OECD Digital Government Studies

Benchmarking Digital Government Strategies in MENA Countries



OECD

OECD Digital Government Studies

Benchmarking Digital Government Strategies in MENA Countries



This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

Please cite this publication as:
OECD (2017), *Benchmarking Digital Government Strategies in MENA Countries*, OECD Digital Government Studies, OECD Publishing, Paris.
http://dx.doi.org/10.1787/9789264268012-en

ISBN 978-92-64-26800-5 (print)
ISBN 978-92-64-26801-2 (PDF)

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

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

Photo credits: Cover © iStock.com/javarman3

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

© OECD 2017

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgement of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to *rights@oecd.org*. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at *info@copyright.com* or the Centre français d'exploitation du droit de copie (CFC) at *contact@cfcopies.com*.

Foreword

Digital technologies are one of the most transformational factors of our time, including their impact on effective public governance and potentially economic competitiveness. To reap the benefits, policies on the use of digital technologies need to be adequately embedded in public sector reform strategies. The OECD Recommendation of the Council on Digital Government Strategies (2014) offers guidance on their design and implementation. Countries in the MENA region are seeking to align their digital government strategies to the principles in this Recommendation to enhance transparency, improve service delivery for citizens and businesses, and foster more productive, competitive and inclusive public institutions.

This report provides an in-depth look at how Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates are using digital technologies to achieve broader policy objectives. The report finds that significant progress has been made in improving connectivity, establishing the basic infrastructure and using ICTs for more efficient services. They have laid the foundations for the digital transformation of the public sector in a way that ensures greater accessibility for all.

However, the report also shows that a more structured use of new technologies could better meet citizens' expectations, help secure trust in government and support inclusive growth. For example, ICTs could be used more effectively to engage citizens in the design of public policies as well as in the design, delivery and evaluation of public services. A more strategic use of ICTs can help the different parts of the public sector work together and share resources, as well as improve data governance and cybersecurity policies. More fundamentally, the report calls for a cultural shift in the public administration to center services and policies on citizen's needs and preferences.

These countries need a robust strategic and policy framework to implement digital government strategies successfully and consistently across the administration. In line with the OECD Recommendation, they should develop institutional set-ups that enable a coherent use of technology across levels of government.

Finally, the report stresses the relevance of building institutional capabilities to successfully manage complex ICT projects and programmes, ensure value for money in ICT investments and asset management, and deliver benefits to all social groups. Drawing on OECD best practices, standards and legal instruments, this report provides policy makers with recommendations for moving forward with the digital transformation.

For over a decade, the MENA-OECD Governance Programme, a strategic partnership between MENA and OECD countries, has supported public governance reform and modernisation efforts through peer learning, and the sharing of knowledge and expertise. This report was prepared within the framework of the MENA-OECD Working Group II on Open and Innovative Government and builds upon the OECD Open Government Project and the work of the OECD Working Party of Senior Digital Government Officials (E-Leaders). The report also follows up on the recommendations contained in the Open Government Reviews of Morocco and Tunisia, which stressed the importance of using digital technologies to more effectively embed the principles of openness and accountability in public sector reforms.

Acknowledgements

This report was prepared by the MENA-OECD Governance Programme in the framework of its Open Government Project, in cooperation between the Reform of the Public Sector Division and the Governance Reviews and Partnerships Division in the OECD Directorate for Public Governance and Territorial Development (GOV), within the framework of its work on Digital Government.

The OECD would like to thank all stakeholders who provided valuable information and feedback throughout the drafting process. The Secretariat would like to thank in particular Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates for participating in this study. The Secretariat is grateful for the strategic guidance received from government and civil society representatives during the workshop on Open Data which took place from 19-20 October 2015 in Italy, as well as the valuable feedback from countries participating in the 11th Annual Meeting of the Working Group 2 on Open and Innovative Government on 7 February 2016 in the UAE.

This report was produced under the leadership of Rolf Alter, Director of Public Governance and Territorial Development Directorate, Edwin Lau, Head of Reform of the Public Sector Division and Martin Forst, Head of Governance Reviews and Partnerships Division. It was drafted by Rodrigo Mejia Ricart under the supervision of Barbara-Chiara Ubaldi, Senior Project Manager leading the OECD's work on Digital Government and Open Data. Katharina Zuegel contributed to the report throughout the whole process and Alessandro Bellantoni, Senior Policy Analyst and Coordinator of the OECD Open Government Project provided strategic guidance and alignment with the OECD Open Government Project. Editorial work and quality control were provided by Liz Zachary and Ciara Muller, who prepared the manuscript for publication.

The OECD wishes to thank the United States Middle East Partnership Initiative (MEPI) for its financial support to the OECD Open Government Project.

Table of contents

Executive summary 11

Assessment and recommendations 15

Chapter 1. **Background and methodological considerations** 33

The OECD Recommendation of the Council on Digital Government Strategies 35
Methodology of the report: Applying the OECD Recommendation to selected countries in the MENA Region 39
Notes 40
References 41

Chapter 2. **An overview of the digital context in the MENA region** 43

Notes 54
References 55

Chapter 3. **Using digital technologies to bring governments closer to citizens and businesses** 57

Principle 1: Ensure greater transparency, openness and inclusiveness of government processes and operations 60
Policy recommendations 67
Principle 2: Encourage engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery 68
Policy recommendations 74
Principle 3: Create a data-driven culture in the public sector 75
Policy recommendations 81
Principle 4: Reflect a risk management approach to addressing digital security and privacy issues, and include the adoption of effective and appropriate security measures 82
Policy recommendations 84
Notes 85
References 86

Chapter 4. **Effective governance frameworks and co-ordination mechanisms for digital government** 89

Principle 5: Secure leadership and political commitment to the strategy 90
Policy recommendations 93
Principle 6: Ensure coherent use of digital technologies across policy areas and levels of government 94
Policy recommendations 97
Principle 7: Establish effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across government 98
Policy recommendations 105
Principle 8: Strengthen international co-operation with other governments 106
Policy recommendations 107
References 109

Chapter 5. **Building capacity for implementation and impact** 111

Principle 9: Develop clear business cases to sustain the funding and focused implementation of digital technologies projects 112
Policy recommendations 115
Principle 10: Reinforce institutional capacities to manage and monitor projects' implementation 116
Policy Recommendations 119
Principle 11: Procure digital technologies based on the assessment of existing assets 120
Policy recommendations 122
Principle 12: Ensure that general sector-specific legal and regulatory frameworks allow digital opportunities to be seized. 122
Policy recommendations 125
Notes 125
References 126

Annex A. **Policy levers of digital government co-ordinating units in the OECD** 127

Figures

Figure 1.1. OECD Recommendation on Digital Government Strategies 35
Figure 1.2. Digital transformation of the public sector: From e-Government to Digital Government 36
Figure 1.3. International migration stock as a percentage of the total population 38
Figure 2.1. Fixed broadband subscriptions (per 100 people) 44

