and satisfaction.

Colombia's guidelines for digital services

The Ministry for Information and Communication Technologies (MINTIC) issued dedicated guidelines to support government institutions at the moment of digitalising public services. The guidelines were prepared in the context of the implementation the NDGS and are structured around 11 principles:

1. Understand user needs.
2. Address user experience from an end-to-end approach.
3. Develop simple and intuitive services.
4. Leverage most basic government services to deploy the standard.
5. Build services under agile and iterative approaches.
6. Interact and collaborate with stakeholders from the broader service ecosystem.
7. Attract multidisciplinary teams.
8. Choose modern and scalable digital infrastructure.
9. Automate testing and deployment.
10. Promote security and privacy by design.
11. Adopt a systematic service improvement approach.

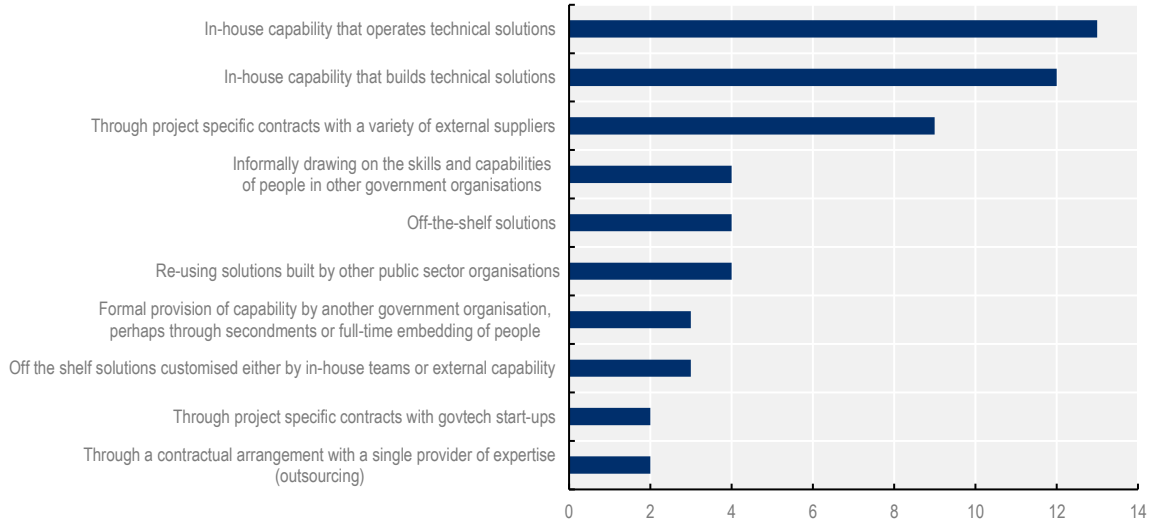
Source: Government of Colombia (n.d.[25]), *Creación de Servicios digitales*, https://guias.servicios.gob.pe/creacion-servicios-digitales; Government of Colombia (n.d.[26]), *Guía para el diseño de Servicios Ciudadanos Digitales*, https://gobiernodigital.mintic.gov.co/692/articles-179144_Guia_Servicios_Digitales.pdf.

Regarding public sector capacities for service transformation, LAC countries have different approaches to address the development of digital public services. As seen in Figure 4.9, most surveyed countries declared having developed internal technical and operational capacities to digitalise government services as well as through specific contracts with external suppliers. In contrast, there is still limited uptake of engagement with GovTech start-ups and entrepreneurs given the level of maturity and range of digital tools and solutions offered by GovTech in LAC (see Chapter 5).

The importance of advancing towards more dedicated mechanisms for the procurement and acquisition of digital technologies can help public sector institutions in LAC to cope with the increasing demand and expectations for digital services and the corresponding need to secure interoperability, coherence and value for money. In line with good practices of OECD countries, LAC governments could consider investing in dedicated capacities and mechanisms that facilitate government institutions to have access to digital goods and services accordingly. In Brazil, the NDGS incorporates specific actions to centralise the procurement of digital technologies as well as plans to develop a dedicated digital marketplace to assist public sector institutions when facing the need to contract external expertise.[44] In Jamaica, the public company eGov Jamaica Limited[45] offers services to public sector institutions to support their digital transformation processes given the limited existing internal capacities to develop digital transformation projects. In Barbados, the IDB is supporting the government to implement a dedicated GovTech agency to channel the engagement with innovators to digitalise government services.[46] Further details about the procurement of digital technologies in the public sector are presented in Chapter 2.

Figure 4.9. Capacities to design and deliver government services

Number of surveyed countries with reported actions in one of the following categories



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Fostering public-private collaboration is pivotal to establish a healthy ecosystem that enables service transformation. In LAC, only Argentina and the Dominican Republic declare regularly using public-private partnerships (PPPs) to address digital transformation needs, while for most countries such a mechanism is occasionally or almost never used in practice (OECD/CAF, 2022[27]). Despite limited uptake of such mechanisms in LAC, there are examples that can serve as inspiration for a more collaborative governance in the digital transformation of governments. For example, Colombia's MINTIC has set a dedicated department to promote public-private partnerships (PPPs) in the adoption of digital technologies in the public sector (OECD, 2018[10]; OECD/CAF, 2022[27]). Paraguay has implemented the initiative *InnovandoPY* to attract best technology solutions bringing together public and private actors (OECD/CAF, 2022[27]). More details about PPPs and examples of similar practices across LAC are presented in the report *The Strategic and Responsible Use of AI in the Public Sectors of Latin America and the Caribbean* (OECD/CAF, 2022[27]) as well as in Chapter 2 and 5 of this report.

Common digital tools and enablers

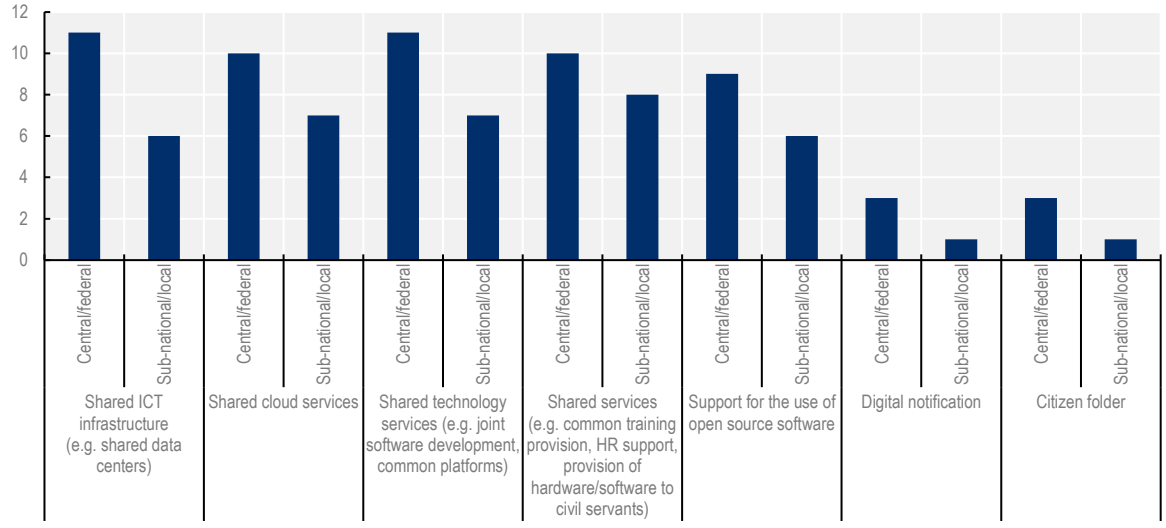
Finally, a whole-of-government omnichannel approach to service design and delivery builds on the premise that public sector institutions can have access to common digital tools and enablers that facilitate effective collaboration and integration in service delivery (OECD, 2020[2]). Along with cost-effectiveness, the benefits of promoting the deployment and use of a comprehensive set of common enablers and tools (e.g. scalability) include coherence and interoperability of institutional efforts to unlock system wide transformation, as outlined in the OECD Digital Government Policy Framework and its dimension Government as a Platform (OECD, 2020[2]).

Digital public infrastructure (e.g. digital payment, digital identity, data sharing and digital notification tools) plays a key role for a fair, trustworthy, inclusive and cost-effective digital transformation of governments. Recent events such as the COVID-19 pandemic, the ongoing war in Ukraine and the earthquake in Türkiye underline the importance of securing digital resilience and sovereignty. Furthermore, proprietary technology can lead to technological lock-ins and silos that undermine governments' capacity to react effectively and secure operations and services in the digital age. The growing attention to equitable access and development of digital public infrastructure is reflected in the interest to develop reliable, reusable and interoperable digital public goods (González-Zapata and Piccinin-Barbieri, 2021[28]) intended as open-source digital public infrastructure that can be further used, curated and improved across borders and jurisdictions.

In LAC, governments present different levels of maturity when assessing the availability of common tools and enablers (e.g. digital identity or notification systems) between the central/federal and sub-national/local levels. To a higher extent, shared digital infrastructure, technology and cloud services are widely spread across surveyed countries (see Figure 4.10). Global estimates in IT expenditure in the public sector show that governments are increasingly investing in cloud services, including Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS).[47] Similar trend is observed in LAC countries, with cloud technologies taking a predominant role in NDGS and investment plans.

Figure 4.10. Digital tools and enablers available at central/federal/local levels

Aggregated number of surveyed countries indicating availability of at least one digital tool/enabler



Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Several examples and practices are observed in LAC to strengthen countries' digital public infrastructure, in particular regarding the development or strengthening of cloud initiatives to migrate from legacy data centres. Argentina is investing USD 5.8M to develop cloud infrastructure to consolidate public sector data.[48] Similar efforts are observed in Barbados linked to the development of the national interoperability infrastructure based on X-Road.[49,50] Brazil has invested to strengthen its cloud capacity and migrate existing datacentres in the past years as part of the NDGS 2020-2022. The Dominican Republic is developing a private cloud available for the public sector OPTICLOUD[51] with particular attention given to security. In Panama[52] and Paraguay,[53] the respective digital government authorities are developing dedicated cloud infrastructure and computing efforts. Uruguay stands out given the comprehensive cloud policy State Public Cloud in place since 2019 and which includes IaaS, PaaS and SaaS solutions across the public sector (Box 4.7). Many of these efforts are linked to existing efforts to improve data governance and interoperability in the public sector, as extensively described in Chapter 3.

Box 4.7. Cloud policy in Paraguay and Uruguay

Paraguay's

In Paraguay, the MITIC is responsible for NUBE-PY, the national public cloud infrastructure policy. Through NUBE-PY, Paraguay and MITIC seek to secure the sovereignty of data under the management of the public sector, as well as to secure more efficient spending on digital infrastructure across the public sector. In its first implementation stage, NUBE-PY provides Infrastructure as a Service (IaaS) under a hybrid cloud model based on public and private cloud providers and it is expected that other cloud services are implemented in the next years.

Uruguay's Presidency Cloud

In Uruguay, AGESIC defines the public cloud policy and offers cloud infrastructure to public sector organisations, known as Presidency Cloud (*Nube de la Presidencia*). The policy comprises different services according to the needs of public sector organisations in order to promote secure, scalable and cost-effective digital public infrastructure across the country. The model comprises five different cloud services as well as support to public sector organisations to assess their cloud needs and benefit from this public service:

- Infrastructure as a service (IaaS)
- Platform as a service (PaaS)
- Software as a service (SaaS)
- Back-up as a service (BaaS)
- File management as a service (FaaS).

Source: Government of Uruguay (2023[29]), *Nube*, https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/tematica/nube; Government of Paraguay (n.d.[30]), *Servicios – Nube PY*, https://www.mitic.gov.py/viceministerios/tecnologias-de-la-informacion-y-comunicacion/servicios/nube.

In line with trends in OECD countries to promote and adopt open-source solutions as part of the implementation of digital government strategies (OECD, 2020[3]), most governments in LAC have put in place dedicated policies and initiatives to promote dedicated solutions. In Colombia, MINTIC implements the initiative Open Source, a catalogue of existing reusable solutions to digitalise public sector institutions available across the administration.[54] The toolkit includes the interoperability solution X-Road,[55] an international digital public good built in Estonia and growingly adopted across different countries. In Argentina, the Secretariat for Public Innovation published in 2022 the new NDGS with the commitment to

strengthen the ecosystem of open-source solutions in the country.[56] In Peru, SEGDI developed the National Platform for Public Software of Peru (*Plataforma Nacional de Software Público del Perú*),[57] a catalogue in which public sector institutions can request and make available open-source solutions as established in the Supreme Decree No. 051-2018-PCM.[58] Similar efforts are observed in Uruguay,[59] Brazil,[60] Ecuador,[61] the Dominican Republic[62] Panama[63] and Paraguay.[64]

Beyond digital public infrastructure, service transformation relies on digital solutions that improve the capacity of citizens to operate and interact with digital services in trustworthy ways. Across possible digital solutions, digital notification, citizen folders and digital identity stand out as core digital infrastructure to establish a trusted and convenient experience of users with public service.

Identity verification in the digital space is fundamental for the functioning of the economy, society, and the public sector. As countries increase access to transactional government services online, efforts to build human-centric and comprehensive digital identity systems are essential for digital government maturity (OECD, 2023[31]). Unlike OECD countries, trustworthy, user-centric, and comprehensive digital identity systems are not widely available across LAC governments. In most of the countries, users can create individual accounts with public sector institutions that provide verification to access government services. This restricts the capacity of digital identity solutions to authentication and without sufficient certainty and trust that the individuals are effectively who they say they are, and that given their attributes have access to specific services and/or benefits. Six surveyed countries have some types of digital identity systems in place: Chile,[65] Brazil,[66] Costa Rica,[67] the Dominican Republic,[68] Paraguay[69] and Uruguay.[70] However, the most advanced digital identity system is observed in Uruguay. Building on the longstanding governance, capacity and legitimacy of AGESIC, Uruguay's digital identity provides authentication and advanced digital signature as opposed to the rest of the solutions in LAC that only enables identity verification. Digital identity has proved to be pivotal for service design and delivery in the digital age, and hence requires solid governance frameworks (institutional capacities, strategies, enabling resources and regulatory frameworks) that create an environment of trust built around users and their needs (OECD, 2019[32]). LAC countries with digital identity solutions still have several issues to address in order to secure robustness and uptake. This includes limited or non-existent legal frameworks for digital identity, limited capacities to understand users and their needs with regard to digital identity solutions, limited communication of existing solutions, limited connectivity, and literacy in specific territories. In this context, the transborder dimension of digital identity gains relevance as regional blocks advance to increase free and trusted flow of data and individuals. This is the case of recent agreements signed by LAC countries to advance cross-border co-operation on digital affairs (Box 4.8) as well as ongoing initiatives to mutually accept digital signature in the context of the GEALC and MERCOSUR blocks.[71] Looking ahead, LAC governments could consider strengthening their existing governance systems for digital identity inspired in OECD standards such as the OECD Recommendation of the Council on the Governance of Digital Identity) (OECD, 2023[31]) (Box 4.9).

Box 4.8. Agreement to promote digital co-operation between Chile, Singapore and New Zealand

The Digital Economy Partnership Agreement (DEPA) brings together the governments of Chile, Singapore and New Zealand to promote co-operation for increased transparency and certainty in the digital environment. Efforts to strengthen the economic exchange between the three countries requires also to establish trusted digital tools such as digital identity to enable secure flow of data and access to government services across jurisdictions.

Source: Government of Chile (2021[33]), "Acuerdo de Asociación de Economía Digital (DEPA) es aprobado por el Senado y queda listo para ser ley", https://www.minrel.gob.cl/noticias-anteriores/acuerdo-de-asociacion-de-economia-digital-depa-es-aprobado-por-el.

Box 4.9. OECD Recommendation of the Council on the Governance of Digital Identity

Recognising the social, economic and public value of digital identity systems to enhance privacy, facilitate including, simplify access to government and private services, as well as transform the way public service providers interact with their users, the OECD issued a recommendation to assist develop and govern human-centric and portable digital identity systems. The OECD Recommendation of the Council on the Governance of Digital Identity promotes members and mind-alike countries to implement digital identity systems adhering to the following principles:

- Developing User-Centred and Inclusive Digital Identity.
  - Design and implement digital identity systems that respond to the needs of users and service providers.
  - Prioritise inclusion and minimise barriers to access to and the use of digital identity.
- Strengthening the Governance of Digital Identity.
  - Take a strategic approach to digital identity and define roles and responsibilities across the digital identity ecosystem.
  - Protect privacy and prioritise security to ensure trust in digital identity systems.
  - Align their legal and regulatory frameworks and provide resources to enable interoperability.
- Enabling Cross-Border Use of Digital Identity.
  - Identify the evolving needs of users and service providers in different cross-border scenarios.
  - Co-operate internationally to establish the basis for trust in other countries' digital identity systems and issued digital identities.

Source: OECD (2023[31]), *Recommendation of the Council on the Governance of Digital Identity*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0491.

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[51] http://dominicana.gob.do/index.php/politicas/2014-12-16-20-56-34/politicas-para-el-buen-gobierno/centro-de-datos-del-estado.

[52] https://aig.gob.pa/descargas/2019/06/Nube_Computacional.pdf?csrt=12274800530103940880.

[53] https://www.mitic.gov.py/viceministerios/tecnologias-de-la-informacion-y-comunicacion/servicios/nube.

[54] https://gobiernodigital.mintic.gov.co/portal/Iniciativas/Software-libre/.

[55] https://x-road.global/.

