

1 Introduction

This chapter provides an overview of the importance of digital government approaches to efforts to transform countries in general before focusing on the evolving understanding of the use of data in the public sector. The chapter concludes by outlining the structure of the report and identifies the anticipated impact and opportunities that will follow.

Digital government approaches are the foundation for transforming a country

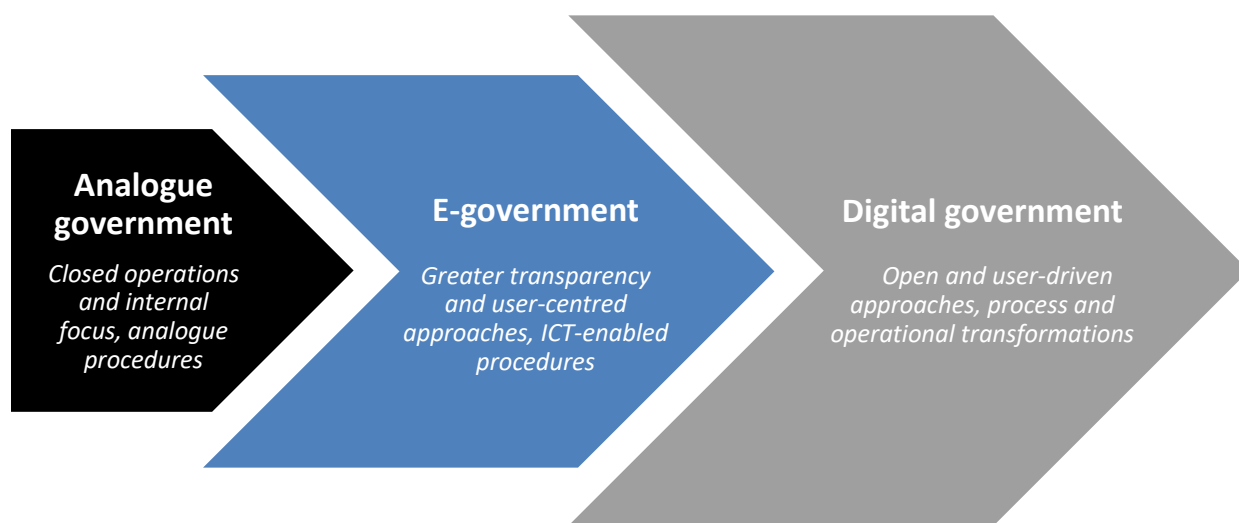
The growth of data and digital technologies are rapidly transforming economies and societies, with enormous implications for governments' daily operations. These technologies have the potential to transform mundane tasks like processing documents or routing requests, and improve service delivery, e.g. speed up diagnosis through medical imagery, automate public transport and detect criminal threats in real time.

Twenty-first century governments must keep pace with their citizens' expectations, manage increasing pressures on their budgets and respond to new policy challenges while at the same time being aware that any failure or misstep in adapting to this new and changing environment could expose them to damaging risks and a consequent diminution of citizens' trust.

The OECD's work on digital government and open government data supports governments in their ambitions for "digital transformation" (see Annex A). Through research, guidance and creating opportunities for collaboration, the OECD helps governments rethink their role, scope of activity and ways of working in light of digital technologies. This work is part of the OECD Public Governance Directorate's mandate to help countries move beyond identifying the possibilities of a particular technology to embedding its application within public sector reform agendas. The goal is to support policy design and delivery processes that reflect the opportunities for digitally native, networked societies and deliver new forms of interaction between the state and its citizens and businesses.

Realising those opportunities demands a paradigm shift in the use of digital technologies and data within governments from "e-government" to "digital government". An "e-government" approach considers technology to be the solution for digitising delivery of an existing analogue process in search of efficiency gains; it makes the implementation of technology the focus. By contrast, digital government practices see technology as secondary to a focus on meeting the need of a user by re-engineering and re-designing services and processes. This digitalisation goes hand in hand with establishing digital-by-design cultures that transform the behaviours of an organisation.

Figure 1.1. From analogue to digital government



Source: Based on OECD (2014^[1]) *Recommendation of the Council on Digital Government Strategies* OECD, <https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406>.