Figure 2.2. Internet users (per 100 people) 45
Figure 2.3. Mobile cellular subscriptions (per 100 people) 45
Figure 2.4. Facebook penetration in selected MENA countries (in %) 46
Figure 2.5. Active Twitter users (total of population) 47
Figure 2.6. Adult literacy rates (15+)....48
Figure 2.7. Main challenges for implementing digital government strategies 49
Figure 2.8. Stakeholders involved or consulted in the development of the digital government strategy....50
Figure 2.9. Digital government strategies may apply to different levels of government 51
Figure 2.10. Main goals of digital government strategies in selected MENA countries....52
Figure 2.11. Perceived regulatory quality....53
Figure 3.1. Confidence in national governments (2014)....58
Figure 3.2. Perception of corruption in government, 2014 59
Figure 3.3. Transparency and access to information laws that foresee an "open by default" standard for government data....61
Figure 3.4. Control of corruption (2008-2014) 63
Figure 3.5. Countries with a centrally available list (e.g. database, repository or framework) defining all services provided by the public sector....66
Figure 3.6. UN e-Participation Index....69
Figure 3.7. ICT-enabled mechanisms for public engagement and participation 70
Figure 3.8. Countries with a strategy or policy in place to promote the re-use of open government data....73
Figure 3.9. OECD countries with a strategy or policy focusing on data literacy inside government and/or in the broader society 77
Figure 3.10. Data literacy policies or strategies targeting civil servants....78
Figure 3.11. OECD countries with a chief data officer (CDO)....79
Figure 3.12. Countries with a function or unit responsible for data security and/or privacy 83
Figure 4.1. Perceived relevance of national digital government strategy in Estonia and Finland....91
Figure 4.2. Stakeholders involved or consulted in the development of the strategy....93
Figure 4.3. Policy areas covered by the digital government strategy in selected MENA countries 95
Figure 4.4. Formal co-ordination mechanisms in selected MENA countries 96
Figure 4.5. Single functions or units responsible for leading or co-ordinating decisions on the use of ICT within central government 99
Figure 4.6. ICT governance structures across OECD countries....100
Figure 4.7. Policy levers of the central government ICT co-ordinating unit 102

Figure 5.1. Use of business cases for ICT projects in selected MENA countries 114
Figure 5.2. OECD countries with a standardised model for structuring and presenting business cases 115
Figure 5.3. OECD countries with a standardised ICT project management model 117
Figure 5.4. OECD countries with a strategy to develop, attract and retain ICT-skilled civil servants 119
Figure 5.5. Countries with a strategy covering ICT procurement specifically 121
Figure 5.6. Countries that recognise citizen's right to request digital communication with the public sector 124
Figure 5.7. OECD countries that recognise the right of citizens not to provide the same data or information to the public sector more than once 124

Tables

Table 3.1. Access to Information 62

Executive summary

This report identifies trends and challenges in digital government in Middle Eastern and North African (MENA) countries, and provides policy recommendations to help the reviewed countries move closer to OECD standards. The *Recommendation of the Council on Digital Government Strategies* (2014) provides the analytical framework for this benchmarking exercise, which compares current digital government strategies and policies in the MENA countries against the principles contained in this Recommendation.

The report assesses the digital government strategies of Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates. This group of countries has recognised the strategic importance of digital technologies for public sector modernisation, and is developing digital government strategies. The rapid and enthusiastic uptake of information and communications technologies (ICTs) in the region and the rise of the first generation of "digital natives", individuals born and raised in the digital era, are putting pressure on governments to adapt their communication and interaction channels to a 21st century constituency.

This new context, including fiscal pressures and increasingly complex policy challenges, demands a cultural shift in the public administration. The ability to design digital services should be considered a core competency. Governments need to design services centred on user needs, and not exclusively on the public sector's own priorities. This implies having the skills to engage with users and to maintain an open dialogue that informs public decision making, and allows governments to put the talents, ideas and assets of external stakeholders to use. In an increasingly digital world, mobilising ICTs such as mobile technologies and social media to promote government openness has become a key requirement for public sector modernisation.

MENA countries have taken important steps to reinforce this cultural shift. Working with multilateral organisations, such as the OECD, they have developed strategic policy frameworks to foster open government and, in some cases, institutional arrangements to support the co-ordination of open government initiatives with other relevant initiatives, such as digital

government and public sector innovation. However, overcoming resistance to change within public administrations requires a profound revision and re-engineering of rules, processes and incentives that ultimately make up the system in which civil servants operate.

These efforts have started to pay off. Governments have established open data portals and revised their legal and regulatory frameworks to consolidate citizens' right to information, public sector transparency and accountability. However, digitally enabled openness and engagement (Pillar I of the Recommendation) will require reducing "digital divides", unequal access to ICTs, and promoting inclusiveness. If adequately deployed, new technologies can enhance access to services in remote areas with poor access to infrastructure. For instance, telemedicine is helping doctors follow up with patients outside of hospitals, and mobile phones deliver services to small farmers. Open data and participation portals are enabling citizens to participate in public decision-making and develop new services and solutions to public problems. These are cost-effective tools contributing to a more participatory form of governance that should be scaled up.

Furthermore, countries of the region should improve the capacity needed to steer the digital transformation, prioritise and oversee investments, and co-ordinate government actions (Pillar II of the Recommendation). Failure to address these points would pose significant threats in terms of lack of coherence in digital government implementation, duplication of efforts and inefficient spending. Sustainable and cross-cutting initiatives to promote central-local co-ordination in digital government strategic objectives and investments should also be seen as a priority.

Digital government in the region would not only benefit from enhanced political support and steering capacity, but also from more robust monitoring and evaluation systems. Generally speaking, monitoring systems to follow up on digital government policies and initiatives should be improved and more systematically used. Mature monitoring and evaluation systems would allow countries to make evidence-based decisions, fine-tune ICT investments and promote a culture of performance in digital government activities.

Developing capacities to support the implementation of digital government strategies remains a real challenge for the region (Pillar III of the OECD Recommendation). Digital and data skills are still scarce and unevenly distributed across territories and policy areas. Budgetary constraints make it challenging for governments to offer competitive salaries that attract ICT-skilled professionals to the public sector. The countries assessed in this report lack strategies or programmes to build or deploy digital talent across the public sector.

As in the case of some OECD countries, the countries assessed need more mature and structured approaches to developing ICT projects and deploying digital technologies. This means embedding tools across the public sector that can support sound decisions on ICT investment and management. These include business cases and ICT project management models to justify strategic investments, structure their implementation and monitor progress and benefits. As per OECD best practices, this report recommends the development of an ICT procurement strategy to enable governments to achieve economies of scale, while fostering innovation and promoting coherence in the use of ICTs in the public sector. Furthermore, countries should regularly review and update their legal and regulatory frameworks to make sure they provide the enabling conditions for their societies to reap the full benefits of digital technologies.

This study acknowledges the relevance of the strategies, policies and practices put in place by Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates. Still, it points out that mobilising digital technologies strategically to deliver greater public sector performance will demand that they cease to be seen as a support system, and increasingly as a core component of public sector reform, and reflected as such in public decision-making.

Assessment and recommendations

Overview

Over the past decade, governments of the MENA region have made efforts to leverage information and communications technologies (ICTs) as drivers of efficiency gains and enhanced public sector performance. E-Government policies in MENA countries have made the processing of administrative procedures more agile. However, as recognized by the Recommendation of the OECD Council on Digital Government Strategies (2014), the use of technologies in the public sector has achieved a tipping point. New opportunities offered by digital technologies and greater maturity in ICT use by governments are leading public administrations to a paradigm shift, moving from e-government to digital government.