[56] https://www.argentina.gob.ar/noticias/publicacion-de-la-estrategia-nacional-para-el-programa-federal-de-transformacion-publica.

[57] https://www.gob.pe/14976.

[58] https://www.gob.pe/institucion/pcm/normas-legales/3107-051-2018-pcm.

[59] https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/tematica/software-libre.

[60] https://www.gov.br/governodigital/pt-br/software-publico.

[61] https://www.softwarepublico.gob.ec/.

[62] https://www.dominicana.gob.do/index.php/software.

[63] https://aig.gob.pa/solca/.

[64] https://somoslibres.org/index.php/43-nieuws/ssoftwarelibre/5643-paraguay-y-su-eleccion-por-el-software-libre.

[65] https://claveunica.gob.cl/.

[66] https://www.gov.br/governodigital/pt-br/noticias/nova-carteira-de-identidade-concorre-a-premiacao-de-iniciativas-tecnologicas.

[67] https://www.tse.go.cr/verificacion_identidad.htm.

[68] https://serviciosrd.gob.do/registro.

[69] https://www.paraguay.gov.py/crear-cuenta.

[70] https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/comunicacion/publicaciones/ecosistema-de-identidad-digital-distribuida.

[71] https://www.redgealc.org/contenido-general/noticias/taller-posdata-lista-de-listas-mercosur/.

5 Digital innovation and GovTech

This article explores the state of public sector innovation and digital innovation in Latin American and Caribbean (LAC) governments, with a dedicated focus on initiatives promoting GovTech ecosystems. It offers a comprehensive analysis of the factors that influence the development and dissemination of public sector innovation in the region, including drivers, supports, and organizational and systemic considerations. The chapter aims to provide LAC governments with a high-level overview, enabling officials to assess current developments, reflect on achievements, and make strategic decisions regarding the role of innovation in attaining public sector objectives.

Introduction

Innovation is increasingly crucial for governments as they face a context of growing uncertainty and complexity. Key societal challenges, such as climate change and an ageing population, also represent a need for improvement in how innovation is supported and leveraged in the public sector.

The challenges associated with an interconnected, digital, and rapidly changing world also present incredible opportunities to build a better future. The pace of the global transformation will only accelerate, and governments need to adapt by simultaneously addressing the challenges while seizing the vast opportunities. Such opportunities include the ability to use innovative digital technologies as enablers to deliver more timely, proactive and inclusive public services. They also allow for collaborative and innovative approaches that are conducive to greater trust in public institutions, which has been declining in many countries around the world, including in the LAC region (see Figure 1.3 in Chapter 1).[1]

This chapter examines the overall state of public sector innovation among governments of Latin America and the Caribbean (LAC), as well as initiatives more specifically related to digital innovation. Importantly, it includes a dedicated focus on LAC efforts to foster activities supporting GovTech ecosystems. The aim of the chapter is to provide LAC governments with a high-level overview of the drivers, supports, organisational and systemic factors that influence the development and diffusion of public sector innovation and digital innovation in the region. This work represents an opportunity for officials to take stock of and reflect on the current developments and achievements, and make intentional, informed decisions about innovation's role in achieving public sector goals.

Managing a portfolio of innovation

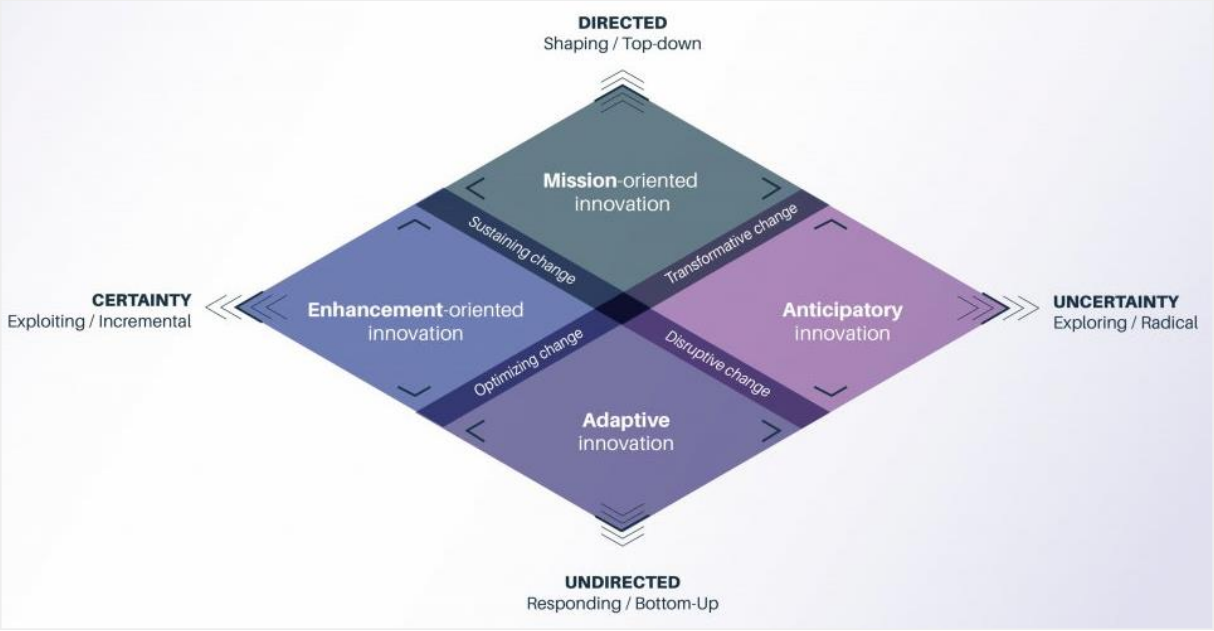
The OECD has found many instances in which LAC governments and their partners in industry and civil society are taking bold steps to innovate. In spite of this, a great deal of confusion remains as to the exact nature of innovation in the public sector, which actions may be better than others, and how governments can position and structure themselves to bring forth and execute new ideas. In interviews held within the scope of this report, countries such as Ecuador and Panama said that they "lacked a common vocabulary" or struggled to "articulate innovation" to ensure a common understanding.

This confusion is by no means unique to LAC, and it presents a problem in making public sector innovation a more routine activity in governments. Having a shared understanding of innovation and a common vocabulary matter, as governments are focusing more on taking systems-wide approaches to transformation across and within their countries and even across national borders. Without some degree of consensus about the nature of innovation, there will be a misalignment of belief, intent and action, which is likely to make the difficult task of introducing and applying novel approaches even more challenging.

In the broadest terms, public sector innovation has to fulfil three different components: **novelty**, **implementation** and **impact** (OECD, 2017[1]). The innovation needs to introduce a new approach or apply an existing approach in a new context, it must be implemented and should result in an outcome or impact (for example, a shift in public value, efficiency, effectiveness, trust or satisfaction).

At a deeper level, through its work with countries all over the world, the OECD Observatory of Public Sector Innovation (OPSI)[2] has found that innovation is *multi-faceted*, and that successfully leveraging the power of innovation requires a portfolio approach that allows governments to understand, foster and manage different facets (Figure 5.1).

Figure 5.1. Public sector innovation facets



Source: OECD (n.d.[2]), *Innovation Portfolios: Building Clarity of Purpose for Innovation*, https://oecd-opsi.org/work-areas/innovation-portfolios.

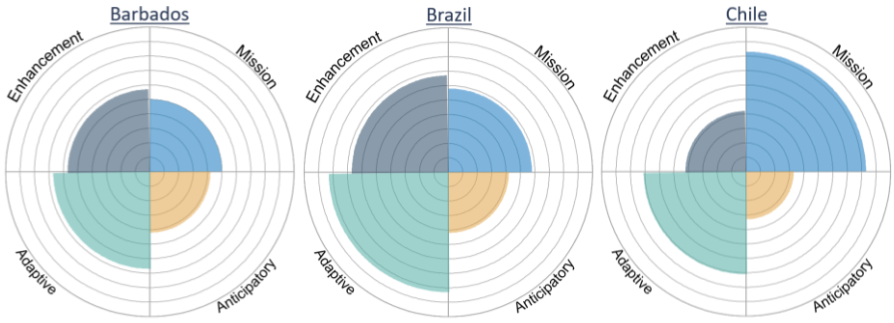
The four primary facets to public sector innovation identified by the OECD OPSI are:

1. **Mission-oriented Innovation.** Setting a clear outcome and overarching objective for achieving a specific mission.
2. **Enhancement-oriented Innovation.** Upgrading practices, achieving efficiencies and better results, and building on existing structures.
3. **Adaptive Innovation.** Testing and trying new approaches in order to respond to a changing operating environment.
4. **Anticipatory Innovation.** Exploring and engaging with emergent issues that might shape future priorities and future commitments.

By its nature, innovation is an uncertain investment. There is no guarantee that any single innovation will work, how it will work, or what the unintended or unanticipated consequences might be. A portfolio approach – multiple projects and investments – offers governments the chance to spread risk, helping to mitigate the chance of loss, because if one investment fails others might still succeed.

The OECD-OPSI has developed the Portfolio Exploration Tool (PET),[3] a survey-based self-diagnostic aide to help governments understand how they shape and influence the direction of the innovative activities in the public sector. The PET includes a series of questions that have been extensively prototyped and user tested to gauge an entity's strengths and weaknesses in each of the four innovation facets.[4] Based on a user's responses, the PET creates a score for the strength of each facet based on a calculation formula determined and tested by the OECD-OPSI, and then provides the user with tailored responses. The OECD LAC Digital Government Agency Survey included a series of questions from the PET to get a sense of the digital innovation tendencies in LAC governments. By applying PET calculations to these responses, we can see some general strengths and weaknesses in the public sector innovation facets among LAC governments (see results in Figure 5.2).

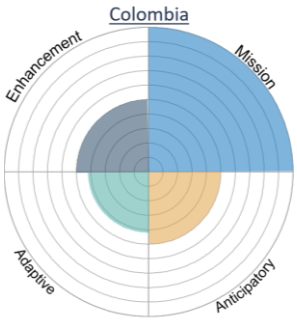
Figure 5.2. Digital innovation portfolio orientations of LAC governments



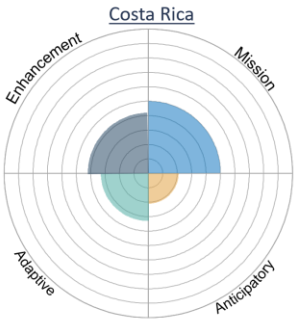
Strong in Adaptive. Moderate in Enhancement, Mission. Weak in Anticipatory.

Strong in Adaptive, Enhancement. Moderate in Mission. Weak in Anticipatory.

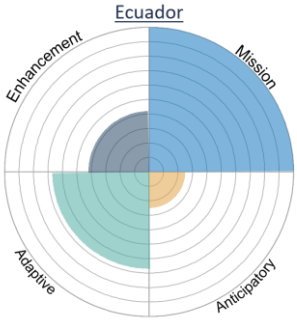
Strong in Mission, Adaptive. Weak in Anticipatory, Enhancement.



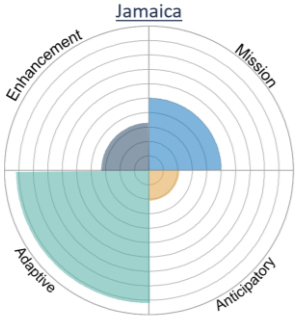
Strong in Mission. Moderate in Enhancement, Anticipatory. Weak in Adaptive.



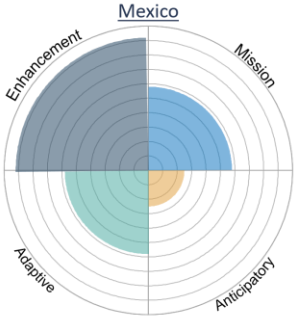
Moderate in Mission. Weak in all others.



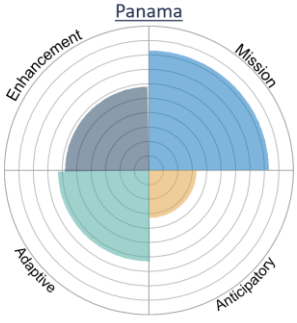
Strong in Mission, Adaptive. Weak in Enhancement, Adaptive.



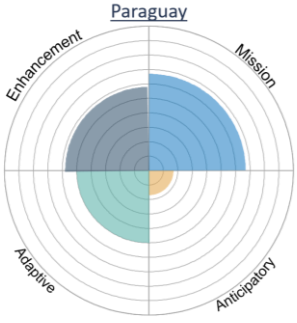
Strong in Adaptive. Moderate in Mission. Weak in Enhancement, Anticipatory.



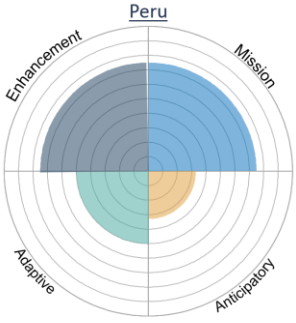
Strong in Enhancement. Moderate in Mission, Adaptive. Weak in Anticipatory.



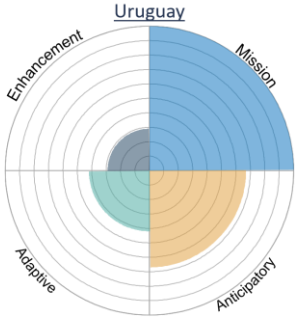
Strong in Enhancement. Moderate in Mission, Adaptive. Weak in Anticipatory.



Strong in Mission. Moderate in Enhancement, Adaptive. Weak in Anticipatory.



Strong in Enhancement, Mission. Moderate in Adaptive. Weak in Anticipatory.



Strong in Mission, Anticipatory. Weak in Enhancement and Adaptive.

Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021) with questions from OECD Portfolio Exploration Tool (https://oe.cd/pet).

While they are approximate observations, we can see some regional themes taking shape. For instance:

- LAC governments most strongly favour **mission-oriented innovation**, with every country showing a strong or moderate proclivity for it. This indicates that LAC governments concentrate on innovating to achieve clear, often ambitious outcomes or overarching goals, usually coming directly from the senior leaders or politicians. The goals serve as an overarching driver and uniting force for innovation that guides relevant ecosystem players to work together to achieve them, and to drive new learning and knowledge in order to get there. Examples of mission-oriented innovation could include digital innovations seeking to achieve Sustainable Development Goals (SDGs), strengthen health care systems, or close the digital divide Within the LAC context, existing examples include Bogota, Colombia's efforts to develop comprehensive and integrated "Care Blocks",[5] and Uruguay's *Plan Ceibal* initiative to provide every school student with a laptop and internet access (Mazzucato, 2023[3]). This result is not surprising, as this type of innovation often comes naturally to governments, as it is about working towards a goal on behalf of collective interests with strong top-down political will behind it.
- LAC governments also tend to favour **adaptive innovation**, with 75% showing a strong or moderate proclivity for it. In addition to top-down direction, many LAC governments concentrate on trying new approaches in response to a changing operating environment. When the environment changes (e.g. a new technology or practices emerge), it can be necessary to respond with innovation that helps adapt. An example is the use of social media by governments to interact with citizens. Within the LAC context, examples here include Chile's "silent channel" collaboration with Facebook to address gender-based violence during the COVID-19 lockdown,[6] and Brazil's iLabthon effort to foster the creation of innovation labs with the support of the best specialists in the public sector (see Box 5.5).[7] LAC scores indicate a stronger preference for adaptive innovation than OPSI normally sees. This is a good sign, and is likely because the rapidly evolving nature of digital government demands approaches that are more rapid and agile than other policy domains.
- LAC governments appear to be weaker in **enhancement-oriented** innovation, with 58% showing a strong or moderate proclivity for it (only 25% strong). This facet utilises existing knowledge and seeks to exploit previous innovations. Such forms of innovation can build on existing efforts to achieve greater efficiency, effectiveness and impact. Being weak in this facet indicates that these governments may need to give more attention to the support structures that sustain initiatives that are launched. Without operationalising the work, governments risk burn-out by staff who are constantly creating new processes for each new thing that is launched. Also, government's ability to implement and fully deliver on its goals may be hindered by a lack of follow-through or the improvement of existing services, which appears to be a challenge in the region, with countries such as Brazil, Chile, Colombia, the Dominican Republic, Ecuador, and Peru all expressing challenges in sustaining initiatives in interviews held within the scope of this report.[8] The low scores here are somewhat surprising, as enhancement-oriented is generally the most common type of innovation in governments. In seeking to disrupt the status-quo with ambitious and forward-thinking initiatives and high-profile launches, governments could be missing out on simpler, low-risk efforts that can still yield impact and maintain it over the long haul, even if they may be less exciting.
- LAC governments are weakest in **anticipatory innovation**, with 85% showing weak scores.[9] These governments may have to create room for anticipatory innovation so that they are not caught off-guard when facing big social or technological shifts. Giving room for employees to experiment and test out new ideas and creating communities of practice may help them to not miss out on emerging needs or practices that at first are not directly in line with current goals. Further, these governments should explore more future-oriented alternative solutions in and beyond its field of work to prepare for unforeseen events and new developments (e.g., through investigating trends and future scenarios). Weak scores in this area are common, as anticipatory innovation is generally least present within government portfolios. This is often because it is the most difficult to

demonstrate the return-on-investment. However, strengthened efforts are needed to ensure governments have an informed view of the future and can act today to help shape it.