The desire to use digital technologies and data to foster more open, innovative and efficient public sectors is behind the development of the OECD *Recommendation of the Council on Digital Government Strategies* (OECD, 2014^[1]). Through the Recommendation, the OECD has identified several important conditions for successful digital transformation. These have been endorsed by the 36 OECD countries as well as a further 10 non-member countries which have adhered to the Recommendation.¹ This transition is not simply about the application of technology to support government functions, but an evolution in how governments consider the needs of their citizens and involve the public as participants, rather than solely as beneficiaries. This means moving away from top-down assumptions about citizens' and businesses' needs and creating ways to empower them to work with government to identify and understand those needs as well as collaborating to address them. This process should result in governments creating opportunities to improve citizens' well-being by being increasingly responsive, protective and trustworthy (Box 1.1).

Box 1.1. The impact of digital government on citizens' well-being

Countries that commit to a digital government agenda can improve outcomes for their citizens by using digital, data and technology to support the following efforts to become more responsive, protective and trustworthy.

- Responsive governments...
 - ... involve people throughout the design and delivery life cycle to ensure that their needs have been, and continue to be, understood
 - ... proactively reach out to where people spend time (in both online and offline communities) and involve them in the design and delivery of services
 - ... don't just implement technology, but design government and the end-to-end experience of services.
- Protective governments...
 - ... prioritise the protection of the public from external digital security threats and ensure that provided services are reliable and secure
 - ... encourage efforts to restore and distribute trust throughout digital communities
 - ... think about regulation in the context of outcomes rather than an approach to specific technologies.
- Trustworthy governments...
 - ... strike the right balance between online safety and democratic freedoms to build public trust and confidence
 - ... deliver high-quality services that understand users and are open to challenge and feedback
 - ... show citizens what government is doing and empower individuals to see, and control, how their data are being used.

Source: Welby, B. (2019^[2]), "The impact of digital government on citizen well-being", <https://doi.org/10.1787/24bac82f-en>.

The *Recommendation of the Council on Digital Government Strategies* (OECD, 2014^[1]) comprises 3 pillars and 12 principles that ensure the successful design, development and implementation of digital government strategies to enable transformation. The six dimensions of activity shown in Figure 1.2 shape the level of a country's digital government maturity.

1. **Data-driven public sector:** The importance of data as a foundational enabler for public sector organisations to work together in forecasting needs, shaping delivery, and understanding and responding to change.

2. **Open by default:** The desire of governments to collaborate across organisational boundaries, and involve those outside government is an important marker for a culture that will embrace the principles of transparency and accountability that underlie digital ways of working.
3. **Government as a platform:** Building an ecosystem to support and equip public servants to make policy and deliver services that encourages government to collaborate with citizens, businesses, civil society and others.
4. **Digital by design:** The intent of a government to approach digitalisation with an understanding of all the strategic activities needed to facilitate successful and sustainable transformation by changing the processes and culture of delivery.
5. **User-driven:** An approach to delivery enabled by an open culture and supported by ambitions of digital by design to include, and be led by, the needs of the public rather than the assumptions of government.
6. **Proactive:** The ability of governments to anticipate, and rapidly respond to, the needs of their citizens through the application of the five above-mentioned dimensions. Transformed government allows problems to be addressed from end to end rather than the otherwise piecemeal digitisation of component parts.

Figure 1.2. The main characteristics of a digital government



Source: OECD (forthcoming^[3]), *Digital Government Indicators*

The focus of this report is the “data-driven public sector” (DDPS). However, it is important to recognise that DDPS is one of six dimensions that, taken collectively, underpin successful implementation of digital government approaches.

Towards a data-driven public sector

There have been ambitious statements over the last decade about the potential economic and societal opportunities for exploiting data. While some of those hopes have been realised, there have also been some high-profile examples where attitudes towards data have damaged trust in institutions. The most

notable in recent years is perhaps the role of Facebook data being used for political purposes. Turning the promise of data into tangible, measurable and consistent outcomes remains elusive.