This paradigm shift reflects a focus on more ambitious objectives. Governments are not looking to use ICTs to enhance services that were designed in a pre-digital era with an analog mindset, but to fully re-engineer services to make them digital by design. By leveraging data and technology as core components of public sector reform, digitally-advanced governments aim to build a user-driven public administration that is better able to meet citizens' needs and tackle the important policy challenges of our time.

Through its Recommendation on Digital Government Strategies, the OECD recognises digital government as a core component of good governance. The strategic use of digital technologies becomes increasingly relevant to build strong, effective and efficient institutions favour more inclusive forms of governance and greater social well-being.

Governments in the MENA region are facing a new and increasingly complex policy scenario, which has become a significant driver of digitalisation. In face of low international demand for commodities, annual GDP growth is down to 2.9% from the 6.2% pre-crisis growth in 2007. Digital government has the potential of making public administration more responsive and agile in service delivery and administrative procedures while promoting greater efficiency and transparency, creating a more competitive environment for the economic activity and job creation.

Demographic pressures are an equally strong driver of change. Although local specifies make each national context unique, as in other regions in the world, MENA countries are becoming increasingly urban, which creates additional challenges in terms of organization and service delivery. These challenges require smarter ways to plan, monitor and deliver services leveraging technology and data to perform effective urban planning and waste management, efficiently organize public transport, rationalize the use of energy and resources while ensuring access to basic services.

The rise of the digital natives is an additional game changer. Digital technologies are drastically changing how citizens and institutions, public and private, operate. More connected and informed constituencies are putting pressures on governments across the region to modernise public service delivery and provide citizens with a greater say in public decision-making. To meet the preferences of the digital natives, governments have no alternative but to use technologies more effectively.

Despite acknowledging the need to transform themselves through the use of digital technologies, governments around the world still struggle to implement key ICT projects. According to World Bank data from 2010 to 2014, up to 87% of large public sector ICT projects were considered failures or partial failures[1] (World Bank, 2016).

To help governments improve their ICT performance and realise their digital ambitions, the OECD developed the aforementioned Recommendation containing basic guiding principles for policy-makers. In this report, the OECD will benchmark digital government strategies and policies from Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates against the principles contained in the OECD Recommendation and advance an assessment of the digital government situation in these key countries of the MENA region. Based on this analysis, the OECD will provide actionable policy recommendations to help countries meet OECD standards and good practices in this policy area.

The digital context in MENA countries

The countries assessed in this report present different levels of internet penetration, from slightly above 30 subscriptions per 100 people in Egypt, to 90 internet subscriptions per 100 individuals in the UAE. In all the countries assessed, however, the number of internet users is increasing every year (World Bank, 2014). Mobile penetration is high and growing in all countries

[1] Using three criteria for success: delivered on time, within budget and a product that serves the purpose it was conceived for.

and the regions' young are increasingly dynamic in social media, providing alternative channels of interaction between governments and citizens.

Limited access to ICT infrastructure and relatively low levels of literacy and digital competencies are an important obstacle to the digital transformation of the public sector and the continued development of the digital economy in the region. This is particularly true in rural areas.

Yet, countries across the region still report that the lack of awareness within the public sector and in the society more broadly seems to represent the most important challenge in the implementation of digital government strategies. Digital government efforts are still perceived as technical support activities and not as a core strategic component of public sector activities.

The main objectives pursued through the digital government strategies in place are reportedly the achievement of efficiency gains, the improvement of public sector transparency, the enhancement of data and information sharing and use within the public sector, and the delivery of more tailored and convenient services.

Bringing citizens and businesses closer to government

OECD countries have recognised the potential offered by new technologies to create more transparent, accountable and inclusive institutions. These objectives are embodied in principle 1 of the OECD Recommendation on Digital Government Strategies.

For ICT-enabled openness to be effective, governments in the MENA region should put a particular emphasis in building a digitally inclusive society. To achieve this, they must work with institutional and non-institutional stakeholders to develop digital skills throughout all social groups and set up adequate market conditions that favour the development of ICT infrastructure and access to affordable and high quality ICT services. They must progressively put in place the basic infrastructure for digital government, such as eID to ensure access to transactional digital services and better support the public sector management and exchange of information. In the meanwhile, greater inclusiveness should be strengthened through effective multi-channel service delivery strategies. By enhancing data management and flow, the digital transformation of the public sector offers the opportunity to improve face-to-face service delivery in remote areas, for instance, through one-stop shops.

Fostering the necessary cultural change throughout the public sector, countries in the region should put in place a sound strategic and policy framework, supported by as wide consensus and ownership as possible, and progressively revise public sector incentives to support this cultural shift.

The existing legal and regulatory framework on access to public information and data should be updated to reflect the new digital reality and reap the potential of the use of technologies to enhance accountability, (e.g. open by default standards when it comes to government data). Government data should also be made accessible to different skill-levels, leveraging, for instance, visualisation tools to make data understandable to citizens.

Recommendation: Leverage digital technologies and data to open up government and create an inclusive digital environment

Setting up key enablers:

- Through collaboration with non-institutional actors, create the necessary conditions for digital inclusion in terms of skills and access to services.
- Develop a multi-channel service delivery strategy for public services, maximising their outreach capacity.

Develop the appropriate policy framework:

- Develop a digital government strategy and action plan and revise legal and regulatory frameworks to guarantee access to and transparency of government processes, operations, information and data supported by digital technologies.
- Ensure easy access to information and data for citizens of varying levels of skills and education.

Harness support for, and ownership of, the agenda to drive implementation:

- Develop a communication strategy to help stakeholders understand the importance of open government.
- Assess and restructure existing incentives in the public sector and broader society to support a culture of openness in the administration.

Encouraging engagement and participation in policy-making and service delivery

To deal with increasingly complex policy issues, for which the public sector does not have the capability or information to tackle alone, as well as deciding upon difficult trade-offs, governments must increasingly engage all the relevant stakeholders in decision-making processes as well as in policy implementation and service delivery. Digital technologies can enable more inclusive forms of policy-making and service delivery, which can deliver more inclusive outcomes.

The governments assessed in this report all use some forms of ICT-enabled engagement and participation mechanisms. Morocco and the United Arab Emirates show good performance in the UN e-Participation Index. However, to become a transformational shift in governance, the use of cost-effective digital channels of participation needs to be scaled up and participation supported through timely access to public information and data that is relevant to decision-making and service design and delivery. These should be complemented by the development of civil servants' engagement culture and skills.

Recommendation: Leverage digital technologies and data to open up government

Achieve scale in digitally enabled participation, and structure inclusive policy making

- Upscale the existing participatory platforms and streamline ICT-enabled participation to enhance their impact through broader participation and effective follow-up.
- Develop a structured approach for participation and engagement throughout the policy cycle, ensuring timely access to information to support decision-making.
- Develop a systematic service design standard that regularly consults service users on their preferences.

Develop institutional capacities and collaborative skills in the public sector

- Develop capacities in the public sector to co-design and co-produce services and policies

Creating a data-driven culture in the public sector

The rapid progress of digital technologies over the last two decades has dramatically accelerated our ability to produce, store and process data. These new opportunities have significantly increased the ability to cross and use different sources of data to identify trends and correlations, gain a better understanding of complex issues and make evidence-based decisions. However, to achieve this in the public sector means the recognition of data as a strategic asset, and the development of procedures, systems and frameworks that maximise the impact of data in public decision-making throughout the policy cycle in ways that support the achievement of desirable outcomes.