The bullets above represent broad regional themes, but the results of each country and organisation will vary. Digital government and innovation organisations in LAC governments can obtain more specific results and feedback on their own contexts by completing the Portfolio Exploration Tool.[10] In addition to providing results and tailored advice on each facet, government teams can also map out their innovation portfolio on a project-by-project basis to identify gaps and determine whether their efforts are aligned with their core strengths, and to better understand their capacity for taking a portfolio approach to innovation.[11]

Based on their results, governments can target specific drivers, structures, tools, methods, skills and capacities to strengthen areas in which they may be weak. For instance, as LAC governments are weakest in Anticipatory Innovation, they could aim to put in place elements of the OECD's Anticipatory Innovation Governance (AIG) model (see Box 5.1 and Figure 5.3). Several examples show how they are moving in this direction, including those mentioned in the "Future preparedness through anticipatory governance" section of the OECD-CAF's 2022 report on artificial intelligence (OECD/CAF, 2022[4]), such as Chile's "Future" pilot to anticipate, prioritize and build new and various forms of value.[12]

Figure 5.3. Anticipatory Innovation Governance model

Source: OECD (n.d.[5]), *Anticipatory Innovation Governance: Exploring the Future and Taking Action Today*, https://oecd-opsi.org/work-areas/anticipatory-innovation.

Box 5.1. Anticipatory Innovation Governance (AIG)

AIG is a meeting ground where knowledge about plausible futures becomes actionable through innovation. It embodies a broad-based capacity to actively explore options as part of broader anticipatory activities, with the aim of spurring innovations connected to uncertain futures in the hope of shaping the former through innovative practice.

Two core components underpin AIG efforts and can help make them a reality:

1. Building on the **agency** of actors within the governance process. Agency involves the exploration of alternatives, tools and methods, institutional structures, organisational capabilities, and the availability of data and resources for innovation.
2. Creating an **authorising environment** in which anticipatory processes can thrive. The authorising environment will involve issues such as legitimacy, vested interests, public interest and participation, networks and partnerships, evidence and evaluation, and learning loops.

As seen in Figure 5.3, each approach captures a variety of specific mechanisms of AIG.

Source : Tõnurist, P. and A. Hanson (2020[6]), "Anticipatory innovation governance: Shaping the future through proactive policy making", https://doi.org/10.1787/cce14d80-en.

Likewise, approaches such lean methodologies, open innovation, and behavioural insights approaches can be inroads for enhancement-oriented innovation. To help governments understand and strengthen their efforts, OPSI has developed a Facets Brief for each of the innovation facets, as well as one for taking a portfolio approach to public sector innovation.[13]

Declaring to innovate

Seven LAC governments (Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico, and Peru) have adhered to the OECD Declaration on Public Sector Innovation adopted in 2019 (see Box 5.2 and Figure 5.4),[14] formally recognising the importance of innovation as a strategic capability of government to modernise state administrations and achieve policy goals. This step indicates their commitment and alignment with internationally-recognised principles and actions to embrace and enhance innovation.

Box 5.2. OECD Declaration on Public Sector Innovation Principles and excerpts

Principle 1: Embrace and enhance innovation within the public sector

- Embrace innovation as one of the ways that governments can achieve their goals and do better for the people they serve.
- Appreciate the multifaceted nature of innovation and take a systemic portfolio approach to innovation that is tailored to the relevant needs, goals and priorities.

Principle 2: Encourage and equip all public servants to innovate

- Recognise that innovation requires a diverse range of skills and capabilities, and motivation.
- Ensure support structures, processes and working conditions that more easily allow public servants to innovate, and continuously reassess established routines that may be unnecessarily hindering innovation.

Principle 3: Cultivate new partnerships and involve different voices

- Connect different actors (public, private, non-profit, individual) in ways that allow public sector organisations to partner, collaborate and co-create new approaches or solutions to problems.
- Develop a spectrum of engagement and co-creation practices, and use different forms of it, to ensure that innovation efforts are informed by lived experience and relevant expertise.

Principle 4: Support exploration, iteration and testing

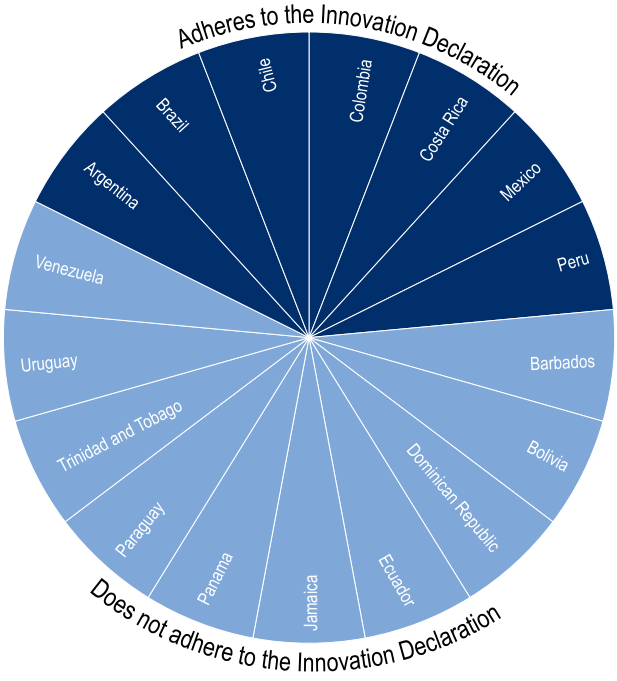
- Ensure exploration, iteration and testing across a portfolio, at both the level of the public sector as a whole, and at the level of individual ministries and organisations.
- Recognise the benefits that can come from enabling experimentation in core systems (such as the use of digital technologies, budgeting, risk management and reporting).

Principle 5: Diffuse lessons and share practices

- Foster networking and peer learning to help public servants learn and borrow from each other.
- Develop and sustain feedback loops that capture feedback from citizens and frontline staff to aid continuous learning.

Source: OECD (n.d.[7]), *Declaration on Public Sector Innovation*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0450.

Figure 5.4. LAC government adherence to the OECD Declaration on Public Sector Innovation



Source: OECD (n.d.[7]), *Declaration on Public Sector Innovation*, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0450.

LAC governments are engaged in a number of activities that are aligned to the Declaration principles.

Principle 1 (embrace and enhance innovation) is largely reflected in the portfolio approaches discussed in the previous section. It can also be demonstrated by the creation of innovation strategies. Many LAC governments perform well in this regard with it comes to digital innovation. As discussed in Chapter 1, most LAC governments have a digital government strategy in place, and they generally have a solid emphasis on innovation. A number have also developed AI strategies (OECD/CAF, 2022[4]) or digital innovation strategies.[15] However, public sector innovation strategies have been less pronounced:

- Colombia developed a strategy for "Innovation for a Modern Country" in its 2018 – 2022 National Development Plan, with Colombian officials stating in interviews held within the scope of this report that it has been crucial in providing a roadmap for a strategic, ecosystems-focused approach to innovation.
- In Chile, the National Policy on Science, Technology, Knowledge, and Innovation touches on the importance of public sector innovation (including networks, dissemination, scaling, skills, and systems approaches) and its State Modernisation Agenda[16] describes relevant actions around modernising public services and servants and promoting transparency and citizen participation, among other things.
- The Dominican Republic launched in 2021 an innovation and digital transformation strategy, though its scope only includes innovating upon public procurement.[17]
- Ecuador created a dedicated strategy around continuous improvement and innovation of public processes and services.[18]
- Paraguay used participatory techniques across sector to create a National Innovation Strategy, though the strategy itself is not generally aimed at public sector innovation.[19]

Of these, only Colombia, Ecuador, and to some extend Chile's efforts approach a true public sector innovation strategy. Without such a strategy, LAC governments may struggle with taking a systems approach to innovation and linking their overall innovation efforts to their digital strategy and digital innovation goals. In interviews run within the scope of this report, Chile, the Dominican Republic, Panama, and Peru stated that a weak strategic focus when it comes to innovation leads to fragmentation and a lack of clarity in innovation efforts. Governments can learn lessons from Ireland, which has created one of the leading public sector innovation strategies in place today (Box 5.3).

Box 5.3. Public Sector Innovation Strategy (Ireland)

The Irish Innovation Strategy; *Making Innovation Real – Delivering Today, Shaping Tomorrow*; translates the will to innovate into concrete strategic goals and actions. This strategy focuses on citizen-centric innovation, culture of innovation, scale-up innovation and transformative innovation. The strategy is accompanied by concrete supports, toolkits and guidance to assist ministries and teams to incorporate these actions into their operations and strategies.

Source: Our Public Service (n.d.[8]), *Innovation Strategy*, https://www.ops.gov.ie/actions/innovating-for-our-future/innovation/innovation-strategy.

This principle can also be illustrated through high-profile events to raise awareness, highlight innovative efforts and promote learning, such as Brazil's Innovation Week,[20] which convenes global and national public sector innovation leaders and provides hundreds of hours of relevant content.

Finally, dedicated overarching innovation organisations or entities can help. Examples, though often more tightly scoped round *digital* innovation, include:

- Colombia's Digital Innovation Centre,[21] which acts as a laboratory, knowledge agency, academy and dynamic agent of the innovation ecosystem. The country also has a Centre for the Fourth Industrial Revolution Colombia (C4IR Colombia), in collaboration with WEF.[22]
- Brazil is the other country in the region with a similar Centre for the Fourth Industrial Revolution Colombia (C4IR Brasil), in collaboration with WEF.[23]
- The Dominican Republic's Digital Innovation Lab.[24]
- Panama's National Government Innovation Council is a cross-government guiding body with members from the Ministry of the Presidency; Ministry of Economy and Finance; National Secretariat for Science, Technology and Innovation; Comptroller General; and the National Authority for Government Innovation (AIG). It advises on public sector innovation and approves innovation plans, among other duties. Additional relevant entities include the Institute for Technology and Innovation, as well as Technology Innovation Working Groups across agencies.[25]
- Peru's Government and Digital Transformation Laboratory is a co-creation space for academia, civil society, the public and private sectors, and citizens, to participate in the design, redesign, and digitalization of public services, and the digital transformation of the country.[26]

Dedicated innovation funds can also help facilitate innovation, both for providing seed funding to get ideas off the ground, as well as helping to ensure the sustainability of efforts that prove successful. Beyond some targeted govtech initiatives discussed below, the OECD identified no funds targeted at public sector innovation.

Other LAC governments could learn a lot from these events, entities, and funds as others do not appear to have comparable items of this calibre. Many elements of the remaining principles are covered elsewhere. Some additional examples from outside the region are presented in Box 5.4.

Box 5.4. Examples from outside LAC for achieving Principle 1

Innovation Event

The Australian Public Service celebrates Innovation Month each July. The month provides an opportunity to share innovation experiences and explore new ideas. These in turn improve work practices and helped deliver better products and services for Australians.

Innovation Entity

The NIDO Innovation Lab in Belgium stimulates and supports public sector innovation by providing guidance and practical expertise to help public servants experiment, address challenges and find innovative and sustainable solutions. NIDO helps to create a space for innovation by providing resources for innovative approaches and connecting innovators through storytelling and networks.

Innovation Fund

The French Government Funds for Public Sector Transformation supports projects that improve the quality, efficiency and innovative nature of the public sector. The initiative aims to better equip and support transformation and innovation in government.

Source: Australian Government (2021[9]), *Innovation Month 2020*, ; Nidolab (n.d.[10]), *Nido - Le labo d'innovation du service public*, https://www.nidolab.be/nido; French Government (n.d.[11]), *Fonds pour la transformation de l'action publique*, https://www.modernisation.gouv.fr/transformer-laction-publique/fonds-pour-la-transformation-de-laction-publique.

Principle 2 (encourage and equip public servants) is covered in the discussion in the following section on skills and capacities, as well as the "Enhancing internal expertise and human capital" section of the OECD-CAF report on artificial intelligence.[27]

Principle 3 (new partnerships and voices) is reflected in the OECD-CAF LAC AI report (OECD/CAF, 2022[4]) in the sections on "Leveraging external expertise through partnerships and procurement", "Understanding problems and the potential for AI solutions" (regarding networks and public challenges), "Ensuring an inclusive and user-centred approach" (regarding co-creation and citizen engagement). Additional efforts in this space include:

- Leading cross-border efforts,[28] such as the e-Government Network of Latin America and the Caribbean (GEALC Network); the Economic Commission for Latin America and the Caribbean (ECLAC) Digital Agenda for LAC (eLAC);[29] the Digital Nations,[30] which includes Mexico and Uruguay as members; and interoperability mechanisms being developed by Chile, Colombia, Mexico, and Peru.[31]
- Networks specifically focused on Digital Innovation, such as Peru's National Network of Digital Innovators.[32]
- Well designed and executed engagement portals (e.g. Participa Perú and Ecuador Dialogo).[33]

Principle 4 (support exploration, iteration and testing) is reflected in the OECD-CAF report on artificial intelligence section on "Creating space for experimentation", as well as work being done to support GovTech (discussed below). Another relevant initiative is Paraguay's Government Laboratory (GobLab),[34] which Paraguayan officials stated in interviews held within the scope of this project is helping to foster a culture of innovation. The iLabton represents another interesting example from the region that combines collective intelligence and experimentation (see Box 5.5).

Box 5.5. iLabthon

Combining elements of challenge-style events and collective intelligence, iLabthon was the first marathon in the world to create government innovation laboratories. Held over 20-31 January 2021 by Brazil's *Conexão Inovação Pública RJ* (Public Innovation Connection), with support from government agencies, the virtual event brought together 1 327 participants, 132 speakers and mentors, and 27 existing public sector innovation labs to build the foundations for new innovation labs in Brazil, Guinea-Bissau, Mexico and Mozambique. Participants were broken up into competing teams to develop minimum viable products of new labs that considered five key dimensions: strategy, services, structure, learning and communication. Over 130 lab projects originated from the event, with top ideas being implemented.

Source: OECD (n.d.[12]), *iLabthon*, https://oecd-opsi.org/innovations/ilabthon.

Principle 5 (diffuse lessons and practices) is partially covered by the OECD-CAF report on artificial intelligence in sections on "Understanding problems and the potential for AI solutions" (regarding peer learning networks), and "Ensuring an inclusive and user-centred approach" (regarding feedback loops and user engagement). This principle also has synergies with other principles. For instance, Colombia's Innovation Centre, mentioned under Principle 1, has as one of its lines of work the Knowledge Base, through which it shares relevant knowledge and experiences in digital government. Networks, discussed under Principle 3, are also a great source of organic or structured learning. The State of Pernambuco, Brazil's State Innovation Power Station is a good example of how the principle can be embedded into innovation efforts (Box 5.6).

Box 5.6. State Innovation Power Station (Pernambuco, Brazil)

Created in 2020, the aim of the State Innovation Power Station is to help the government improve and disseminate knowledge about innovation, facilitate experiments, evaluate projects and portfolios to reduce risks, optimize resources allocation and use, and create a strong culture of innovation. It works across a number of public sector organisations. The main services provided by the are:

- Advocacy and knowledge dissemination of public innovation.
- Innovation training and qualification.
- Evaluation of innovation projects and portfolios.
- Technical orientation of innovation projects.
- Promotion and innovation awards.

Although some services are driven by demand, the Usina acts to actively prospect and search for servants and institutions, trying to combine other services to a continuous advocacy and knowledge dissemination.

Source: OECD (n.d.[13]), *Usina Pernambucana de Inovação*, https://oecd-opsi.org/innovations/usina-pernambucana-de-inovacao; https://usina.pe.gov.br.

The OECD LAC Digital Government Agency Survey conducted within the scope of this report helps to gauge some general sentiment around officials' opinions on the principles of public sector innovation for

their country's public sector. Overall, survey respondents signalled generally positive sentiment about every innovation principle, with the exception of a handful of areas negative sentiment was prevalant:[35]

- Argentina responded neutrally about whether public servants are empowered take risks and engage with new ideas/technologies, and their ability to connect different actors.
- Barbados answered neutrally on all aspects of Principles 2, 4, and 5, suggesting a cultural resistance to innovation, a lack of support for public servants to try new things, and challenges in experimenting. It also answered neutral or disagreed with some items under Principle 5, suggesting challenges in building learning organisations and disseminating best practices and lessons learned. Barbados also answered neutrally to its ability to cultivate partnerships (Principle 3).
- Chile responded neutrally with recognising that innovation requires investment and that it promotes partnerships, and it disagreed that its public servants are empowered to take risks and that it develops and sustains feedback loops to aid continuous learning.
- Colombia had mixed responses under Principle 5, with neutral sentiment on its ability to foster networking and peer learning, and developing and sustaining feedback loops.
- Costa Rica strongly disagreed that public servants are empowered to take appropriate risks, that it promotes creating partnerships, and that it recognises the benefits that can come from experimentation. It was also neutral on all aspects of Principle 5, except for strongly disagreeing that it develops and sustains feedback loops.
- Ecuador responded neutrally that it promotes systematically sharing lessons learned.
- Jamaica responded neutrally that it fosters a culture of openness, learning from mistakes, and collaboration across silos.
- Mexico disagreed that is develops and sustains feedback loops.
- Panama responded neutrally that is develops and sustains feedback loops.
- Paraguay responded neutrally that it fosters networking and peer learning and that it promotes creating partnerships.

The OECD and CAF see the positive sentiment around most items to be a good sign. Yet, some strong reported challenges shining through in the region tend to be associated with:

- Promoting an environment where public servants are empowered take risks to engage with new ideas, technologies, and ways of working.
- Connecting different actors (public, private, not-for-profit, citizens) in ways that allows the public sector to partner, collaborate, and co-create new approaches; as well as creating partnerships to increase the public sector's ability to innovate.
- Developing and sustaining feedback loops that capture feedback from citizens and frontline staff to aid continuous learning.
- Systematically sharing learning arising from innovation activity (whether success or failure).