This has been especially true within the public sector during its ongoing digital transformation, where legacy technologies, capability gaps and legal obstacles have slowed progress. Nevertheless, there has been a growing recognition of the importance of data to underpin, shape and inform the activity of the public sector at large. Some efforts have focused on the role of open government data (OGD) with the resulting publication of datasets to stimulate private sector innovation, provide opportunities for the economy at large and increase government accountability. Other efforts have looked at the internal application of data to create value and equip public servants to use data in their work. The opportunities associated with emerging technologies such as artificial intelligence and distributed ledgers have also highlighted new challenges around questions of data quality, rights and ethics (van Ooijen, Ubaldi and Welby, 2019^[4]; Berryhill, Bourgerly and Hanson, 2018^[5]; Ubaldi et al., 2019^[6]).

Some countries have made significant progress and individual organisations have seen impressive data-driven results while initiatives like the Digital Nations Data 360° Declaration (2019^[7]) show increasing attention being given to this agenda. However, governments have not yet managed to create coherent and consistent conditions at either the centre of government, or within individual public sector organisations, for data to be viewed and resourced as foundational for creating public value through improved policy making, service delivery and performance management.

This report describes how data-driven approaches can support public sectors to be more open, innovative and agile. The challenge facing governments in maximising the opportunities of a DDPS is in creating the right conditions and facilitating the right behaviours such that there is a whole-of-public sector competence and coherence to the data agenda. A truly data-driven public sector:

- recognises data as a key strategic asset, defines its value and measures its impact
- reflects active efforts to remove barriers to managing, sharing and reusing data
- applies data to transform the design, delivery and monitoring of public policies and services
- values efforts to publish data openly and the use of data between and within public sector organisations
- understands the data rights of citizens in terms of ethical behaviours, transparency of usage, protection of privacy and security of data.

Governments that have implemented a strategic approach for the use of data throughout the public sector are better able to anticipate societal trends and needs and consequently develop more effective long-term plans. Additionally, the active use of data plays an important role in the ongoing design and delivery of public services and efforts to analyse and evaluate all types of government activity to allow for continuous improvement. It also offers transparency about success and failure in ways that support accountability and stimulate public engagement and trust.

It is fundamental for governments to recognise that embracing a DDPS approach is about creating the right conditions within government to provide data-related leadership, develop talent and build skills throughout the public sector. This includes the full gamut of government actors (in budgeting, public employment, regulation, public sector integrity, etc.) as well as in sector-specific interventions such as education, health and welfare.

Furthermore, a DDPS approach seeks to combine conversations around OGD and internal government data so that they are understood collectively rather than as two separate agendas. OGD is an important part of the conversation, but should no longer be treated as an isolated policy. Instead, it is simply data, whether open or closed, that can result from good public sector data management practices and policies as presented in this report. Balancing open-by-default approaches with the protection of sensitive and private data, data ethics, and citizens' consent are equally important in securing the promise of the DDPS.

The link between the use of data and a whole host of public sector outcomes is critical. Many aspects of public sector delivery are based on hypotheses about the efficacy of government interventions; data allow governments to test and adjust their approaches. In the field of regulation, to cite one example, the ability to carry out real-time analysis based on various sources of data provides a transformative opportunity to rethink from the ground up the way in which a particular aspect of the public sector might function, thus moving away from a one-size-fits-all model to responding to demand, risk and context (OECD, 2018^[8]).