While governments across the OECD have started to rethink their governance and the public decision-making process to create a data-driven culture in the public sector, the countries assessed are still at the very early stages of establishing the necessary enablers for Among the countries surveyed, only the United Arab Emirates' digital government strategy acknowledges the imperious need of developing a data governance that fosters system integration for sound decision-making. Weak data governance has contributed to the lack of interoperability, the duplication of efforts, the overall fragmentation of the public sector and resulted in significant untapped opportunities.

Laying out the foundations of a data-driven public sector will also require the development of the necessary data skills in the public sector to create a 21st century civil service that can help the public administration adequately identify and assess challenges and come up with solutions.

Recommendation: Create a data-driven culture in the public sector

Strengthen data governance across the public sector

- Develop standards and guidelines for public sector data use, management and sharing.
- Develop a framework and action plan to ensure data interoperability and the development of the required data infrastructure for data sharing across the public sector.

Develop skills to support a data-driven public sector

- Perform a skills assessment across the public sector and develop a human resources strategy that helps develop, attract and retain data skills across the public sector.

Managing risks in addressing digital security and privacy

Strategic and policy documents of all the countries assessed stress the importance of ensuring citizen's privacy and data security in government information systems. Four of the countries assessed reported having in place a Computer Security Incident Response Team (CSIRT). However, these teams are often ill-equipped in terms of skills, technical capabilities, sources of information and financial resources to effectively play their role.

This policy area lacks in maturity, not only in the region, but internationally. The lack of robust comparable data to guide policymakers demands stronger co-operation in the development of sound indicators as well as dynamic practice-sharing and peer-learning. Moreover, service providers and users must be aware of the risks associated with digital technologies as well as of good practices for risk mitigation.

Recommendation: Reflect a risk management approach to digital security and privacy

Develop a conceptual, institutional and policy framework (CSIRT)

- Establish a CSIRT and a personal data protection authority equipped with the necessary capabilities.

Strengthen collaboration with relevant stakeholders to improve intelligence

- Develop partnerships with the private sector to collect data on security incidents and privacy violations.
- Strengthen collaboration with other governments and international organisations to foster learning and policy expertise.

Mitigate risks

- Develop a strategy to increase awareness of risks and risk mitigation within the public sector and the broader public.

Securing leadership and political support for digital government

Experience across OECD countries shows that strategic and political prioritisation of digital government as a core area of public sector reform is instrumental for its success (OECD, 2015a). Senior management often lack awareness of the strategic value of digital technologies to drive public sector reform and effectiveness. The data of the MENA-OECD Questionnaire on digital government (2015b) shows that there is room for improvement in terms of awareness of the relevance of digital government for public sector reform, high lighting the need for political support and leadership in this agenda.

OECD data also highlights the need for a more participatory process in the development of digital government strategies. Adequate engagement in the development of the strategy, and ensuring the core views of the stakeholders involved are reflected in a shared vision, promotes a sense of

ownership, fosters cross-agency collaboration as well as higher rates of implementation.

Recommendation: Secure leadership and political support for digital government

Engage with stakeholders and secure political support

- Secure support and political commitment to the national digital government strategy.

Sensitise senior management

- Sensitise senior management at the central level of government to the need of the digital transformation.

Link to broader public sector reform strategies

- The digital government strategy should be in tune with broader public sector reform agendas.

Ensuring the coherent use of technologies across policy areas and levels of government

Managing distributed responsibilities and wide variety of technology options is essential if governments want to avoid the digital fragmentation of the public sector and thus reap the bull benefits of digital government. If it benefits from broad political support and consensus, digital government strategies can be an important driver of coherence in the use of technologies. By setting a shared vision and common objectives, the strategy becomes a governance tool that mobilises energy and resources in ways that maximise synergies and enables the public sector to achieve government-wide and sectorial objectives.

As in OECD countries, digital government strategies across in the countries assessed in this report aim at the transformation of service delivery and cover major policy areas and, in particular, key public services (e.g. general public services, health, education, social protection). However, a major gap can be identified at the subnational level.

Subnational governments are rarely involved in the development of digital government strategies. The absence of formal coordination mechanisms between the central and local levels of government represents an additional challenge, potentially hindering a more even development of digital government across the territory.

Moreover, units and bodies responsible for the co-ordination of digital government policies often lack the political support or authority to fulfill their role within and across levels of government. In addition, governments of the region usually lack the tools to ensure coherent approach in ICT procurement in ways that facilitate systems interoperability, the re-use of existing assets and prevents the duplication of efforts.

Recommendation: Ensure a coherent use of technologies across policy areas and levels of government

Build a shared vision across the public sector

- Build a shared vision of digital government across policy areas and levels of government through the engagement of relevant stakeholders, supported by robust co-ordination mechanisms.

Strengthen governance frameworks to ensure coherence

- Set up institutional frameworks that are in tune with digital government policy objectives and benefit from adequate political support and authority.

Develop institutional capacities

- Develop capacities to procure ICT strategically.

Establishing effective and governance frameworks to co-ordinate the implementation of the digital government strategies

Effective governance and organizational frameworks require clear roles and responsibilities in the development, co-ordination, implementation and oversight of digital government policies. Among the countries assessed in this report, only Lebanon reported the absence of a single unit responsible

for the co-ordination of digital government policies across the central government.

In comparison with OECD countries, these co-ordinating units have similar soft levers to ensure the effective implementation of the strategy (such as monitoring or advice). However, they are less often endowed with hard or coercive levers, such as approving or stopping ICT projects, or mandating external reviews of digital government initiatives. A careful assessment of governance models across the OECD shows that there is no one-size-fits-all formula. Rather, the design effectiveness of the co-ordinating unit is largely contextual, relying on a diversity of variables of the overall institutional framework of the country. The policy levers available to digital government co-ordinating units should reassessed to ensure they have the ability to be effective drivers of the digital transformation of the public sector.

Furthermore, institutional set-ups and governance mechanisms should be regularly reexamined based on the changing environments, new technological trends and the strategic priorities of the country.

Finally, a robust governance must include the use of effective monitoring and evaluation systems, with robust performance indicators.

Recommendation: Establish effective organisational and governance frameworks

Identify clear roles and responsibilities

- Identify clear roles and responsibilities in the governance of public sector ICT.
- Establish a unit or body at the central government level in charge of co-ordinating government-wide ICT policy (Government CIO or equivalent position) if clear roles are not identified.

Choose the right policy levers

- Institutions responsible for steering the digital transformation should be provided with the appropriate policy levers to meet their objectives.

Recommendation Establish effective organisational and governance frameworks *(continued)*

Strengthen co-ordination mechanisms

- Establish co-ordination mechanisms both within and across levels of government at the strategic and operational levels.

Regularly review the existing governance architecture

- Ensure that governance frameworks are in tune with strategic priorities and government ambitions.

Oversee the implementation of the strategy

- Develop a set of performance indicators to monitor the implementation and assess the impact of the digital government strategy.

  Establish tools that can help structure and monitor ICT investments at the project level.

Strengthening international co-operation with other governments

As businesses, civil society organisations and other stakeholders increasingly operate and organize themselves across-borders, international co-operation has become more relevant than ever. As their constituents move around more frequently, governments are increasingly expected to deliver services across borders. Enhanced co-operation between governments can substantially improve service delivery, supporting economic activity and cultural exchange.