Likewise, workshops and surveys conducted by OECD and CAF under the scope of this report generally found similar themes. For instance, in an OECD-CAF workshop with 80 attendees from all countries in the scope of this review (except Venezuela), participants agreed that encouraging experimentation and prototyping was a major challenge, but that also it should be seen as a key priority to take action on. In interviews with different governments across the region conducted by OECD and CAF within the scope of this project, fear of taking risks was repeatedly raised as a barrier, with officials often blaming this on strict legal frameworks and fear of reprisal for failure, resulting in a culture among civil servants to do exactly what the law says, "no more, no less". Governments in LAC will need to overcome this cultural reluctance to achieve meaningful, systemic progress in their public sector transformation efforts. Chile perhaps represents the strongest in this area, though reinforced by its strong lab and innovation network, as discussed in this chapter and in the OECD-CAF report on artificial intelligence of 2022 (OECD/CAF,

2022[4]), though like most other areas, all countries in the region would benefit from additional efforts to strengthen a culture that embraces innovation. As shown in Box 5.7, the OECD OPSI's Innovation Playbook is a resource that can assist with this objective.

Box 5.7. Public Sector Innovation Playbook

OPSI has created a new Playbook for the OECD Declaration on Public Sector Innovation to help senior officials and middle managers connect their challenges to the principles of the Declaration; assess their capacities to deal with them in innovative ways; and select and apply actions, tools and case studies to effect change on the ground. LAC governments can use this playbook to solidify their strengths and address their gaps and challenges in the areas discussed in this section. To go with it, the OECD Observatory of Public Sector Innovation (OPSI) has also developed a video explaining how to apply the playbook, as well as a facilitation guide and templates so that organisations and teams can use the playbook in a workshop format.

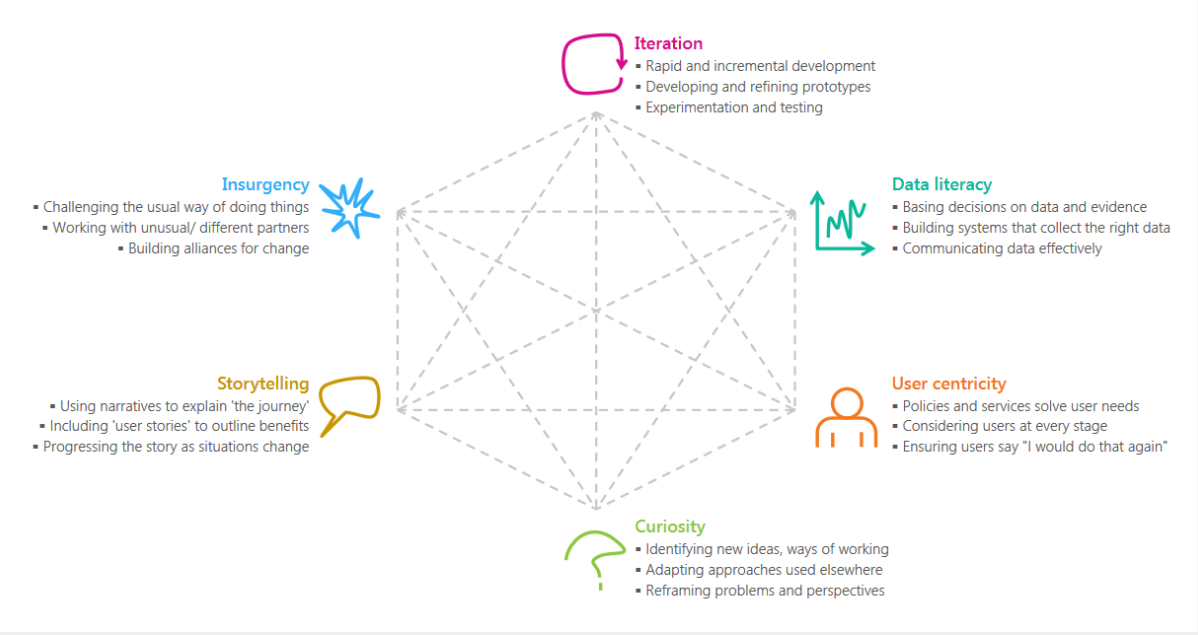
Source: OECD (n.d.[14]), *Principles and Actions for Enhancing Innovation*, https://oecd-opsi.org/work-areas/declaration; OECD (n.d.[15]), *Libro Interactivo de la Innovación*, https://oecd-opsi.org/wp-content/uploads/2023/06/OPSI_Playbook_fa-ESPANOL-completo.pdf.

Promoting innovation skills and capacities

The capacities and competencies of civil servants, the way they are organised in teams and structured in the public administration all determine how effective the public sector is at being innovative. In addition to the importance of instil digital skills across government, as discussed in Chapter 2, ensuring a foundation of strong innovation skills among public servants can strengthen the innovative capacity of governments, and in the LAC context, help to overcome the challenges discussed in this chapter.

The OECD skills model for public sector innovation is based around six "core" skills areas (Figure 5.5). Not all public servants will need to make use of or apply these skills in their day-to-day job. However, for a modern 21st-century public service, all officials should have at least some level of awareness these six areas in order to support increased levels of innovation in the public sector.

Figure 5.5. Six core skills for public sector innovation



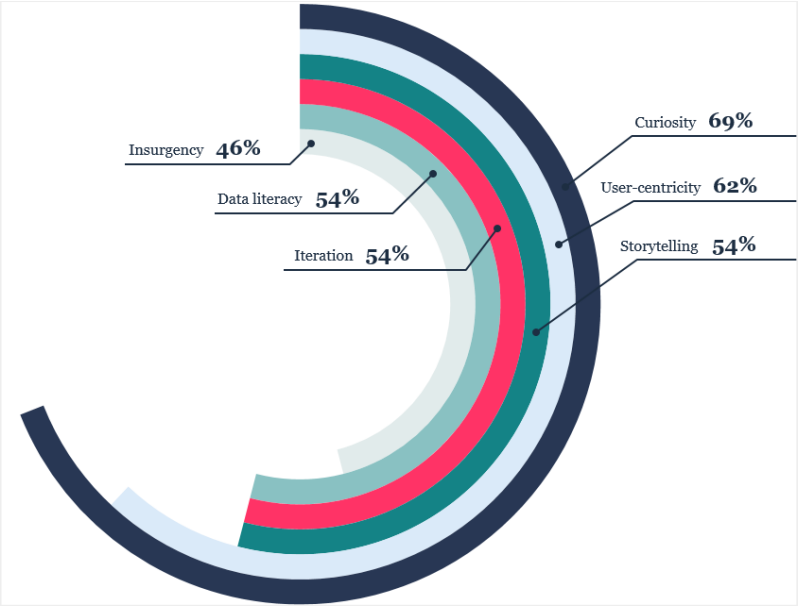
Source: OECD (2017[16]), *Embracing Innovation in Government: Core Skills for Public Sector Innovation*, https://oecd-opsi.org/publications/core-skills.

Evidence collected for this report shows weak-moderate opinions among digital government officials as to whether public servants in their countries have these innovation skills, which suggests foundational enablers of innovative capacities and culture are not currently in place and demonstrating the need for enhancing these skills across the public service. The relatively high scores for curiosity hint that public servants *want* to try new things and innovate, but that they do not always have the know-how and empowerment to move forward.

In zooming in at the national level, officials from some countries believe that their public servants are more equipped with innovation skills and others. For instance,

- Brazil, Mexico, and Uruguay indicated agreement for each of the six core innovation skills.
- Argentina, Barbados, Chile, Paraguay, and Peru tended to agree on that public servants were equipped with most skills, but were neutral on some others.[36]
- Ecuador and Panama were neutral on all, except for Ecuador's agreement with iteration.
- Officials from other countries expressed opinions that were more critical. Costa Rica indicated disagreement with all skills, except for being neutral on user-centricity. Colombia's responses were mixed, expressing disagreement in storytelling, agreement in data literacy, and neutral in the rest. Jamaica was also mixed, agreeing on iteration and user centricity, disagreeing on insurgency and data literacy, and being neutral on user centricity.

Figure 5.6. LAC governments' opinions on whether public servants have innovation skills



Note: Based on countries that agreed that public servants generally had these skills. The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

LAC governments have increasingly developed training and capacity building components to help strengthen their innovation skills, especially when it comes to data literacy, user-centricity, and iteration.[37] Related to iteration, trainings in agile development methodologies and prototyping are particularly relevant to digital innovation, and can be seen in training offerings from countries such as Brazil.[38]

The remaining innovation skills appear to be less of a focus, perhaps because they are less structured (e.g., insurgency, storytelling), or because governments believe the skills are already in place among public servants (e.g., curiosity). Such skills are still important to reinforce, however. We can see a few examples of this, such as Brazil's training in "Creativity and New Technologies".[39] At the national level, Colombia has developed an overarching Public Sector Innovation Diploma programme[40] and capacity building for public sector innovation. At the sub-national level, the Bogota, Colombia's LABcapital has built an online public innovation course for public officials.[41] The capacity building programmes by Chile's GovLab offer some of the strongest national training on innovation skills in the region through its Public Innovators Network (Box 5.8). The Government Lab of Argentina (LABGobAr) created a Design Academy for Public Policy, which taught core innovation skills and tools (e.g., curiosity, storytelling, big data and AI), and the country even based staff promotion decisions according to innovation level.[42] However, it appears that this initiative is no longer in place. In supporting many countries, CAF has also developed a Diploma in Governance and Public Innovation (Box 5.9), which is already having major results.

Not all efforts need to come directly from the government itself, however. Brazilian company WeGov has created a HubGov Program, which has a motto that, "more than innovations, we need to create innovators" through promoting an innovative culture, skills, and connections.[43]

Box 5.8. Public Innovators Network Capacity Building and Training (Chile)

Chile's Government Innovation Lab (GobLab) aims to accelerate the transformation of public services for people and their relationship with citizens. Its Public Innovators Network fosters innovation capacities in more than 20,000 civil servants, leaders, entrepreneurs, academics and citizens who are working to improve public service quality. The service aims to address siloed thinking, weak adoption of innovation capabilities, and the cultural resistance to new practices and methods through generating connection and learning initiatives to decentralise innovation and make the state transformation sustainable over time. Several trainings are carried out yearly through a digital platform and in-person interactions.

Informed by OECD's Core Skills for Public Sector Innovation and Chile's own Skills Framework for Public Innovation, trainings are wrapped around themes such as:

- **Better Services:** Faster and more efficient digital services for people by default.
- **Better Management:** More efficient and effective internal processes, digitisation and automation of processes, evidence-based decision-making, interoperability of institutions.
- **People in the State:** Development of capabilities for transformation, performance, productivity and change management.

There is also a **facilitator course** for civil servants to acquire the necessary tools to lead public innovation projects. More than 200 facilitators in over 140 public institutions. Courses are generally scheduled through a Monthly Learning Agenda, with digital and in-person workshops and talks carried out by officials and private experts. Around 400 people participate in each session. An Annual Summit is held each year, with workshops and activities to learn new methodologies and give visibility to the members' innovation experiences. Over 2,000 users participate yearly.

Source: Government of Chile (n.d.[17]), *¿Te gustaría mejorar el Estado y Transformar los servicios públicos?*, https://www.lab.gob.cl/red-de-innovadores; Government of Chile (2021[18]), *Different Angle: Perspectives on Public Innovation. What is the Chilean Model of Public Innovation? Six years of the Government Lab*, https://www.lab.gob.cl/static/pdf/Different-Angle_Six-years-of-the-Government-Lab.pdf.

Box 5.9. Diploma in Governance and Public Innovation (CAF)

CAF has developed the Diploma in Governance and Public Innovation for leaders in Latin America and the Caribbean in conjunction with 17 of the most prestigious universities in the region. It aims to strengthen the skills and abilities of leaders from Latin America and the Caribbean who work in public administration, the private sector or civil society, on issues related to innovation and public management to promote transformative leadership in the face of current challenges in the region.

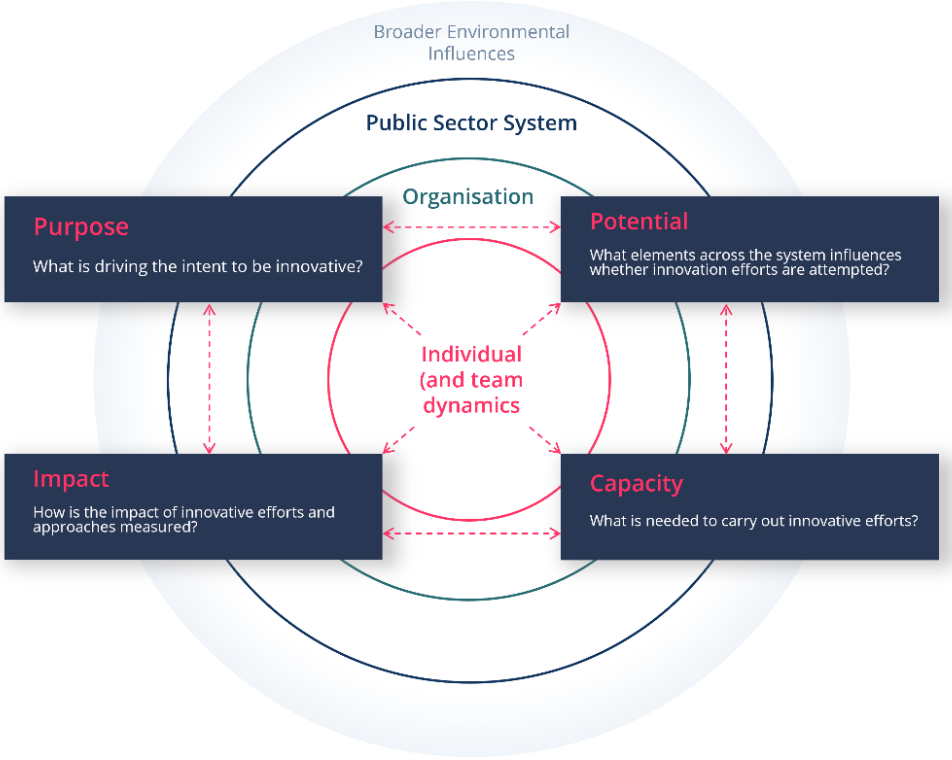
The course is available across the region in partnership with local delivery partners. Over the 6-month hybrid virtual/physical programme (totalling 160 hours of training), participants participate in courses on topics such as public innovation, GovTech, digital transformation, gender and social inclusion, agile methodologies, and the Sustainable Development Goals (SDGs).

CAF heavily subsidises the cost of the programme, helping to make it accessible. Participants who pass all of the activities receive a Diploma in Public Governance and Innovation from a partner university. In 2023, the programme will be running its second edition.

Source: CAF (n.d.[19]), *Diplomado en Gobernabilidad e Innovación Pública (2° edición)*, https://www.caf.com/es/actualidad/capacitacion/2023/05/diplomado-en-gobernabilidad-e-innovacion-publica-2-edicion/.

Zooming out beyond just skills, governments also need to understand and strengthen their broader systemic capacity for public sector innovation. The full scope doing so is immense and beyond what can be provided in this review. However, to help governments in this, the OECD OPSI has developed the Innovative Capacity Framework (Kaur et al., 2022[20]). It focuses on examining innovative capacity of existing public sector systems, and their governing mechanisms, rules, processes, norms and other structural factors. This is a practical and systemic framework and guidelines to make innovation an integral part of policy making and administration and enhance the capacity of governments to quickly adapt to changing environments and, ultimately, build more robust and sustainable solutions. The Framework takes a broad view of the systemic elements and actors across three levels of analysis and framed around four focus areas, as seen in Figure 5.7.

Figure 5.7. Innovative Capacity Framework



Source: Kaur, M. et al. (2022[20]), "Innovative capacity of governments: A systemic framework", https://doi.org/10.1787/52389006-en.

Promoting digital innovation and the use of emerging technologies in the public sector

The subjects above touch on systemic and cross-cutting factors supporting or hindering public sector innovation in a broad sense. However, there is an opportunity to also look specifically at how LAC governments are promoting the use of digital products and processes to innovate, and how they are leveraging emerging technologies, which in themselves are innovative. There are a few LAC initiatives that consider emerging technologies in a broad sense, such as Colombia's Centre of Digital Innovation[44] and its Centre for the Fourth Industrial Revolution Colombia (C4IR Colombia); as well as Uruguay's Emerging Technology division in its central digital government agency.[45] So long as they are well aligned or integrated with other innovation and digital government efforts, such structures can be helpful in providing governance, leadership, and visibility over emerging technology initiatives.

Interestingly, some LAC governments have taken the opposite approach and have made a decision to avoid using emerging technologies in the public sector. In interviews with the OECD and CAF held within the scope of this project, officials from Ecuador stated that the government has made a strategic decision to prioritise proven, mature technologies, in part as a result of failed projects involving emerging technologies in recent years.[46] Panama officials, too, expressed that they are "wary of chasing emerging technologies". While all governments should maintain an awareness of new technologies and how they may be used by or impact the public sector, these sentiments reflect a remarkable level of self-awareness and understanding of the pitfalls associated with exploring these technologies, and bring to light the need to strengthen the capacity to be able to assess even and even the use of emerging technologies is relevant to address the specific need of the public sector. Such an approach is perhaps more mature than seeking so adopt emerging technologies in a manner that is uninformed or just for the sake of doing it. Still, informed

and measured experimentation is generally a more favourable approach and can help governments from missing out on technological shifts and potential opportunities, and such experimentation can mitigate the risk of major failures that many countries have encountered. Outside of the LAC region, examples of this include Lithuania's LBChain blockchain-based technological sandbox[47] and the UK's NHS AI Lab to accelerate the safe and effective adoption of AI in health and care.[48]

Besides the general promotion (or avoidance) of the use of emerging technology, most LAC efforts tend to focus on specific technologies. The OECD and CAF have already covered the LAC government's use of Artificial Intelligence extensively in the OECD-CAF AI report (OECD/CAF, 2022[4]), but LAC efforts and ambitions are broader than just AI.