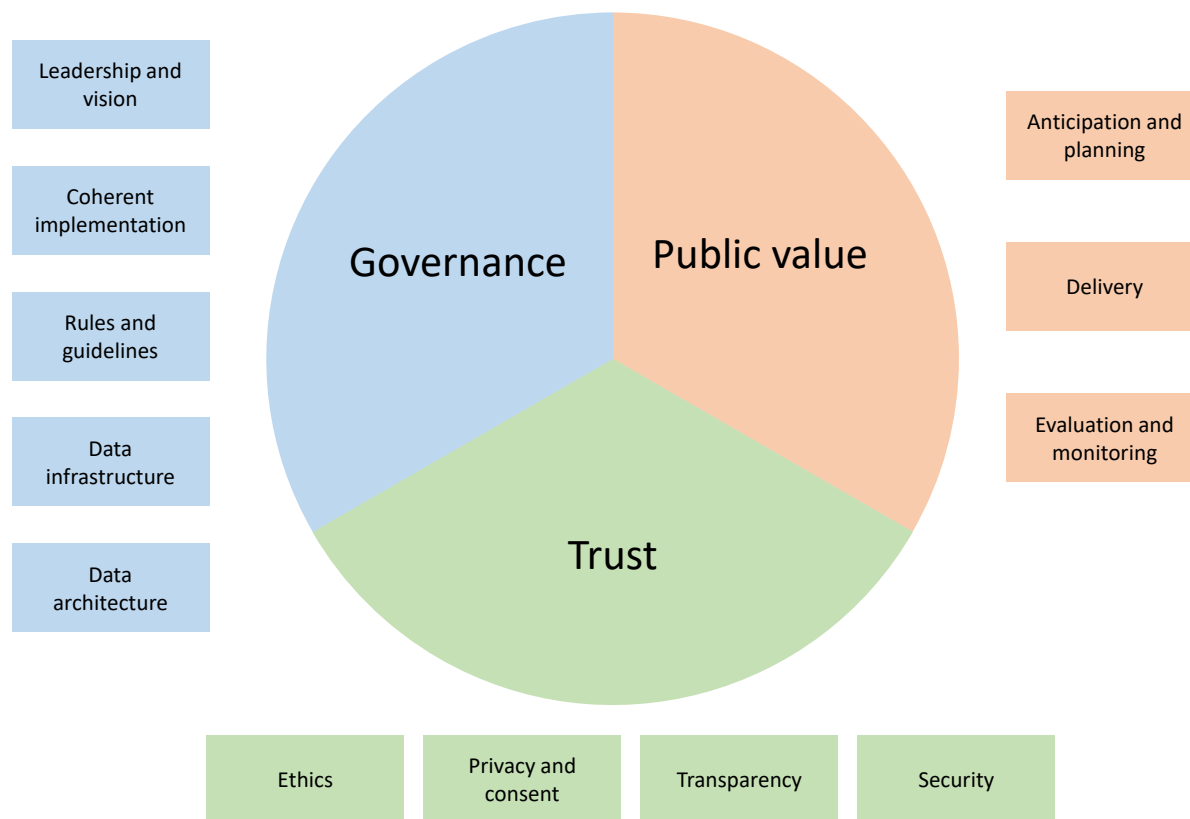
It is important to keep in mind the role which internal attitudes towards risk management play in the ability to embrace new and emerging technologies. A DDPS enables the effective use of emerging technologies such as artificial intelligence and distributed ledgers, among others. This report lays out the need for a coherent and comprehensive data governance model that provides a framework to build trust, mitigate risk, and encourage governments to experiment and innovate. Nevertheless, while leadership and vision are important, there remains a critical need to consider closing the data-related skills deficit within the public sector.

The data-driven public sector report

This report reflects on the evolution of understanding about the trends, opportunities and challenges that emerge within data-driven public sectors and provides evidence and guidance for countries seeking to embrace all the opportunities such a model might offer. It provides a conceptual framework to support countries in their efforts to understand the value of data for the public sector and to develop a strategic approach to capturing this value.

The analytical framework used to consider the full breadth of DDPS consists of the following three areas of focus: 1) a comprehensive model for data **governance** (see Chapter 2); 2) the application of data for **public value** (see Chapter 3); and 3) the role of data in public **trust** (see Chapter 4). Within these 3 areas, a further 12 sub-dimensions are proposed, not to represent an argument for a one-size-fits-all model, but to acknowledge it is the combination of efforts across these areas that will support attempts to implement a DDPS as shown in Figure 1.3. This is an aspirational model composed of best practices from around the world. No country has yet implemented a holistic approach to this topic.

Figure 1.3. The 12 facets of a data-driven public sector



Chapter 2 looks at data governance and seeks to answer the question: what does a country need to put in place to create the enabling conditions for a DDPS? It proposes a definition of data governance, establishes the purpose of having data governance and talks through the development of a common framework for establishing such governance. The report will argue that countries need to develop a cross-government, coherent approach to data governance that broadens the usual conversation on this topic to reflect the critical elements for achieving system of government-wide benefits in underpinning a truly data-driven public sector. The elements of this framework are:

- the leadership and vision to ensure strategic direction and purpose for the data-driven conversation throughout the public sector
- the need for coherent implementation across government as a whole and within individual organisations
- putting in place, or revisiting, rules, laws, guidelines and standards associated with data
- developing the necessary data infrastructure to support the publication, sharing and reuse of data
- having a data architecture which reflects standards, interoperability and semantics throughout the generation, collection, storage and processing of data.