Since ICT skills and areas of expertise are not evenly distributed across countries, international peer-learning and knowledge sharing mechanisms have become more important as countries seek to leapfrog ahead and accelerate their maturity in the use of digital technologies in the public sector. Such mechanisms help bridge the gaps between more and less technologically advanced societies, share skills and resources. Moreover, they allow for the development of common standards that support the

comparability of data and practices to build evidence for more robust digital government policymaking and facilitate cross-border services.

Recommendation: Strengthen international co-operation with other governments

Develop and integrate international co-operation mechanisms and fora dedicated to digital government

- Develop knowledge sharing mechanisms with both regional and international partners.
- Develop enhanced co-operation agreements and mechanisms that foster cross-border digital services to support the sharing of resources, economic integration and cultural exchange.
- Study, develop and adhere to international legal instruments supporting the development of digital government, such as the OECD Recommendation on Digital Government.
- Assess the potential for developing common standards in the framework of enhanced regional co-operation.

Developing clear ICT business cases

The use of ICT business cases allows the public sector to optimize its investments, justify for its choices, determine expected benefits and follow up on their realization. Evidence from OECD countries shows that solid business cases are an instrumental factor for large ICT projects performance and success. The most digitally advanced governments of the OECD have established business case models of mandatory use above pre-determined budget thresholds.

These business cases allow governments to capture valuable project data, providing a framework for comparability of ICT investments, a better understanding of the drivers of project efficiency and success or failure. They also help ensure the alignment of the investment with broader public

sector strategies. The findings of this report reveal that countries in the MENA region seldom use business cases to structure their ICT investments (only the UAE systematically uses them). Moreover, only Jordan and Egypt report using budget thresholds to structure their ICT project governance.

Recommendation: Develop clear business cases

- Develop mandatory business cases for ICT projects above a certain budget threshold.
- Establish a unit responsible for ICT project oversight and operational co-ordination.

Reinforce institutional capabilities to manage and monitor the implementation of ICT projects

ICT projects have become more complex in terms of budget, technology options, stakeholders involved and expected benefits. In a context of budgetary constraints, OECD governments increasingly opt to establish standardised ICT project management models and centralized project review mechanisms. Such tools allow governments to have an overall view of ongoing projects and existing assets, prioritise efforts, avoid duplication and make strategic investment decisions. The absence of an equivalent tool in the MENA countries assessed considerably hinders to ensure returns on investments.

Moreover, governments of the MENA region lack adequate visibility of the ICT skillsets currently available in the public sector or the competencies needed to foster the digital transformation of the public sector. Without such understanding or data, they lack a strategic approach to attract, develop and retain the much needed human resources to deliver greater digital government performance.

Recommendation: Reinforce institutional capabilities to manage and monitor the implementation of ICT projects

- Develop standardised ICT project management models and requirements, making sure they support agile deployment of technology.
- Progressively develop tools that allow clear visibility of all digital government initiatives across government levels, and thus make decisions based on existing assets and projects.

  Identify skills gaps in government and develop a strategy to attract and progressively develop ICT-skills in the public sector.

Procuring digital technologies based on the assessment of existing assets

This principle of the OECD Recommendation underlines the need to procure digital technologies strategically, based on existing assets. It calls for governments to develop structured approaches to ICT procurement, while preserving governments' ability to benefit from new technological trends (including open source solutions) and deployment methods, including agile and iterative delivery.

Having a clearly defined strategy for procuring ICTs is key to ensure sound decisions in the acquisition of ICT systems and competitive prices for the public sector, which can leverage economies of scale and shared resources to enhance the efficiency of government ICT investments. Moreover, such a tool can help overcome the digital fragmentation of the public sector, supporting the procurement of compatible and interoperable IT solutions.

Among the six MENA countries assessed, only Tunisia reports having a strategy covering ICT procurement specifically. The general lack of a strategic approach for government ICT s\is further hindered by the absence of critical tools for ICT asset management and monitoring, such as a database of public ICT assets, projects, contracts and inter-agency agreements.

Recommendation: Procure digital technologies based on the assessment of existing assets

- Establish a unit or body in charge of ICT procurement policy in central government.
- Establish a central repository for all ICT contracts, inter-agency agreements and initiatives across the public sector.
- Develop a strategy and/or policy for ICT procurement based on existing assets.
- Foster policies that rationalise public ICT investments through the use of open source software and public software.

Ensuring that legal and regulatory frameworks allow digital opportunities to be seized

Legal and regulatory frameworks shape government interactions with its constituents as well as service delivery tools and mechanisms. These rules and norms may accelerate or hinder the digital transformation of the public sector. To ensure results, legal and regulatory framework must be consistent with the countries digital ambitions and objectives.

Structural enablers of digital government, such as legally recognised electronic identification and/or signature, are often absent or of limited use. Digital identification mechanisms allow citizens to provide legally binding digital compliance, and the public administration to accurately determine entitlements and obligations. Digital identification also enables better information management and exchange within the public sector, allowing for more tailored and friendly service delivery.

Given a more unequal digital context and the insufficient maturity in terms of digital government by public institutions reasonably translates in a less coercive approach when fostering the use of digital services. Digital services of mandatory use are scarce and generally restricted to higher degree applications, tax and trade declarations. Moreover, the recognition of certain digital rights, such as the *once only principle,* does not yet exist in the legal and regulatory framework of the countries assessed.

Recommendation: Ensure that legal and regulatory frameworks allow digital opportunities to be seized

- Establish key digital enablers for digital public services, including digital identification and legally binding online consent.
- Recognise the right to online communication with the administration under certain circumstances.
- Develop legal and regulatory frameworks that support ICT co-ordination across the public sector.
- Include the digital dimension in regulatory impact assessments.

References

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

OECD (2015b), *MENA-OECD Questionnaire on Digital Government* (unpublished dataset).

OECD (2014), *OECD Recommendation on Digital Government Strategies,* OECD, Paris, www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm.

World Bank (2016), *World Development Report 2016: Digital Dividends*, World Bank Group, Washington, DC, http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf.

World Bank (2014), *World Development Indicators (dataset)*, World Bank Group, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.

Chapter 1.

Background and methodological considerations

This chapter provides a general overview of the report, framing it under the work of the OECD in the MENA countries aimed to improve public governance in the Region, conducted as part of the MENA-OECD Governance Programme and in relation to the activities of the MENA-OECD Working Group II on Open and Innovative Government. This introductory section also assesses the broad set of policy challenges faced by governments in the Region and advances how digital technologies can help overcome them. Finally, it introduces the OECD Recommendation on Digital Government Strategies, the analytical framework of the report, and lays out the methodology used in the elaboration of the report.