Several governments are indeed exploring the use of other innovative and emerging technologies, though it appears that this is taking place a lesser extent than with AI. For instance, only a few LAC governments reported that they have strategies around other forms of emerging technology (Table 5.1), and the OECD through its own research could not always find strong evidence to back up countries' reported efforts.

Table 5.1. LAC governments self-reporting on innovative technology strategies

	Blockchain	Internet of Things (IoT)	Digital twins	Robotic process automation	Big data analytics
Argentina	✓	✓			✓
Barbados	✓				
Brazil		✓		✓	✓
Chile					
Colombia					✓
Costa Rica	✓	✓			✓
Dominican Republic					
Ecuador					
Jamaica					
Mexico		✓		✓	✓
Panama					✓
Paraguay		✓			✓
Peru	(planned)				
Uruguay					✓
Total	**3**	**5**	**0**	**2**	**8**

Note: The 14 participant countries in the survey are Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru and Uruguay.
Source: OECD-CAF Going Digital Government in LAC Survey (2021).

Blockchain

After AI, blockchain technology may be the technology with the most hype in recent years, but also increasing levels of disillusionment (Lindman et al., 2020[21]). LAC governments have both been experimenting with use cases, as well as adapting to the potential of the technology through revising their legal and regulatory frameworks. For instance, 2020 research by IDB found that at the time three LAC governments (Argentina, Bolivia, and Venezuela) had a specific regulation on blockchain, but that *many* more had enabling regulations on digital contracts, digital signatures, and smart contracts (including whether they are equivalent to traditional contracts (IDB, 2020[22]).[49] Such advancements help clear a path for exploring the potential for blockchain in both the public and private sectors.

As seen in Table 5.1, three countries indicate that they have a strategy in place for exploring the use of blockchain, though their scope does not always explicitly include public sector uses. These, as well as other efforts surfaced through OECD-CAF research and interviews, are discussed in the bullets below. In addition, IDB has developed LACChain, which could assist across the LAC region by providing ready-made infrastructure and community networks to help them get started and/or advance their efforts (Box 5.10).

- Argentina has established "Blockchain Federal Argentina", an open and participatory multiservice platform designed to integrate services and applications on blockchain (see Box 5.11). The government's National Information Technologies Office (ONTI) has also published a Code of Good Practices for the Development of Public Software to promote the sustainable development of public sector software, including guidelines on blockchain and smart contracts.[50]
- Barbados seeks to become a regional blockchain FinTech hub, and it already has a number of blockchain companies in the country. The government has also taken steps to introduce a legal framework that promotes blockchain-based private sector businesses and cryptocurrencies. Universities have developed blockchain workshops and other offerings. While the country is embracing the economic potential of the technology, the OECD could find no evidence of implementation efforts aimed at public sector transformation and innovation more specifically.[51]
- Brazil's Digital Transformation Plan Strategy (E-digital) signals the importance of using blockchain, and the government has organised several events about how the technology can be used in the public sector.[52] It has also planned to engage in feasibility studies to better understand the challenges and opportunities of the technology (Government of Brazil, 2021[23]). It also committed to making at least nine datasets available in government organisations through blockchain solutions through 2022, and to create an interoperable federal blockchain network (Revoredo, 2020[24]). The country has also engaged in specific blockchain projects, such as building a federal revenue blockchain platform for sharing revenue data across public agencies and contracted entities (Government of Brazil, 2022[25]). While Brazil's efforts are solid, the OECD could not identify any a document that would constitute a blockchain "strategy".
- While Chile did not report a blockchain strategy, the country has explored blockchain projects for public payment processing[53] and enabling transparency of its energy grid and pricing.[54]
- Colombia did not report a blockchain strategy, but it has run pilots with blockchain for combatting corruption in public procurement (Government of Colombia, 2021[26]; WEF, 2020[27]), and it has developed blockchain solutions to improve emergency risk management (Ubaldi et al., 2019[28]). The Colombian Ministry of Information Technology and Communications (MinTIC) has also issued as well-considered *Blockchain Reference Guide: Adoption and Implementation of Blockchain Technology for the Colombian State* (Box 5.11).
- Costa Rica's Digital Transformation Strategy emphasises the importance of the use of blockchain and other emerging technologies for companies, citizens, and public sector organisations.[55] However, the OECD was unable to identify a more substantial strategy focused on blockchain.
- Jamaican officials told the OECD that they plan to develop a public sector blockchain policy.
- While it did not report having a strategy, Mexico has taken actions to promote exploration and experimentation with blockchain in the public sector. For instance, the government held a Blockchain Talent Hackathon to explore how to use the tech for public services, resulting in a functional prototype for a public tenders blockchain and smart contracts for public contracting (Lindman et al., 2020[21]).[56] The country also established a Blockchain Advisory Board with experts from industry, civil society, academia and the public sector to advise the government on the development of the public blockchain, the identification of use cases and provide technical assistance (OECD, 2020[29]), although it is currently not operational.

- Peru indicated survey conducted within the scope of this project that the country is planning to develop a blockchain strategy through its National Institute of Statistics and Informatics (INEI). In addition, is has worked towards a blockchain-enabled public procurement system in partnership with a blockchain startup and the IDB (Peru Reports, 2019[30]).
- In Uruguay, the digital government agency, AGESIC, has also developed a user-friendly guide explaining how to use blockchain to public sector organisations (Ubaldi et al., 2019[28]).[57] It comprises assessment tools for public sector organisations to evaluate whether blockchain meets their needs.

Box 5.10. LACChain (Inter-American Development Bank – IDB)

Led by the IDB LAB, LACChain is a global alliance integrated by different actors in the blockchain environment. Its objective is to, "accelerate the enablement and adoption of blockchain technology in the region to foster innovation, reduce economic, social, gender and all inequalities, to promote job quality and security, promote financial inclusion, consumer protection and market integrity".

LACChain focuses on two pillars: infrastructure and community. In terms of infrastructure, LACChain makes public-permissions blockchain infrastructure available for partners to use how they please, with minimal restrictions. With regards to community, the LACChain website hosts a variety or relevant communities for the region (e.g., Blockchain Summit Latam, Blockchain Academy Mexico). It also provides useful resources, use cases, and learning opportunities.

Source: LACChain (n.d.[31]), *Homepage*, https://www.lacchain.net.

Box 5.11. LAC blockchain best practices

Blockchain Federal Argentina

Blockchain technology is being adopted in Argentina through the Blockchain Federal Argentina (BFA) initiative. The BFA corresponds to an open and participatory multi-service platform which enables actors inside and outside the government to add services and applications on blockchain.

The platform is designed to allow the contributions of different stakeholders (e.g., government agencies, industry, academia, civil society) to the public blockchain who can either improve it by adding applications or services, or adapt it to their own specific context and needs, seeing the platform is based on open source. Current use cases include public tenders, food traceability, academic credentials, and management of insurance policies.

Source: BFA (n.d.[32]), *Homepage*, https://bfa.ar; OECD (2019[33]), *Digital Government Review of Argentina: Accelerating the Digitalisation of the Public Sector*, https://doi.org/10.1787/354732cc-en.

Blockchain Reference Guide (Colombia)

Colombia's *Blockchain Reference Guide: Adoption and implementation of Blockchain technology for the Colombian state* presents guidelines that must be observed by public entities in developing blockchain projects in order to design and operate them in an organized, staggered and structured way, consistent with recommendations and best practices, allowing the general improvement of the welfare of citizens and the services provided by the government. It also serves as a primer on the fundamentals of blockchain technology and its potential uses and implications in the public sector.

When it comes to implementing blockchain, the Guide requires public sector to apply the World Economic Forum's (WEF) Presidio Principles to safeguard the promise of blockchain while preserving the rights of users. It then provides useful information on topics such as understanding and supporting relevant ecosystems, forming alliances, governing partnerships, ensuring data protection and integrity, identifying problems that need to be solved, and building prototypes, among others.

Source: Government of Colombia (n.d.[34]), *Guía de Referencia para la adopción e implementación de proyectos con tecnología blockchain para el Estado colombiano*, https://mintic.gov.co/portal/715/articles-237592_recurso_1.pdf; https://www.weforum.org/communities/presidio-principles.

LAC governments should be calculated and intentional in their exploration of blockchain technologies in the public sector, and they should seek to have strategic visibility into blockchain efforts around government to help capture and share learning and facilitate potential future scaling up of success, rather than an ad hoc and fairly isolated projects. Research shows that blockchain indeed has potential to enhance public services, including across borders, and that it can be more advantageous compared to other technologies in terms of usability and synchronisation among all entities involved (Geneiatakis et al., 2020[35]). It is also well suited to providing transparency, ensuring security and establishing trust in digital services, depending on its governance and how it is applied. However, blockchain hype has often led public sector organisations to approach the technology with both uncertainty and unrealistic expectations, as such inflated expectations often overstate or obscure practical applications.

The OECD report, *The Uncertain Promise of Blockchain for Government* (Lindman et al., 2020[21]), helps to explain why this is the case.[58] Among other things, the report outlines a framework for considering whether blockchain is worth pursuing, explores ten widely held myths about blockchain in the public sector, surfaces key factors behind public sector blockchain successes as well as failures, helps governments ensure organisational and team preparedness through digital government maturity, and provides a series

of case studies on blockchain on the front lines of public services. Governments should consider the findings and recommendations of this report in their blockchain ambitions and pursuits. Based on the observations gathered for this report and the analysis above, some particularly relevant aspects of this report for the region involve only pursuing blockchain when it adds distinct and unique value compared to other technology alternatives; ensuring projects have a clear value proposal and address a clear, specific goal; providing room and spaces for experimentation; and involving all relevant stakeholders throughout the project lifecycle, including those who may be affected by implementation.

Internet of Things (IoT)

The term "Internet of Things" (IoT) refers to the connection of an increasing number of devices and objects over time to the Internet. Following the convergence of fixed and mobile networks, and between telecommunications and broadcasting, the IoT represents the next step in the convergence between ICTs and economies and societies (OECD, 2019[36]). The IoT is expected to grow exponentially, connecting many billions of devices within a relatively short time (OECD, 2015[37]). Governments have the potential to leverage this technology to deliver innovative services and for bringing about "smart government" (Wirtz, Jan and Schichtel, 2019[38]). For instance, OPSI has collected case studies on IoT ranging from garbage collection and air monitoring to international trade and monitoring 5G electromagnetic fields.[59]

LAC countries have lagged behind those in other regions, but they are exploring IoT in different sectors, with Deloitte finding that Chile, Costa Rica, and Brazil may be particularly prepared to leverage and benefit from IoT (Deloitte, 2018[39]). Research by IDB has found the LAC IoT market to be highly fragmented, and shows that while much of the focus in LAC countries is on the private sector, areas relevant to the public sector have some of the highest maturity and opportunity for potential growth, including smart cities and transportation (Pérez Colón, Navajas and Terry, 2019[40]).

As seen in Table 5.1, five countries in the LAC region have reported strategies around IoT. Efforts in the area identified by the OECD include:

- Argentina has created a "National IoT Roundtable", which is working on a "National Plan for IoT" with inputs across all sectors. It recognises the potential for public sector digital innovation through a focus on smart cities.[60] There are also several smart cities efforts (e.g., monitoring pollution, transportation logistics) (Rodríguez, Palomino and Mondaca, 2017[41]).
- Brazil launched a National IoT Plan in 2019 with a goal "to make [IoT] an instrument for sustainable development of Brazilian society, capable of increasing the competitiveness of the economy, strengthen national production chains and promote better quality of life." Four key areas were identified, including ones relevant to public sector innovation: Smart Cities and Health 4.0.[61] Of all countries reviewed, Brazil has the most solid evidence corresponding to a true IoT strategy.
- Costa Rica has a Digital Transformation Strategy that emphasises the importance of the use of IoT and other emerging technologies for companies, citizens, and public sector organisations.[62] However, the OECD was unable to identify a more substantive IoT strategy or practices.
- Colombia did not report an IoT strategy, but the country has put forward a Pact for the Digital Transformation of Colombia,[63] including a main objective to "foster productivity in the government and in businesses through advanced digital technologies, e.g. big data, AI and the Internet of Things", signalling an IoT focus for public sector digital innovation. The Ministry for Information and Communication Technologies (MINTIC) has also established a Centre of Excellence on IoT to convene public and private sectors and academia (OECD, 2019[42]).
- Mexico's *Laboratorio Nacional del Internet del Futuro* provides an ecosystem for experimentation on a variety of technologies, including IoT, with involvement across different sectors. It appears that the outputs from the lab could benefit all sectors.

- Paraguay's National Telecommunications Plan raises the IoT as a growing issue and indicates that action is needed around this topic, but it does not articulate what should be done and by whom, or how the technology could be used for digital innovation in the public sector.
- Uruguay did not report having an IoT strategy, however its Agenda Uruguay Digital 2025 does commit to incorporate IoT in the provision and management of public services through the installation of meters and sensors for better customer experience and greater competitiveness for the productive sector in areas such as energy, water, communications, and transport developing connectivity infrastructure to facilitate IoT.[64]

Beyond strategic approaches, there are many instances of public sector IoT usage throughout LAC, largely in ad-hoc ways, such a smart city effort in municipalities in Argentina, Venezuela, and others. But without a strategic approach, LAC public sectors may adopt IoT in inconsistent and incompatible ways, resulting a potential missed opportunities for seamless and interoperable services across countries.

Digital twins

A digital twin is a "digital representation of a real-world entity or system. The implementation of a digital twin is an encapsulated software object or model that mirrors a unique physical object, process, organization, person or other abstraction".[65] Some governments have begun to create digital twins to enhance their ability to design and deliver services (see example in Box 5.12).

The concept is very new in the field of public sector digital innovation, so it is not a surprise or concern that LAC governments do not report exploring digital twins. However, they may want to consider it in the future as a tool to make services more personalised and proactive.

Box 5.12. DigiMe (Finland)

DigiMe refers to the ability of citizens to create a digital twin (or twins) of themselves. These digital personas allow users to manage their own data and use them to create situational profiles in order to access personalised services.

The country's "AuroraAI" network – an AI programme seeking to provide a holistic set of personalised services – uses collective of these personas in an anonymised way to identify similarities, differences and patterns. These findings are then used to better predict and tailor the resources needed to provide anticipatory and personalised services to citizens.

This is done through the use of reinforcement learning, whereby the system identifies which services are needed for which individuals and which times. Over time, the system collects feedback about what is helpful and what is not and automatically adjusts the services offered to be more precise.

A full case study on AuroraAI can be found in the OPSI report *Hello, World: Artificial Intelligence and its use in the public sector* (https://oe.cd/helloworld).

Source: Government of Finland (2019[43]), *AuroraAI – Towards a Human-centric Society*, https://bit.ly/3Ljp0wL; Berryhill, J., et al. (2019[44]), "Hello, World : Artificial intelligence and its use in the public sector", https://doi.org/10.1787/726fd39d-en.

Robotic process automation

Robotic process automation (RPA) could be seen as a "business process automation technology that automates manual tasks that are largely rules based, structured and repetitive using software robots, also known as bots. RPA tools map a process for a robot to follow which allows the bot to operate in place of a

human" (US GSA, n.d.[45]). While implementing more sophisticated techniques may necessitate a more foundational transformation of underlying processes, RPA can help automate processes in their present form (Eggers, Schatsky and Viechnicki, 2017[46]). RPA can be seen as a first step in addressing low-hanging fruit though the implementation of older-mindset AI, on top of which can be built more sophisticated and complex Machine Learning-based AI (Berryhill et al., 2019[44]).

As seen in Table 5.1, only two LAC governments indicate developing strategies involving RPA. However, the evidence provided by these countries did not generally support the existence of high-level strategies. The OECD was generally unable to identify any strategic or tactical focus on RPA among LAC governments, except for some ad-hoc efforts, such as work in São Paulo, Brazil.[66] This is especially notable given many LAC government's drive to experiment with more sophisticated techniques like Machine Learning, and in some ways illustrates earlier findings from this chapter that LAC government may need more focus on iterative "enhancement-oriented innovation". LAC government may be able to identify easy wins and tackle more simplistic efficiency gains through innovating with RPA, which can also yield lessons to enhance their ambitions for AI. LAC governments can look to how others have successfully pursued RPA, such as a government-wide Framework for RPA software and training in Ireland,[67] and the creation of an RPA Community of Practice and resources in the United States.[68]

Big data analytics

Of all the technologies discussed in this chapter, big data analytics is perhaps the most mature in governments today, with countries around the world leveraging the immense power of large datasets in productive and impactful ways. Big data analytics now varies in the extent to which its applications can be seen as innovative, but there remains significant potential in LAC governments to leverage it to generate new insights and design and deliver enhanced policies and services.