Chapter 3 focuses on how the application of data generates public value. After a discussion about the government data value cycle and the ways in which countries might define and measure “public value”, the chapter considers how such value might be created, or increased, through three types of activity:

1. Anticipation and planning: The role of data in enabling the design of policies, planning of interventions, anticipation of possible change and forecasting of needs.

2. Delivery: How the use of data can inform and improve the implementation of policy, responsiveness of government and provision of public services.
3. Evaluation and monitoring: The approach to data involved in measuring impact, auditing decisions and monitoring performance.

These uses of data are not separate silos, but highlight that different aspects of government reflect different parts of the design, delivery and implementation lifecycle, from planning for the future to delivering today and evaluation of what has already happened. Each of these aspects informs and shapes the next aspect in ways that support an iterative, continuously improved approach to the effectiveness and efficiency of government.

Putting in place good data governance and applying data to create public value will increase the well-being of citizens by delivering better quality services that are more inclusive of, and responsive to, citizens' needs. However, one of the strands of citizen well-being has a less tangible source, and that is public trust in government. The trust of citizens in government is far easier to lose than it is to build, and can be damaged by the way in which governments handle their citizens' data. Therefore, Chapter 4 looks at how a DDPS can respond to these challenges and the data rights of citizens by:

- adopting an ethical framework to guide decision making and inform behaviour
- protecting privacy and clarifying data ownership and permissions while understanding the dynamics and user experience of how citizens understand and grant or revoke consent for data to be used
- securing transparency in how data are used
- recognising that to mitigate risks, the security of government services and data must be considered in ways that do not impede efforts to transform the experience of the public or the capacity of public servants to deliver.

In presenting the facets of a DDPS discussed above and summarised in Figure 1.3, this framework can inform the political leadership and strategy either for the centre of government, or for the local context within a given sector or organisation. This report is accompanied by two case studies looking at the DDPS experience in the areas of public sector integrity, and public employment and management.

Anticipated impact and next steps

This report shows the importance of considering a whole-of-government approach to developing a coherent and comprehensive model of data governance in order to create the necessary conditions for ensuring that the benefits of data are maximised by governments being efficient, transparent and trustworthy.

This report is aspirational. It provides an overview of the state of data-driven practices in several countries. It also introduces various topics and considerations for understanding the potential of data in the public sector. This conceptual analysis results in the 3 pillars and 12 dimensions of a framework that can be used by countries and organisations for assessing the different elements required for a DDPS as shown by the recent *Digital Government Review of Panama* (OECD, 2019^[9]).

While not a one-size-fits-all prescriptive model, it can inform a country's strategic efforts to move towards becoming a DDPS. Through the analysis of data governance, it will propose the main changes that countries may need to make. It will also identify the potential benefits of a DDPS in terms of the management and use of data for the design, delivery and monitoring of public policies and services. Additionally, the report will highlight the factors to take into consideration in terms of the increasing need to approach the use of data in ways that protect and enhance trust.

No country has yet addressed all of these elements. While this report could be useful to a range of different audiences, from the novice to the expert, its ambition is to provide those with the responsibility for leading

and developing data strategies with a framework that they can use to consider each of the areas that collectively will lead to digital transformation. The report will provide not only evidence for clarifying the political imperative, but also for developing business cases to support the implementation and use of data in proactive and preventative risk management, public sector productivity, and public sector innovation.

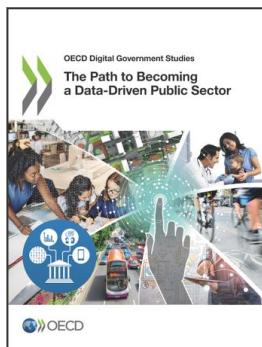
This report provides a series of conclusions that could form the basis for the development of a new OECD Recommendation setting out the practical steps that countries need to take in order to become truly data-driven and unlock the opportunities for transforming society by increasing the effectiveness of delivery, openness of engagement and trustworthiness of government.

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Note

1. The non-member countries that have adopted the Recommendation are Argentina, Brazil, Colombia, Costa Rica, Egypt, Kazakhstan, Morocco, Panama, Peru and the Russian Federation.



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