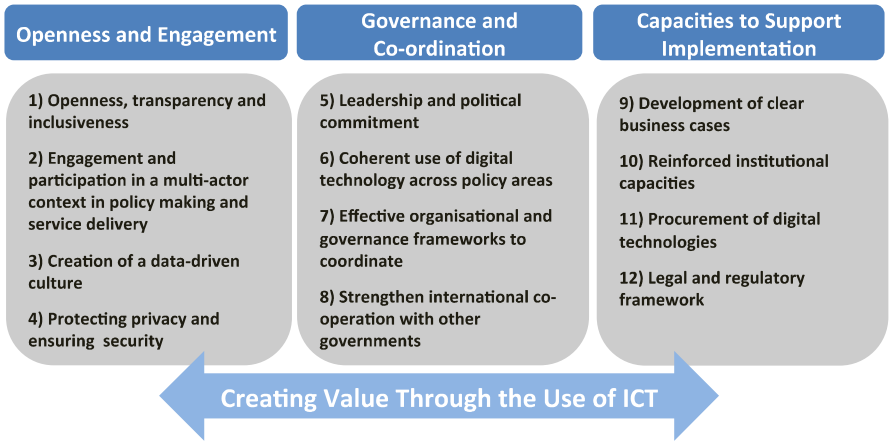
The MENA-OECD Working Group II on Open and Innovative Government provides a forum for collaboration and peer-learning in the areas of open government, digital government and public sector innovation. Operating since 2005, it is a regional Working Group in the framework of the MENA-OECD Governance Programme.

Governments are experimenting with new tools, ways of working and skillsets to address the challenges of fostering inclusive economic growth, social cohesion, rebuilding trust in government, and spurring effective public service delivery to all groups of society. This experimentation process makes peer-learning, policy advice and knowledge sharing particularly valuable. With this in mind, the MENA-OECD Working Group decided to produce a regional study that identifies trends, challenges and opportunities in the Middle East and North Africa (MENA) region, and provides policy recommendations based on the analysis of existing context and capacities. The recommendations support MENA countries in coming closer to OECD standards, in particular to those set by the OECD Recommendation on Digital Government Strategies (OECD, 2014).

This study seeks to benchmark the current digital government policies and initiatives of Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates, and uses as a reference the principles of the OECD Recommendation on Digital Government Strategies. It also seeks to identify good practices, challenges and opportunities for the use of new technologies for better public governance.

An OECD Recommendation is a legal instrument that is adopted by the OECD Council, which has representatives of all member countries. As such, its adoption is a formal commitment to implement its indications. The request of adherence to a Recommendation is open to any country and its acceptance is subject to the clearance of the Council. The Recommendation was adopted by the OECD Council on 15 July 2014 and it contains 12 principles structured around 3 pillars. Morocco and Egypt, both members of the MENA-OECD Working Group, have already adhered to the Recommendation.

Figure 1.1. **OECD Recommendation on Digital Government Strategies**

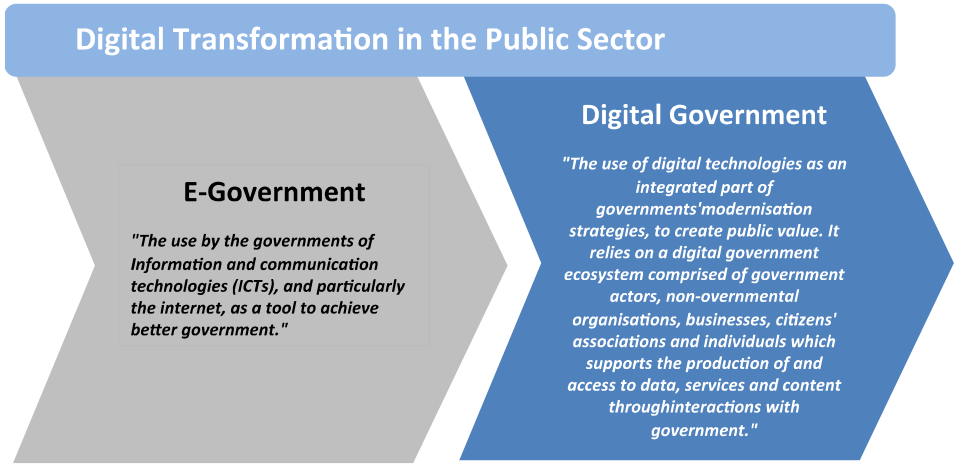


The OECD Recommendation of the Council on Digital Government Strategies

The 21st century has provided favourable conditions for the emergence of increasingly mobile, connected and informed individuals who have ever-increasing expectations of governments and public services. The new digital context allows governments to promote the development of a networked society and leverage digital technologies to improve organisational arrangements and public sector intelligence. This can support higher productivity, improve policy making and enhance service design and delivery. The strategic use of new technologies allows for greater public sector performance while creating more inclusive government operations and processes. This may lead to more inclusive outcomes and help maintain trust in public institutions.

The OECD Recommendation calls for a progressive and innovative approach to using technology that goes beyond the mere support of better public sector operations, to the full integration of digital technologies in shaping overarching strategies and agendas for public sector reform. It highlights the need for governments to reach new levels of maturity in the use of ICT: moving from e-Government to Digital Government.

Figure 1.2. **Digital transformation of the public sector: From e-Government to Digital Government**



Source: OECD elaboration based on OECD (2014), *Recommendation of the Council on Digital Government Strategies*, www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm, OECD, Paris.

This concept of Digital Government implies an important paradigm shift in how the use of technologies in the public sector is conceived and implemented. Earlier on in the e-Government movement, the use of ICT focused on improving the efficiency of specific operations and areas of work. However, OECD countries have since realised that, with the rapid progress of digital, mobile and cloud technologies, this approach fails to take advantage of the full potential of digital technologies. The new digital paradigm recognises the opportunity offered by new technologies to radically transform back-office operations in order to: improve public sector agility, enhance data management, and create more open and innovative societies that can drive social inclusiveness, and improve government accountability and effectiveness. All of these factors contribute to long-term inclusive and sustainable development.

In a context of rapidly changing social interactions and social dynamics, governments should be rethinking their role, scope of action and ways of working. Digital technologies should be seen as a crucial enabler of a networked society, and be embedded in public sector reform agendas as governments build new ways of interacting with citizens, businesses and other service users.

Reaching maturity in how the government uses digital technologies would support the governments that volunteered to participate in this study by addressing several of the outstanding governance issues of their countries. For example, adequate information and data management systems strengthen centre of government capacities to oversee, assess and steer government action, which supports broader public sector reform efforts and diverse policy areas and agendas. Low productivity levels substantially hinder efforts to sustainably raise living standards in the region. User-friendly and agile digital public services could substantially reduce the time required to create a company, file and pay taxes, obtain licenses, or apply for tax reductions, subsidies or other benefits. This would contribute to the creation of an enabling institutional framework that supports economic activity and reinforces productivity. For example, Estonia's X-Road, a data sharing platform for the public sector, led to Estonia implementing the "once only" principle, which simplified bureaucratic procedures and delivered integrated digital services.