As seen in Table 5.1, eight LAC governments report having strategies in place for big data analytics. LAC efforts include:

- Argentina has developed an interdisciplinary National Big Data Observatory with a variety of responsibilities relevant to public sector digital transformation.[69]
- Brazil's digital government strategy calls for becoming a "Smart Government",[70] with initiatives including developing a data experimentation lab and expanding its data analytics capabilities. There have also been efforts in some specific areas, such as using big data to manage tax policy and administration (Tomar et al., 2016[47]).
- Chile did not report a big data strategy, though there are some ad-hoc efforts, such as for identifying inequities in public education (APC, 2019[48]) and enhancing safety on public transportation (OECD, 2020[49]).
- Colombia has put in place a National Data Exploitation Policy (Big Data) that serves as a proper strategy and moves the country towards a comprehensive framework for leveraging big data to generate public and economic value.[71] Like Colombia's national AI strategy, the big data strategy is excellent in that is lists specific actions with progress indicators, responsible parties, a budget, and a timeline. The country also created a Centre of Excellence on Big Data (CAOBA),[72] a partnership among the public, private and academic sectors, aims to promote the use of big data (OECD, 2019[42]).
- Costa Rica's national digital government strategy calls for leveraging big data tools for decision-making, mainly at the municipal level, and interoperable solutions to promote big data in general. However, the strategy contains few details and the OECD was unable to identify specific strategies or targeted big data efforts.
- The Government of Mexico has created a Computational Analytics Lab for Big Data covering many different relevant aspects (e.g., storage, analysis, visualisation).[73] It also uses big data in a variety

of ways, such as targeting support to those with the greatest need, predictive analytics for public sector workforce planning (OECD, 2019[50]).

- Panama, Paraguay and Uruguay indicated that they have a strategy, but they did not provide supporting evidence and the OECD was unable to identify any on its own, beyond some ad-hoc projects (e.g., Paraguay monitoring tax compliance (Government of Paraguay, 2020[51]), and Uruguay partnering with civil society to develop data-focused health portal (Tove, Paula and Milindee, 2019[52]).
- Trinidad and Tobago has recognised the potential of big data for public sector digital innovation in speeches and has some big data efforts in place (e.g., for managing the national gas pipeline, tracking mosquito-borne disease outbreaks).[74] It is seeking to increase its regional position as a leader in big data, and held a Big Data Forum in late 2020 to explore big data opportunities in public and private sectors (Richards, 2020[53]).

Others emerging technologies

Beyond the technologies and approaches discussed above, LAC governments are exploring other types of emerging technologies. For instance:

- Brazil's digital transformation plan signals the importance of augmented reality (AR). On the same topic, Uruguay has held workshops on analysing the use of "extended reality" in the state (Government of Uruguay, 2019[54]), and in interviews, Uruguayan officials stated that they will continue and deepen their use AR and virtual reality (VR). Immersive technologies have gained enhanced interest in recent months due to the focus on the "metaverse",[75] and such approaches were identified by OPSI in 2019 as a key emerging public sector innovation trend.[76]
- Costa Rica's digital strategy emphasises exploration in nanotechnology, biotechnology, bioengineering, and 5G, and how they are leveraged by companies, citizens, and public institutions alike.
- In the interviews conducted within the scope of this report, Uruguay officials stated that they are exploring the potential for quantum computing for public sector innovation and transformation, and that they are conducting pilots on "rules as code", which proposes to create a machine-consumable version of some types of government rules, to exist alongside the existing natural language counterpart.[77]

Unlocking the potential of GovTech

Forbes has reported that the rise of GovTech start-ups as being one of the five biggest tech trends transforming government in 2022 (Forbes, 2022[55]), along with other relevant issues such as digital identity (see Chapter 4), and artificial intelligence (OECD/CAF, 2022[4]). There is a growing interest in GovTech in the region, often promoted by CAF having asserted that governments should take a bolder stance in favour of innovation, including by supporting innovative initiatives outside the public sector, such as GovTech start-ups and scale-ups.[78]

Box 5.13. Definitions of GovTech

For the OECD, GovTech refers to public sector collaboration with an ecosystem of start-ups, innovators and intrapreneurs to implement digital government solutions that complement existing public sector abilities for agile, user-centric, responsive and cost-effective public processes and services.

For CAF, GovTech is the ecosystem in which governments cooperate with start-ups, SMEs and other actors that use data intelligence, digital technologies, and innovative methodologies to provide products and services to solve public problems (Zapata et al., 2020[56]). They propose new forms of public-private partnerships for absorbing digital innovations and data insights to increase the effectiveness, efficiency, and transparency in the delivery of public services.

Source: OECD

CAF has become a leader in understanding and supporting GovTech ecosystems across the LAC region. One of its major initiatives have been the creation of a regional **govtechlab**,[79] a service platform to promote GovTech ecosystems in the region, through technical advice to governments, support for public challenges and GovTech laboratories, actionable knowledge creation, as well as public impact investments in GovTech ventures (see Box 5.14). It has also convened a cross-governmental GovTech Leaders Alliance (see Box 5.15).

Box 5.14. CAF investments in GovTech ventures

As part of the *govtechlab* platform and the Business Investment and Development Fund (FIDE), CAF has made direct investments in the GovTech startups across LAC and globally. In addition to CAF's support to LAC governments, the investments directly into startups further strengthens the ecosystem and ensures companies' ability to scale in the region. Special focus has been given to ventures that contributed to the Covid-19 response.

Examples of CAF portfolio startups:

- Citibeats: the use of data intelligence and advanced analytics focused on understanding changes and social needs to support governments in their decision-making processes.
- OS City: the use of blockchain to help national and local governments transform into digital, secure, trustworthy and citizen-focused service platforms.
- Civica Digital: the development of URBEM software platform, that helps governments digitise their procedures and services, avoiding citizens having to physically attend government offices, thus reducing CO2 emissions from transfers and additionally redefines the relationship between citizenship and government.
- Unblur SL: the use of digital solutions to streamline and optimize decision-making in responses to disasters and emergencies by governments and public organizations.

Source: CAF (n.d.[57]), Govtechlab, https://www.caf.com/es/actualidad/herramientas/2021/05/govtech-lab/; Atalayar, "CAF invierte en Unblur para impulsar el sector Govtech en Europa", https://www.atalayar.com/articulo/economia-y-empresas/caf-invierte-en-unblur-para-impulsar-el-sector-govtech-en-europa/20220727105641157548.html.

Box 5.15. GovTech Leaders Alliance (CAF)

Co-ordinated by CAF, the GovTech Leaders Alliance is a group of national and local governments committed to promoting common principles for GovTech strategies around the globe and ensuring that lessons derived from their implementation are shared and made available to others embarking on this approach. Its membership is comprised of CAF, acting as permanent secretariat, and the governments of Brazil; Bogotá, Colombia; Colombia; Córdoba, Argentina; Jalisco, México; Lithuania; Madrid, Spain; Medellín, Colombia; Monterrey, Mexico; Poland; São Paulo, Brazil; Scotland and Serbia.

Alliance members have signed on to a commitment to work towards achieving common agreed upon principles, including to:

- Support high level political commitments.
- Implement GovTech strategies and policies.
- Foster an adequate environment for the creation and maturity of start-up ecosystems.
- Promote agile, flexible and innovative approaches for the testing of regulation and piloting of new technologies for the public sector.
- Strengthen data policies, governance frameworks and infrastructures.
- Promote a change of organisational culture in public administrations.

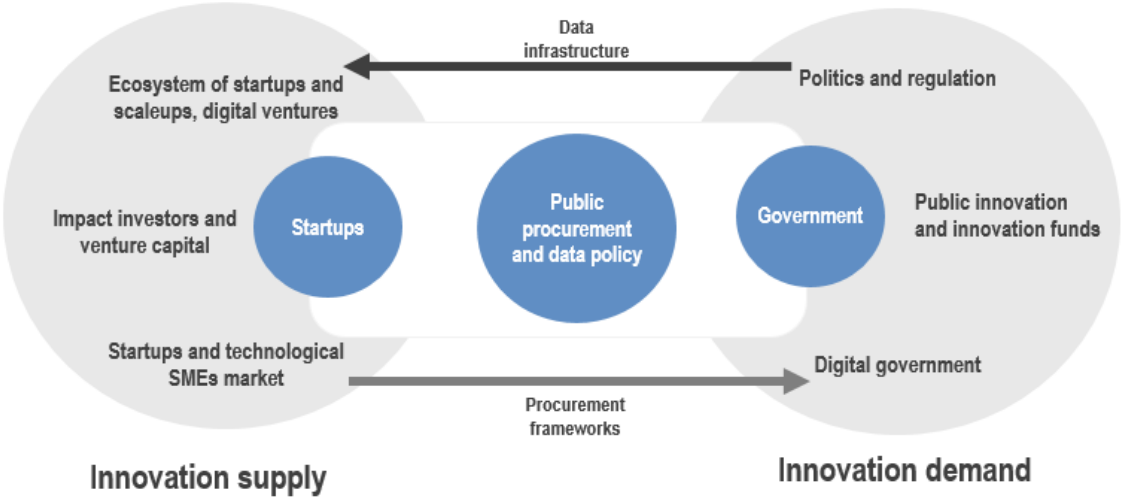
The Alliance convenes at least twice per year to promote discussion spaces, share good practices and lessons, and present successful experiences, as well as challenges of each member.

Source: CAF (n.d.[58]), *Govtech Leaders Alliance Charter and Principles*, https://www.caf.com/media/3381736/govtech-leaders-alliance-charter-and-principles_finaldocx-3.pdf.

As an initiative of the *govtechlab*, CAF has developed The GovTech Index, the first comprehensive measurement of GovTech ecosystems (see Figure 5.8) in the world (Zapata et al., 2020[56]). It is focused precisely on GovTech ecosystems that are made of a new brand of tech-based, data-driven start-ups that can help governments in driving public value and have social impact (refer to Figure 5.8). The Index analyses 28 indicators and primary sources to understand the potential for countries to across three pillars:

1. **Startups industry**. Are there startups and SMEs able to provide these new technologies?
2. **Government policies**. Is there government demand for these products, especially when innovation can be disruptive to existing bureaucracies and ways of working?
3. **Procurement systems**. Can governments and startups easily work together in the existing procurement framework?

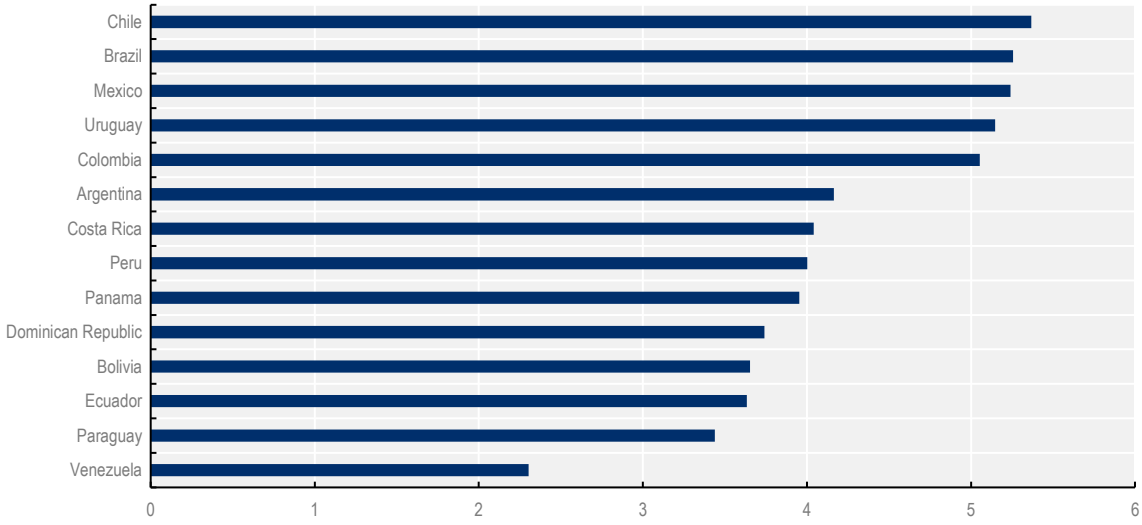
Figure 5.8. GovTech Ecosystem



Source: Based on CAF (2020[59]), *Datos índice GovTech*, https://scioteca.caf.com/handle/123456789/1584 and Santiso, C. and I. Ortiz de Artiñano (2020[60]), *Govtech y el futuro gobierno*https://scioteca.caf.com/handle/123456789/1645.

Aggregated scores for The GovTech Index can be found in Figure 5.9, and country-by-country strengths and weaknesses provided in Annex 5.A.

Figure 5.9. CAF GovTech Index, 2020



Note: Barbados, Jamaica, and Trinidad and Tobago were not included in The GovTech Index. Portugal and Spain are included in The GovTech Index, but they have been omitted here because they are not in the scope of this review.
Source: Zapata, E. et al. (2020[56]), *The GovTech Index 2020 Unlocking the Potential of GovTech Ecosystems in Latin America, Spain and Portugal*, http://scioteca.caf.com/handle/123456789/1580, with data available at CAF (2020[59]), *Datos índice GovTech*, https://scioteca.caf.com/handle/123456789/1584.

In the LAC region, GovTech is expanding most significantly at the local level (Suanzes, Sabra and Piedrafita, 2021[61]), which is critical, as it is where the impact of GovTech initiatives can be seen and felt

by citizens and residents.[80] However, as can be seen in the findings of The GovTech Index, it has so far been less prevalent at the national, strategic level, limiting opportunities for a systemic approach to GovTech and potentially hindering the ability of start-ups to obtain R&D funding and scale up. As CAF leadership has stated, "the majority of the pieces of the GovTech puzzle are in place. The next step is to work towards putting them together in coherent and overarching GovTech policies" (Santiso and Zapata, 2019[62]). CAF research has identified key levers to achieving the potential of GovTech: public policy, investing in start-ups, spaces for innovation, and public procurement. [81]

The findings from CAF's GovTech Index, and the levers identified by prior CAF research, also resonate with the important inputs that feed into this review, including project survey results, observations from workshops, and interviews with officials from government, the private sector, and civil society. For instance, the GovTech Index found that the LAC countries scored the lowest on the start-ups pillar, recommending that governments create a space where start-ups, government, and investors from the region can interact. In parallel, in an OECD-CAF workshop with 80 attendees from all countries in the scope of this review, participants raised that particular priorities and challenges for the region include better collaborating with entrepreneurs, and exploring public-private partnerships. In interviews with the OECD and CAF, officials from Brazil, Ecuador, Costa Rica, Colombia, Dominican Republic, Paraguay, Peru, and Uruguay all expressed major challenges in working with start-ups, with several positing that if there was one thing that could be changed to improve public sector digital innovation, it would be a strengthened ability to engage and work with start-ups and other private enterprises.

To build upon work that has already been carried out, this section is structured around the GovTech levers identified by CAF. It is clear that governments are taking increasing action, with Brazil in particular making tremendous progress, but that some additional efforts are needed to fully seize the potential of GovTech. LAC governments can use this analysis to better understand their current GovTech capacities, and to take informed next steps, such as conducting deeper self-reflection and strategic thinking with instruments such as CAF's GovTech Readiness Assessment Guide.[82]

Public policy

It is important for governments to strategise for leveraging the potential of collaborating with start-ups that can yield innovative digital solutions. This should include developing a government GovTech strategy, and putting in place a specific entity with interdisciplinary expertise is responsible for co-ordinating GovTech efforts at a systems level (Zapata et al., 2020[56]).

CAF's GovTech Index from 2020 found that only one LAC country (Chile) has developed a GovTech strategy, but that it is limited and part of a larger programme (Zapata et al., 2020[56]). Similarly, just a few acknowledge the importance of GovTech in their national digital government strategies. CAF recommended that each government develop such a strategy. In the Digital Government Agency survey conducted within the scope of this project, Costa Rica, Ecuador, Mexico, and Uruguay reported having GovTech strategies, but supporting evidence was lacking or showed only tangentially related initiatives not constituting a strategy.[83] Other countries (Barbados, Brazil, Colombia, Panama, Paraguay and Peru) reported that they are developing a GovTech strategy. Commendably, Brazil has demonstrated advancement and responsiveness to CAF's recommendations by updating its digital strategy in 2022 to include initiatives explicitly aimed at enhancing GovTech ecosystems (Marl, 2022[63]). Beyond this, there appears to be little other progress in the region at the strategic level.

In terms of a dedicated responsible entity responsible for co-ordinating GovTech efforts, the OECD and CAF were unable to identify any LAC countries with such functions in place. This may limit the ability for governments to take a systems approach to understanding GovTech capacity and efforts currently, and cohesive promotion and adoption practices going forward. Notably again, however, Brazil has put in place a broader National Committee on Initiatives to articulate the initiatives of the federal Executive Branch

aimed at emerging technology-based companies.[84] This committee is well placed to support GovTech ecosystems.

Of all of the GovTech levers, strategically approaching public policy is perhaps the weakest among LAC governments. The region could learn valuable lessons from others who have put successful mechanisms in place (Box 5.16).

Box 5.16. Best practices in strategic GovTech public policy

Government Technology Innovation Strategy (United Kingdom)

Following up on a Technology Innovation in Government survey, the UK Government in 2019 launched the Government Technology Innovation Strategy, alongside a guide for using. The strategy includes a number provisions relevant to GovTech and digital innovation more broadly. Important items include:

- **People: having the right skills and culture.** Creating data-literate public servants, establishing a pipeline of digital talent, training leaders, and seconding senior leaders to innovative companies to learn first-hand the benefits of experimentation.
- **Process: providing an environment for experimentation.** Launching "Spark", a marketplace for agile, streamlined purchasing of innovative emerging technology solutions; increasing challenge-based procurement methods; and expanding the success of the UK's GovTech Catalysts fund.
- **Data and Technology: structured data and up to date technology.** Enhancing access to and use of data, tackling legacy technology challenges, and updating guidance and sharing best practices on experimenting with and using emerging technologies.

Government Technology Agency (Singapore)

Singapore's Government Technology Agency (GovTech)'s mission is "Engineering Digital Government, Making Lives Better." GovTech has over 3 000 employees of its own, including 700 in-house engineers who developed products and services for citizens, businesses, and the public sector. While a powerhouse in its own right, GovTech also works to facilitate partnerships and procurements with the private sector. In doing so, it has created new partnership models to bridge the gap between sectors. For instance:

- **Moving from outsourcing to co-developing**. Moving from companies developing products independently to co-developing with industry partners.
- **Dynamic contracts.** Making it possible to invite new companies to introduced at any point during a project through supplementary invitation, allowing projects to take a long-term focus and helping government teams keep their options open.
- **Outcome-based call for solutions.** Helping to scale crowdsourced or challenge-based solutions by allowing for initial rewards based on preliminary criteria and then additional awards at different stages of a project.

Source: UK Government (2019[64]), "Government Technology Innovation Strategy", https://www.gov.uk/government/publications/the-government-technology-innovation-strategy/the-government-technology-innovation-strategy; UK Government (2018[65]), *GovTech Catalyst*, https://www.gov.uk/government/collections/govtech-catalyst-information; GovTech Singapore (n.d.[66]), *Homepage*, https://www.tech.gov.sg; GovTech Singapore (2019[67]), "3 new ways to partner with GovTech", https://www.tech.gov.sg/media/technews/3-new-ways-to-partner-with-govtech.

Investing in start-ups

The GovTech Index found that venture capital opportunities are limited in many LAC governments, making public sector investments all the more important. This is not uncommon globally, as the longer maturation times of companies catering to the public sector deter venture capital funds (OECD et al., 2021[68]). The public sector could play a key role in establishing funds for supporting these emerging start-ups, yet the report also found that government R&D funding for start-ups working with governments among most LAC governments was low. The Córdoba Smart City Fund was the only documented initiative exclusively dedicated to investing in and partnering with GovTech start-ups.[85] Established in June 2021, it works with impact start-ups that contribute to the development of smarter, more inclusive, and sustainable cities. Currently, the fund aims to invest in over a million dollars in 9 solutions across various countries. Over the next ten years, it will seek to invest in 10 to 15 start-ups per year, with the objective of positioning Cordoba as a hub for the provision and application of innovative and smart solutions for cities and local governments.

LAC governments have put in place other mechanisms to help entrepreneurs and business obtain financing and, more recently, investing. Although these investment programmes do not focus specifically on GovTech, they do promote a positive environment for start-ups and entrepreneurial ecosystems, which can include GovTech companies. Some of the more relevant examples include Brazil's National Program for Acceleration of Technological-Based Companies in ICTs (or Start-Up Brazil);[86] Start-Up Chile;[87] Colombia's APPS.CO;[88] the Innovation Grant from New Ideas to Entrepreneurship (IGNITE) programme by the Jamaican government's Development Bank of Jamaica (DBJ) (Loop News, 2021[69]; Jamaica Observer, 2022[70]); Mexico's PROSOFT programme (Government of Mexico, 2019[71]); Panama's Seed Capital Fund,[89] Panama Hub Digital,[90] and its National Secretariat of Science, Technology and Innovation (SENACYT); Peru's National Program for Technological Development and Innovation[91] (Stunt, 2017[72]);[92] and Uruguay's Ministry of Industry, Energy and Mining has an Industry Fund for SMEs.

Going forward, dedicated GovTech investments could promote both economic growth as well as digital public sector innovation. One way of achieving this is through public challenges for innovative solutions to address specific problems. In addition to general start-up investment schemes, a number of LAC governments have also put in place public challenges that encourage entrepreneurs to devise GovTech solutions (Chile, Colombia, Mexico, Paraguay, Uruguay), sometimes including central funds to fund the best ideas (Colombia, Uruguay). For instance, Mexico has tested new approaches through Reto México (OECD et al., 2021[68]),[93] open innovation process based on challenges allows Mexican innovative talent from anywhere in the country to generate new perspectives of solutions to the technological challenges. Similarly, Chile's Public Challenges[94] are open innovation contests that aim to find solutions to complex problems that require research, development and innovation connecting those who need innovation (e.g., government agencies) with bidders from startups and others. The OECD-CAF AI report discussed challenge and central fund efforts in the section on "Understanding problems and the potential for AI solutions". In addition to a more detailed exploration of the challenges and central funds as methods to receive more innovation, the report places a significant importance on the underlying rationale to engage in such activities – focusing on the problem, not on the solution (OECD/CAF, 2022[4]). This is especially important in the context of GovTech to provide creative flexibility for the GovTech actors to suggest their solutions. While the initiatives discussed in the bullets above may yield GovTech solutions as part of their broader scope of supporting all types of start-ups, public challenges are often designed more precisely for promoting public innovation and value.

Spaces for innovation

In order for GovTech ecosystems to flourish, governments need to provide room for ecosystem actors inside and outside government to innovate, experiment, and collaborate. The report on AI in the public sector showed how LAC governments are doing this to some extent, particularly regarding spaces for

experimentation, such as labs and sandboxes (see “Creating space for experimentation” section), as well as horizontal collaboration networks (see “Understanding problems and the potential for AI solutions” section) (OECD/CAF, 2022[4]). It also found that a number of LAC governments have already developed strong capacity for experimentation in general, including through innovation and experimentation labs. This demonstrated growing regional maturity in exploring and implementing AI in the public sector. The report also identified Brazil’s National Digital Government Network, Chile’s Network of Public Innovators, and Columbia’s RED CIO network as communities of interest that can serve as spaces for innovation and common problem solving.

The work conducted for this review surfaced additional efforts not captured in the previous report, many of which are more specifically attuned to promoting GovTech ecosystems. These efforts consist of:

- Argentina is planning to introduce regulatory sandbox environments to allow public sector bodies to relax rules and regulations in order to buy from start-ups (Forbes, 2020[73]).
- Brazil’s InovAtiva is a public sector accelerator and mentorship programme that supports the development of the innovative entrepreneurship ecosystem in Brazil.[95] In addition, while not led by government, the highly relevant BrazilLAB is a GovTech lab and innovation hub conceived to connect startups with the public sector and accelerate their solutions with a focus on improving public services.[96]
- Colombia has established MiLAB with CAF support,[97] a public innovation laboratory promoting GovTech (see Box 5.17). In addition, the country’s Seedbeds of Entrepreneurship[98] by the aforementioned APPS.CO provide spaces for experimentation and research for the creation of digital initiatives through the use of agile entrepreneurial methodologies. In OECD-CAF interviews, Colombian officials also discussed holding roundtables with start-ups to discuss better ways to collaborate and experiment together.
- Mexico’s Centres for Industrial Innovation (CII) promote the generation of innovation ecosystems across sectors in a variety of relevant fields.[99] In addition, the country’s National Lab for the Future of the Internet (LANIF)[100] is a public-private partnership that establishes a common space where universities, research centres, cities, companies, entrepreneurs and other organisations can freely experiment with innovative technologies.
- The Paraguayan Association of Business Incubators and Technological Parks (INCUPAR) collaborated with the government to understand and promote digital innovation incubators and startups (Government of Paraguay, 2019[74]).
- Peru’s National Network of Digital Innovators brings together digital innovators from the public, private, academic and civil society sectors to collaborate on developing digital innovation projects to improve Peruvian digital government services.[101]
- Uruguay’s Ingenio Incubator[102] is supported by the government and serves as an entrepreneurial hub and incubator for tech companies. Over 170 projects have been incubated and more than 60 companies created.

Such efforts are very useful in catalysing GovTech ecosystems. Of all the levers for supporting GovTech, LAC governments have been particularly strong in setting up spaces for innovation.

Box 5.17. MiLAB (Colombia)

From 2018-2020, Colombia's Public Innovation Laboratory of the National Government (MiLAB) worked to generate timely and innovative solutions to public sector challenges and implement an awareness of change and open innovation, in sectors that improve the relationship between the state and its citizens.

In 2020, through a new partnership with CAF, MiLAB became Colombia's GovTech lab, aiming to accelerate the digital transformation of the public sector through collaboration and open innovation strategies with entrepreneurs start-ups through the use of innovative and emerging technologies and experimental methodologies. MiLAB's key focus areas include:

- Understanding the state of the GovTech ecosystem.
- Helping public entities understand and address challenges.
- Building open innovation mechanisms, such as open calls and challenges.
- Scaling and implementing GovTech solutions.

Source: iNNpulsa Colombia (n.d.[75]), *Homepage*, https://innpulsacolombia.com; CAF (2020[76]), "Partnership to promote GovTech in Colombia through MiLAB", https://www.caf.com/en/currently/news/2020/09/caf-and-innpulsa-sign-partnership-to-promote-govtech-in-colombia-through-milab.

Public procurement

Public procurement can become an important enabler for greater digital innovation in government, allowing governments to access expertise and capabilities beyond their own limits. However, in practice, it often acts as a barrier. Fixed, long-term contracts with technology companies prevent public administrations from engaging with newer entrants (OECD et al., 2021[68]). The public procurement process is also long and complex: the search for the cheapest solutions and the duration of decision making can result in contracting firms that are competitive, but not innovative (Ortiz, 2018[77]). In interviews conducted within the scope of this report, procurement was the most common quoted barrier. Key highlighted issues included the inability of many start-ups to demonstrate experience to meet evaluation criteria, strict government procurement rules requiring that all requirements and deliverables be spelled out by public sector organisations up front, and long processing review times (1+ years), all making government an unattractive candidate for start-ups. Regulatory frameworks should therefore focus on lowering entry barriers for innovative start-ups (OECD et al., 2021[68]). Countries like Brazil have already taken action towards minimising the barriers for entry with the introduction of laws allowing easier public procurement from start-ups (see Box 5.18).

In practice, public procurement of GovTech solutions covers a spectrum of technological advancement – from early experimentation to scaling of solutions. Hence there is no universal procurement method that can be used when engaging with the GovTech actors. When governments need new and innovative solutions that are not on the market and require R&D, they could consider pre-commercial procurement (Zapata et al., 2020[56]). If a problem being solved requires creative adaptations of technology that is already on the market, public procurement of innovation can be used, including methods such as design contests (see Chapter 2). Finally, governments should consider how they can procure the scaling of piloted solutions without limiting competition or buying GovTech solutions that are already in the market. A case for this is the "Public Procurement Guide for Innovation in the Capital District"[103] launched by the local government of Bogota, Colombia to guide public entities in procuring innovative solutions. It provides an overview of tools available to purchasing entities, along with activities, best practices, success stories from

around the world, and recommendations for overcoming barriers to implementing public procurement for innovation in the district of Bogota.

The OECD-CAF AI report (OECD/CAF, 2022[4]) provides in-depth coverage regarding LAC government capacity to procure and partner for innovation. Readers are encouraged to see the "Leveraging external expertise through partnerships and procurement" section of this report to learn more. In addition, this review provides a more in-depth discussion on procurement in Chapter 2.

Box 5.18. Legal Framework for Start-ups (Brazil)

In 2021, Brazil put in place a new Legal Framework for Start-Ups (LCP 182). Its overarching objective is to, "promote and encourage innovative entrepreneurship in the country, focusing on the growth of startups as a path to economic, social, and environmental development; and the modernization of the Brazilian business environment. In addition, the new law promotes cooperation and interaction between the public and private sectors, between public entities and private companies, as fundamental relationships for the development of an innovative entrepreneurship ecosystem."

One of the key features of the Framework is a new type of public procurement that allows public sector organisations to hire startups more easily, and allows government to hold challenges where startups propose solutions. It also clears the way for regulatory sandboxes to test innovative solutions with relaxed rules.

Source: Government of Brazil (2021[78]), *Lei Complementar Nº 182, de 1º de Junho de 2021*, http://www.planalto.gov.br/ccivil_03/leis/lcp/Lcp182.htm; Global Compliance News (2021[79]), "Brazil: Legal framework for startups sanctioned", https://www.globalcompliancenews.com/2021/07/04/brazil-legal-framework-for-startups-sanctioned18062021.

New procurement processes promoting GovTech are a positive development and should continue to be pursued, but LAC governments shouldn't assume new or transformed frameworks or laws are necessary. As noted by CAF research, "procurement frameworks are often not the primary barrier—the stumbling block is instead how they have historically been interpreted and enacted" (Filer, 2020[80]). Governments need to explore their current frameworks and consider whether perceived barriers are hard-coded into the rules or if there is room for clarification and alternative interpretations. Box 5.19 illustrates how the United States has worked to clarify existing flexibilities in federal procurement rules.

Box 5.19. TechFAR Handbook (United States)

The TechFAR Handbook highlights flexibilities in the US Federal Acquisition Regulation (FAR), a 2 000-page document, and can help agencies enact procurement practices for goods and services in an agile way that meets the human-centred principles laid out in the US Digital Services Playbook. TechFAR discusses relevant FAR authorities and includes practice tips, sample language and a compilation of FAR provisions relevant to agile software development. The handbook focuses particularly on how to use contractors (including startups) to support an iterative, customer-driven software development process, as is routinely done in the private sector.

Source: TechFAR Hub (n.d.[81]), *Homepage*, https://techfarhub.cio.gov.

Annex 5.A. The GovTech Index – Country strengths and weaknesses

Annex Table 5.A.1. Select country strengths and weaknesses identified by The GovTech Index (CAF)

	Strengths	Weaknesses
Argentina	• Significant level of tech start-ups and digital talent. • High digital skills among population. • Significant potential for innovation. • Dynamic use of GovTech at local level.	• Lowest availability of VCs in region. • Low number of GovTech start-ups. • Below-average score for digital infrastructure and enablers. • Little recognition of GovTech in digital strategies. • Low score in procurement of advanced tech. • No GovTech strategy or fund. • Fragmented/siloed tech procurements and usages across branches of government. • Start-up-unfriendly procurement rules. • Lacks digital savvy around GovTech, resulting in referencing large firms.
Bolivia	• Continuity of political administration. • Current administration committed to fostering government innovation and procuring advanced technologies. • Sustained growth in some measures and reduced inequality. • Promising new procurement framework (enforcement to be determined).	• Unfavourable start-up environment. • Low availability of digital talent among the population. • Limited university-industry collaboration. • Immature data and technology infrastructure. • Poor-scoring open data efforts and connectivity. • Lowest number of start-ups in the region. • No clear strategy to promote government innovation. • No GovTech strategy or fund. • Low level of digital public services. • Perceived levels of corruption, especially in public procurement. • Low levels of open contracting data. Limiting accountability and scrutiny.
Brazil	• Most GovTech start-ups in the region. • Promising technical infrastructure, including open data and technology enablers. • Regulatory environment where businesses can be started easily. • Strong digital talent available for university-industry collaboration. • Strong scores in providing digital public services. • Continuity of digital leadership even in times of political turnover. • Federated structure makes it challenging to harmonise procurement and other relevant rules.	• Limited funding for start-ups (no GovTech vertical in the current VC ecosystem, unclear public R&D funding approach). • Crisis of trust between public and private sectors. • Lack of trust among citizens exacerbated by scandals. • Limited enforcement of procurement rules, further hindering trust. • Issues if distrust even within public sector, resulting on frequent corruption investigations. • No GovTech strategy or fund. • No recognition of GovTech in digital strategy. (OECD note: this has since been remedied).
Chile	• Highest readiness for developing GovTech ecosystem in the region. • Ease of starting a business. • High digital skills among the population. • Strong technical infrastructure. • Moderate number of GovTech start-ups, with solid potential for more.	• Limited evidence open data impact, limiting incentives to open more data. • No GovTech strategy or fund.