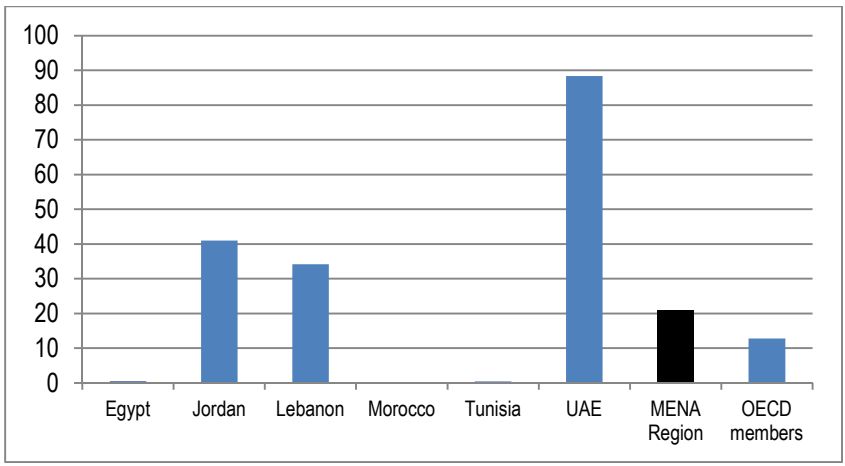
The MENA region has experienced dynamic population growth (1.99% annual growth rate) and is becoming increasingly urban, as are most parts of the world. Urban population growth for the region in 2014 was 2.47%, reaching 63.74% of the total population (World Bank, World Development Indicators, 2014). This growth already poses significant organisational challenges in large urban areas and exerts pressure on governments, which must look for new ways of providing access to basic services. Governments must also create the necessary conditions to promote economies of scale and the competitive entry into global value chains.

This population growth becomes more challenging when considering the unequal access to services and economic opportunities that exist across the region, particularly in rural areas. Not ensuring access to digital technologies is likely to lead to uneven development and missed opportunities in the form of productivity gains, economic growth and social inclusion. Ensuring access to and the use of ICT in rural areas is a necessary basis for favourable integration into today's globalised economy. It can also improve access to information and services. For example, E-Health services can enhance the access, quality and cost-effectiveness of specialised healthcare. However, they rely on innovative delivery models to include those who are illiterate or not digitally connected. Digital technologies can also foster financial inclusion, facilitate access to insurance, and provide valuable information, all of which improve the ability of individuals and businesses to make strategic decisions. The knowledge economy has drastically changed the economic landscape. The public sector has never held the monopoly on skills, ideas, data, information, creativity or innovative potential, which means that sound approaches to digital government provide opportunities to

leverage talent, data and capacities outside of the public sector to find innovative and collaborative ways of implementing policies and delivering services. This is in line with the demands of more informed and connected constituencies. ICT-enabled participation channels, alternative data-collection channels, and crowdsourcing activities, such as hackathons,[1] can help achieve these results.

Certain regional challenges are making countries more prone to economic uncertainty and political instability. These include: unequitable income distribution and access to public services, poor market conditions, falling commodity prices, insufficient private sector development and economic diversification, political unrest, massive migration flows and stocks (of different nature and unequally distributed across countries), and other forms of conflict. These challenges require governments to improve their data collection, sharing and processing capabilities in order to enhance public sector intelligence. New data collection and processing techniques, such as big data analytics or business intelligence,[2] can help governments use predictive analytics to spot trends, create knowledge and take strategic action to prevent or address upcoming challenges. Leveraging the potential of government data to transform the public sectors requires the establishment of a context in which a "big data"-prone mentality and environment is nurtured among civil servants through a set of policy decisions, capacity building efforts and provision of incentives.

Figure 1.3. **International migration stock as a percentage of the total population**



Source: Author's calculations based on United Nations (2015) Estimations on international migration stocks. Available at: www.un.org/en/development/desa/population/migration/data/estimates2/index.shtml.

There are growing concerns about the rapid erosion of trust in governments both across the MENA region and OECD countries. Some of the drivers of this phenomenon include: the perception of corruption and insufficient levels of transparency, the inability of governments to engage with citizens' in constructive dialogues, and stakeholders' feeling that their views are not reflected or taken into account in the public decision-making process. New technologies are strategic tools that support open government policies and can be used to foster more inclusive governance models, helping secure confidence in governments and respond to citizens' growing expectations.

Despite these opportunities, there are also risks and challenges regarding the use of ICT by the public sector. Poor governance of the use of technologies may lead to inefficient spending, duplication of efforts, and a lack of interoperability. Moreover, ICT projects have become increasingly complex in terms of budget size, actors involved and choice of technologies, which requires new and multidisciplinary sets of skills and tools. As governments move forward with their digital agendas, they will have to manage a number of risky and visible ICT projects. To do this successfully, governments will have to work on developing appropriate institutional capacities, legal and regulatory frameworks, and new ways of procuring technologies. Major security or privacy breaches or project failures will diminish trust in the government's ability to ensure an efficient, effective and secure digital transformation.[3]

The effective development of digital government in the MENA region should be the result of a creative process, and not come from importing foreign models. The countries being benchmarked in this study should benefit from the experiences of more technologically-advanced countries, such as OECD members, but they should not necessarily follow the same path towards digital transformation. Although countries of the region have the opportunity to learn from others' experiences to leapfrog stages, it is essential that they implement policies based on their realities, needs and priorities. Most importantly, they should keep up with rapidly evolving technologies as they provide new opportunities for working in more efficient and convenient ways than those used when OECD countries first started implementing digital government policies and practices.

Methodology of the report: Applying the OECD Recommendation to selected countries in the MENA Region

To develop this report, the OECD team organised a session with digital government representatives from Tunisia, Morocco and Lebanon to discuss their needs and ongoing digital government efforts. This session also served

to refine a survey that was used to collect data on existing digital government strategies and initiatives in the study countries. The data collection of this survey took place between the 23rd of October and the 3rd of December 2015. Delegates from Egypt, Jordan and the United Arab Emirates were not able to attend this session, but were engaged remotely in the data collection and fact checking processes.

The subsequent chapters are structured as follows: Chapter 2 briefly looks at the digital context of the MENA region, and more specifically the current situation of ICT use in Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates. Chapters 3-5 benchmark existing policies and strategies against the OECD Recommendation in order to assess alignment and provide policy recommendations. Chapter 3 analyses the use of digital technologies to open up government processes and create more participatory decision making. It benchmarks existing initiatives against the first pillar of the OECD Recommendation. Chapter 4 takes a closer look at existing governance structures to support the implementation of digital government strategies. Finally, Chapter 5 assesses existing institutional capacities in the field of digital government compared to OECD experience and good practices.

Notes

1. Hackathons: An event in which a large number of people meet to engage in collaborative computer programming.
2. Big data analytics: is the process of collecting, organising and analysing massive sets of data (called big data) to discover patterns and other useful information. Business intelligence (BI) can be described as "a set of techniques and tools for the acquisition and transformation of raw data into meaningful and useful information for business analysis purposes".
3. The digital transformation of government refers to the transformation of government operations, making them digital by design. This means overcoming the e-Government approach in which technologies have the role of supporting traditional methods, operations and processes. The digital transformation of governments requires the re-engineering of government processes and the revision of organisational arrangements.

References

OECD (2014), *OECD Recommendation on Digital Government Strategies,* OECD, Paris, www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm.

United Nations (2015), *Estimations on international migration stocks*, www.un.org/en/development/desa/population/migration/data/estimates2/index.shtml.

World Bank (2014), *World Development Indicators (dataset)*, World Bank Group, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.

Chapter 2.