	Strengths	Weaknesses
	• Advanced technologies signalled as core component of future vision, and official recognition of the importance of GovTech. • One of best procurement systems in the region (ChileCompra). • Steadily improving technology procurements. • Lowest levels of corruption in region. • Transparency and accountability supported through use of open contracting standards and prosecution of corruption. • Start-up-friendly regulatory framework.	
Colombia	• Robust innovation environment. • Ease of starting a business. • Stable technology infrastructure and high availability of open data and connectivity. • Existence of public innovation lab and public challenges. • Advanced technologies signalled as core component of future vision, and official recognition of the importance of GovTech. • Perception that government is very supporting of SMEs. • High openness of contracting data – promotes trust. • Robust procurement framework.	• GovTech only now emerging as an entrepreneurial field. • Low level of GovTech start-ups (but growing). • Strong skills is relevant/transferrable fields (e.g., Fintech). • Innovation lab and public challenges lack financial resources. • No GovTech strategy or fund (though fund being explored). • Corruption remains a challenge, limiting trust. • While procurement framework is robust, start-ups report it is frequently not enforced.
Costa Rica	• Strong scores for innovation. • Highest digital skills among population in the region. • Embraces cryptocurrency, which may be a future driver of GovTech innovation. • Encourages tech innovation through free trade zones and hubs.	• Small number of tech start-ups and GovTech start-ups. • No GovTech strategy or Fund. • Procurement system could be more open to bids from start-ups. • High prevalence of non-competitive bidding in procurement, discouraging private sector GovTech activity.
Dominican Republic	• Ease of starting a business. • Official network for mentors for entrepreneurs. • Demonstrates commitment to digital innovation through its Digital Republic programme.	• Small number of tech start-ups and GovTech start-ups. • No GovTech strategy or Fund. • Low scored for government effectiveness and government control of corruption.
Ecuador	• New open data strategy and hosting of the Open Data Conference, signalling commitment to innovation. • Some highly innovative initiatives (e.g., using AR). • Government has demonstrated integrity in clamping down on abusive schemes to avoid competitive tenders. • Committed to implementing the Latin American Anti-corruption Open Data Programme.	• Small number of tech start-ups and GovTech start-ups. • Low scored on digital infrastructure and enablers. • No GovTech strategy or Fund. • Below-average scores for procurement framework.
Mexico	• High number of tech start-ups and GovTech start-ups. • High number of socially engaged citizens. • Strong open data agenda. • High scores for digital services and demonstrated commitment to connectivity. • Strong procurement framework. • Actively taking steps to improve competitiveness of start-ups relative to big firms. • Existence of National Institute of the Entrepreneur to help start-ups with information and financing.	• Suspicion around public sector market limits VC opportunities. • Federal system can cause competition among states rather than collaboration, limiting potential for start-ups to scale. • No GovTech strategy or Fund. • Reluctant procuring culture, despite strong framework. • Existing legislation hinder ability of start-ups to compete with larger firms.
Panama	• Good innovation environment (capacity for innovation, ease of starting a business, availability of VC). • Existence of efforts to foster entrepreneurship across sectors. • Government signals readiness for digital innovation through concrete initiatives (e.g., smart city efforts in Panama City).	• Small number of tech start-ups and GovTech start-ups. • No GovTech strategy or Fund. • Low scores on government control of corruption, though the President has pledged to fight corruption. • Limited publication of open contracting data.

	Strengths	Weaknesses
	• Digital strategy promotes key infrastructure (connectivity, digital identity). • Efforts to promote open data.	
Paraguay	• Existence of a National Directorate for Entrepreneurship. • Existence of efforts to foster entrepreneurship across sectors. • Very high score on availability of open contracting data.	• Small number of tech start-ups and GovTech start-ups. • Significantly below average on digital infrastructure and enablers and availability of open data. • Low access to credit for starting a business. • Below average development of digital government and digital services. • Government does not strongly signal importance of digital innovation. • Very low rates of R&D spending (but has committed to more). • Low scores for government effectiveness and control of corruption.
Peru	• Provided dedicated funding to SMEs through Innovate Peru (USD 100 million). • Procurement systems provides for procuring specifically from SMEs, and SME participation in procurements is solid.	• Low scores for industry environment (though government is taking stapes to incentivise innovation and entrepreneurship). • No GovTech strategy or Fund. • Low scores for government effectiveness and the control of corruption.
Uruguay	• Above average scores for digital and innovation environments. • High concentration of tech talent and strong universities. • Government has demonstrated support for innovation, including funding projects, education programmes, and entrepreneurial incentives. • Digital government strategy is ambitious and sets path to foster innovation. • Solid procurement framework. • Rates as the least corrupt country in the index. • Strong provision of open contracting data.	• Small number of tech start-ups and GovTech start-ups. • Low availability of venture capital (though the government is taking steps to attract investors). • No GovTech strategy or Fund. • Below average scores for R&D spending. • Government sometimes favours larger, well-connected firms.
Venezuela	• Above average scores for some digital infrastructure and enablers (cloud and big data).	• Small number of tech start-ups and GovTech start-ups. • Many people with technical skills have migrated elsewhere. • Regulations make it difficult to start a business. • No GovTech strategy or Fund. • Low scores in open data. • Low scores in almost all scores related to government GovTech readiness, indicating country should mature in more basic digital government efforts before focusing on GovTech. • Weak procurement framework and enforcement.

Note: Barbados, Jamaica, and Trinidad and Tobago were not included in The GovTech Index. Portugal and Spain were included in The GovTech Index, but they have been omitted here because they are not in the scope of this review.
Source: Zapata, E. et al. (2020[56]), *The GovTech Index 2020 Unlocking the Potential of GovTech Ecosystems in Latin America, Spain and Portugal*, http://scioteca.caf.com/handle/123456789/1580.

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UK Government (2018), *GovTech Catalyst*, https://www.gov.uk/government/collections/govtech-catalyst-information. [65]

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Zapata, E. et al. (2020), *The GovTech Index 2020 Unlocking the Potential of GovTech Ecosystems in Latin America, Spain and Portugal*, CAF, Oxford Insights, http://scioteca.caf.com/handle/123456789/1580. [56]

Notes

[1] Innovacion Publica 360 by political innovation organisation Asuntos del Sur is a good example of how innovation can promote trust in the public sector in LAC. The initiative promotes collaboration and provides technical support to sub-national governments across Argentina, Bolivia, Colombia and Mexico. It aims to address innovation skills gaps at the sub-national level, with a focus on public challenges prevalent in Latin America, such as transparency and trust in democracy and institutions. See https://oecd-opsi.org/innovations/innovacion-publica-360.

[2] https://oecd-opsi.org/.

[3] https://oecd-opsi.org/pet. The code for the PET is available as free and open source software (FOSS) at https://github.com/oecd-opsi/portfolio-assessment-tool-custom-plugin.

[4] For background, see https://oecd-opsi.org/blog/prototype-distributed-innovation-portfolio-exploration and https://oecd-opsi.org/blog/feedback-needed-pat.

[5] See https://oecd-opsi.org/innovations/bogota-care-blocks and a full case study at https://oe.cd/trends2023.

[6] https://oecd-opsi.org/innovations/silent-channel-gender-based-violence-covid-19.

[7] https://oecd-opsi.org/innovations/ilabthon.

[8] Challenges with follow-through and sustainability of initiatives was also a finding in the OECD-CAF AI report (OECD/CAF, 2022[4]), which included a recommendation to LAC governments to, “Strengthen the overall focus on implementation to ensure pledges, commitments, and strategic objectives are realised.” In relation to AI, this was often because national AI strategies contained many commitments that did not yet appear to be materialising.

[9] This mirrors findings more specifically focused on AI, as discussed in the OECD-CAF AI report (OECD/CAF, 2022[4]), which recommended that LAC governments leverage anticipatory innovation techniques to help ensure the AI strategies and initiatives are future-fit.

[10] https://oecd-opsi.org/pet.

[11] OPSI has published a guide on how teams can use the Portfolio Exploration Tool in an interactive workshop setting (https://oecd-opsi.org/wp-content/uploads/2020/12/Portfolio-Exploration-Facilitators-Guide.pdf).

[12] This is part of the Chile’s National Policy on Science, Technology, Knowledge, and Innovation (https://www.minciencia.gob.cl/politicactci/documentos/Politica-Nacional-CTCi_Chile-2020.pdf).

[13] https://oecd-opsi.org/publication-tags/facets-brief.

[14] https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0450.

[15] For instance, Panama's Law 144 of 2020 (https://aig.gob.pa/descargas/2020/05/ley-144-de-15-de-abril-de-2020.pdf) requires public sector organisations to create annual Digital Institutional Agendas, including a focus on digital innovation, which much be approved by the country's National Authority for Government Innovation (AIG). According to interviewed officials, AIG then conducts assessments to align digital innovation efforts across government and create standards for a systemic approach. In interviews, the Dominican Republic and Peru stated they were also exploring specific digital innovation strategies.

[16] https://cdn.digital.gob.cl/filer_public/d3/e3/d3e3bb10-4ad2-4df8-adfa-b4ff69a658b6/agenda-de-modernizacion-del-estado.pdf.

[17] https://www.dgcp.gob.do/noticias/dgcp-lanza-estrategia-de-innovacion-y-transformacion-digital.

[18] https://bit.ly/3khma0h.

[19] https://oe.cd/py-innovation.

[20] https://semanadeinovacao.enap.gov.br/index.php/en.

[21] https://gobiernodigital.mintic.gov.co/portal/Iniciativas/Centro-de-Innovacion-Publica-Digital.

[22] https://c4ir.co.

[23] https://c4ir.org.br/.

[24] https://laboratorio.gob.do.

[25] https://gobiernodigital.mintic.gov.co/portal/Iniciativas/Centro-de-Innovacion-Publica-Digital.

[26] https://www.gob.pe/laboratoriodigital.

[27] Relevant discussion on efforts outside the region can be found in OECD (2020[83]).

[28] For an in-depth discussion on Cross-Border Government Innovation, including actions by LAC governments and beyond, see OPSI's series of reports on *Achieving Cross-Border Government Innovation* (https://cross-border.oecd-opsi.org).

[29] https://www.cepal.org/es/proyectos/agenda-digital-america-latina-caribe-elac2022.

[30] https://www.leadingdigitalgovs.org.

[31] https://www.gob.pe/8655-presidencia-del-consejo-de-ministros-interoperabilidad-transfronteriza.

[32] https://www.gob.pe/8256-presidencia-del-consejo-de-ministros-laboratorio-de-gobierno-y-transformacion-digita.

[33] https://www.gob.pe/8267.

[34] https://www.mitic.gov.py/noticias/creacion-del-laboratorio-de-gobierno-paraguay-goblab-avanza-traves-de-la-agenda-digital.

[35] The following countries provided responses for this section of the survey: Argentina, Barbados, Brazil, Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, Panama, Paraguay, Peru, and Uruguay. "Positive sentiment" here means that the survey respondent selected either "agree" or "strongly agree". If a country is not mentioned here, they answered positively to all survey questions.

[36] Iteration for Argentina, Paraguay, and Peru; storytelling for Barbados and Paraguay; insurgency for Chile and Paraguay; curiosity for Paraguay; data literacy for Argentina and Barbados; user-centricity for Paraguay and Peru.

[37] See discussion on digital skills in Chapter 2, and discussions on "Enhancing internal expertise and human capital", "User-centred" and "Creating space for experimentation" of the OECD-CAF AI report (OECD/CAF, 2022[4]).

[38] https://suap.enap.gov.br/portaldoaluno/curso/734/.

[39] https://www.escolavirtual.gov.br/curso/211.

[40] https://bit.ly/3PciPxQ.

[41] See https://oecd-opsi.org/innovations/online-public-innovation-course-for-public-officials-labcapital.

[42] See https://oecd-opsi.org/innovations/design-academy-for-public-policy-labgobar.

[43] See full details at https://oecd-opsi.org/innovations/hubgov-program.

[44] https://gobiernodigital.mintic.gov.co/portal/Iniciativas/Centro-de-Innovacion-Publica-Digital.

[45] https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/institucional/estructura-del-organismo/division-tecnologias-emergentes.

[46] This refers specifically to sentiment on public sector use and adoption of these technologies. The Government of Ecuador has been proactive when it comes to promoting the adoption of such technologies among the private sector, such as through the creation Directorate for the Promotion of Emerging Technologies.

[47] https://oecd-opsi.org/innovations/lbchain-blockchain-sandbox.

[48] https://transform.england.nhs.uk/ai-lab.

[49] See Table 3 in https://publications.iadb.org/publications/spanish/document/Regulacion-de-blockchain-e-identidad-digital-en-America-Latina-El-futuro-de-la-identidad-digital.pdf.

[50] https://www.argentina.gob.ar/onti/codigo-de-buenas-practicas-para-el-desarrollo-de-software-publico.

[51] See details in https://www.investbarbados.org/news/barbados-can-be-the-blockchain-fintech-hub-of-the-region.

[52] For example, see https://www.gov.br/mj/pt-br/assuntos/noticias/evento-debate-aplicacao-da-tecnologia-blockchain-no-setor-publico and https://www.gov.br/inpi/pt-br/central-de-conteudo/noticias/evento-discute-uso-do-blockchain-para-protecao-de-pi-e-combate-a-contrafacao.

[53] https://businessblockchainhq.com/business-blockchain-news/chile-treasury-blockchain-project.

[54] See https://newenergyevents.com/chile-to-use-blockchain-technology-for-energy-grid and http://energiaabierta.cl/blockchain/como-funciona-nuestra-certificacion.

[55] https://www.micitt.go.cr/sites/default/files/estrategia-tdhcrb.pdf.

[56] https://www.gob.mx/cms/uploads/attachment/file/269552/Folleto_blockchain_HACKMX_oct2017_v6.pdf.

[57] https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/comunicacion/publicaciones/guias-para-decidir-sobre-uso-blockchain.

[58] The report is available at https://oecd-opsi.org/publications/uncertain-promise-blockchain.

[59] See https://oecd-opsi.org/innovations/smart-rubbish-collection, https://oecd-opsi.org/innovations/smart-rubbish-collection, https://oecd-opsi.org/innovations/reducing-friction-in-trade-rfit and https://oecd-opsi.org/innovations/iot-based-management-and-monitoring-system-for-5g-electromagnetic-fields, respectively.

[60] https://www.argentina.gob.ar/jefatura/innovacion-publica/ssetic/grupo-de-trabajo/iot.

[61] https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/entregas/2019/ministerio-cria-plano-nacional-de-internet-das-coisas-iot.

[62] https://www.micitt.go.cr/sites/default/files/estrategia-tdhcrb.pdf.

[63] https://www.dnp.gov.co/DNPN/Plan-Nacional-de-Desarrollo/Paginas/Pactos-Transversales/Pacto-transformacion-digital-de-Colombia/Transformacion-digital.aspx.

[64] https://www.gub.uy/uruguay-digital/comunicacion/publicaciones/agenda-uruguay-digital-2025

[65] https://www.gartner.com/en/information-technology/glossary/digital-twin.

[66] See https://www.uipath.com/newsroom/uipath-together-sao-paulo-2019.

[67] https://www.ops.gov.ie/actions/innovating-for-our-future/innovation/robotic-process-automation.

[68] https://digital.gov/communities/rpa.

[69] See https://www.argentina.gob.ar/jefatura/innovacion-publica/ssetic/grupo-de-trabajo/big-data.

[70] https://www.gov.br/governodigital/pt-br/EGD2020/inteligente.

[71] https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3920.pdf.

[72] See https://www.oecd.org/governance/digital-government/toolkit/goodpractices/colombia-p3-5-6-7-9-12-excellence-centres-big-data-iot.pdf for more details.

[73] https://www.infotec.mx/es_mx/Infotec/Big-Data.

[74] See Government of Trinidad and Tobago (2021[82]) and (2021[84]) respectively.

[75] See https://en.wikipedia.org/wiki/Metaverse.

[76] See https://trends2019.oecd-opsi.org.

[77] See https://oecd-opsi.org/publications/cracking-the-code.

[78] To learn more about GovTech in the region, OECD and CAF encourage readers to read *GovTech en Iberoamérica : ecosistema, actores y tecnologías para reinventar el sector público* (*GovTech in Ibero-America: ecosystem, actors and technologies to reinvent the public sector*) (in Spanish). The book is available at https://drive.google.com/file/d/1x4EdQDNuwnC_NSdbFVQn4g13bLXNo96L/view (Ramírez-Alujas, Cepeda and Jolias, 2021[85]).

[79] https://www.caf.com/govtech.

[80] For examples of GovTech in action at the local level, see https://apolitical.co/solution-articles/en/a-govtech-goldrush-is-underway-in-latin-america.

[81] The CAF source material includes “data infrastructures” as a lever. However, this topic is not included here because the earlier chapter on data and (OECD/CAF, 2022[4]) cover this topic extensively.

[82] http://scioteca.caf.com/bitstream/handle/123456789/1858/GOVTECH_GOVTECH_ENG-20211222.pdf.

[83] For example, PROSOFT in Mexico (http://www.prosoft.economia.gob.mx), which seeks to promote policies that foster a culture of innovation and technological development and create industrial innovation centres; and a smart cities challenge and a “Hands on DATA” collaboration with CAF to invite data scientists to collaborate with public sector teams to promote artificial intelligence techniques in Uruguay (https://www.caf.com/es/actualidad/convocatorias/2020/02/manos-en-la-data-uruguay-2020-equipos-cientificos/).

[84] See https://www.gov.br/startuppoint/pt-br/legado/comite-nacional-1/copy_of_apresentacao.

[85] https://oecd-opsi.org/innovations/cordoba-smart-city-fund/.

[86] https://www.startupbrasil.org.br.

[87] https://startupchile.org.

[88] For examples of APPS.CO projects, see https://apps.co/comunicaciones/noticias/empresas-apoyadas-por-appsco-hacen-las-primeras-pr.

[89] https://ampyme.gob.pa/?page_id=208.

[90] https://www.panamahub.digital.

[91] https://www.proinnovate.gob.pe.

[92] https://www.senacyt.gob.pa/fondos-para-innovacion-y-emprendimiento.

[93] https://retomexico.org.

[94] https://desafiospublicos.cl.

[95] See https://www.inovativa.online. OPSI's country study of Brazil has details on the impressive history and design of InovAtiva (OECD, 2019[86]).

[96] See https://oecd-opsi.org/innovations/brazillab.

[97] https://innpulsacolombia.com/milab.

[98] https://apps.co/portal/Secciones/Inicio/196163:Semilleros-de-emprendimiento.

[99] See, for example, the CII on Artificial Intelligence (https://www.ciiia.mx).

[100] https://www.infotec.mx/en_mx/Infotec/LaNif.

[101] https://www.gob.pe/8256-presidencia-del-consejo-de-ministros-laboratorio-de-gobierno-y-transformacion-digital.

[102] https://ingenio.org.uy.

[103] https://legalbog.secretariajuridica.gov.co/biblioteca-publico#/biblioteca-publico/2347.

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