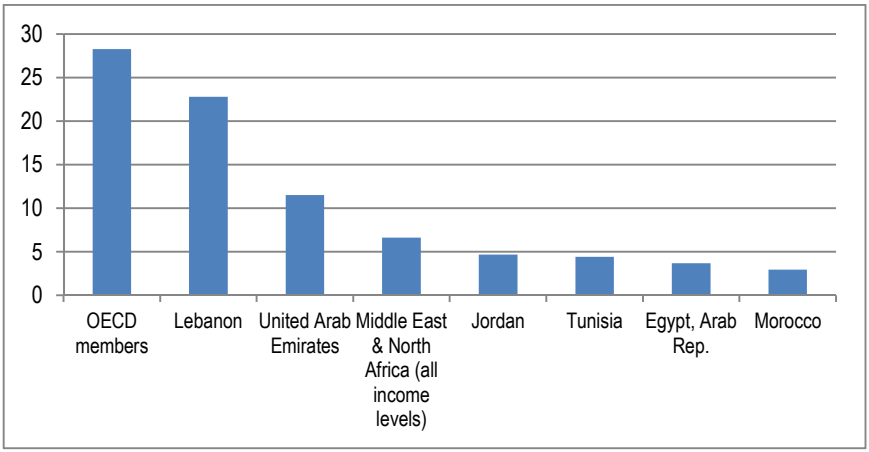
An overview of the digital context in the MENA region

This chapter describes the digital context of MENA countries in the region, assessing the structural enablers for digital government and the information society. It considers internet and mobile penetration rates, emerging social trends, such as social media uptake and use, and their implications for social interaction, digital engagement and service delivery. This chapter then presents the context of digital government strategies in the Region, considering the main challenges for their further development. Other characteristics of these strategies are considered, including levels of government concerned by the national strategy, their key objectives and the conditions enabling governments to reap the benefits of digital government.

Achieving the digital transformation is of strategic importance for countries of the Middle East and North Africa (MENA) region. A successful digital transformation requires key enablers to be in place to support the creation of a dynamic digital government ecosystem that can drive digitisation, cultural change, and innovation.

In order for the government to deliver digital public services, collect data and crowdsource ideas, the broader public must have access to information and communication technology (ICT). Creating a networked society requires governments to provide the necessary conditions for the development of ICT infrastructure, including a sound legal and regulatory framework and the establishment of a policy environment that supports optimal market conditions for the sustainable development of ICT infrastructure. These efforts should look at the supply of ICT services as well as the demand side, which can guarantee economic and social returns on investment.

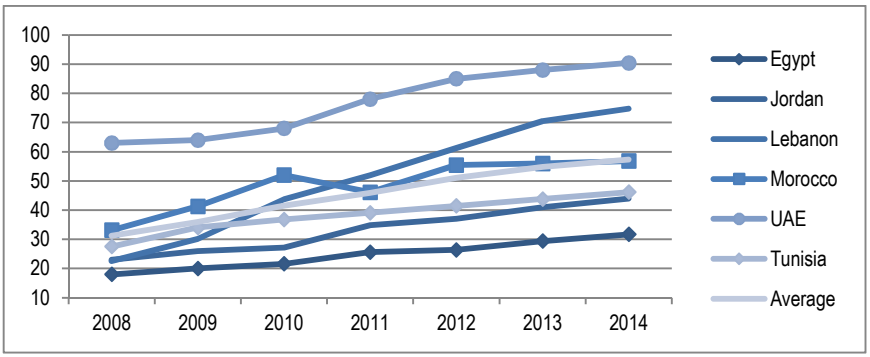
Figure 2.1. **Fixed broadband subscriptions (per 100 people)**



Source: World Bank (2014), *World Development Indicators (dataset)*, World Bank Group: Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.

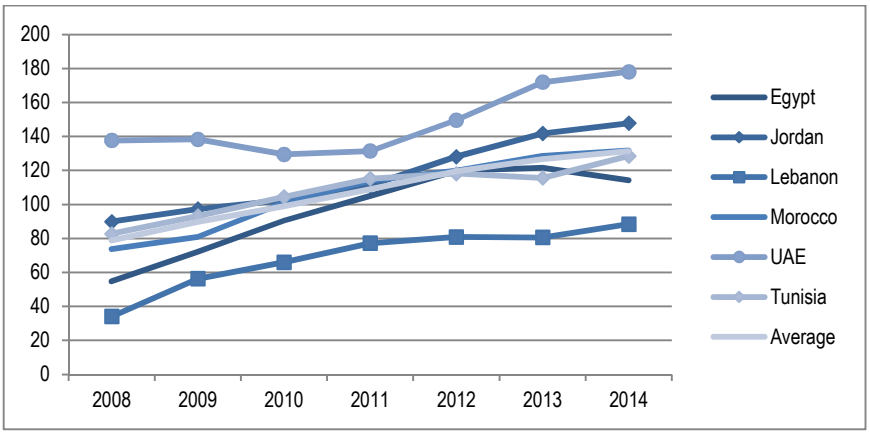
The data show that despite infrastructural limitations, access to internet and mobile technologies has consistently increased across the region. The United Arab Emirates (UAE) and Lebanon are clearly ahead in terms of the number of internet users, however, all MENA countries being benchmarked have a higher number of mobile subscriptions per capita than the OECD average (Figures 2.2 and 2.3).

Figure 2.2. **Internet users (per 100 people)**



Source: World Bank (2014), *World Development Indicators (dataset)*, World Bank Group, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.

Figure 2.3. **Mobile cellular subscriptions (per 100 people)**



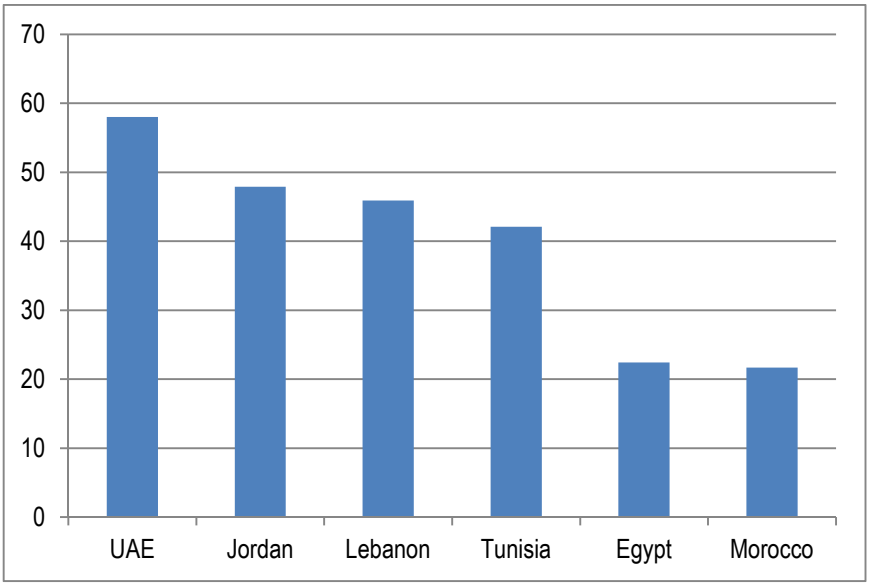
Source: World Bank (2014), *World Development Indicators (dataset)*, World Bank Group, Washington, DC, http://data.worldbank.org/data-catalog/world-development-indicators.

The trend of increasing mobile phone and internet use is relevant for the region's digital government efforts as it provides public authorities with new channels for outreach and data collection. This increased use should have an impact on digital government and service delivery strategies and put a strong focus on, for instance, m-Government (mobile public services). Moreover, it shows that citizens of the region are reaching new levels of

maturity in the use of ICT and taking decisive steps in the direction of a networked society. The levels of connectivity and ICT use in the UAE suggest that its society has reached advanced levels of maturity, even by OECD standards.

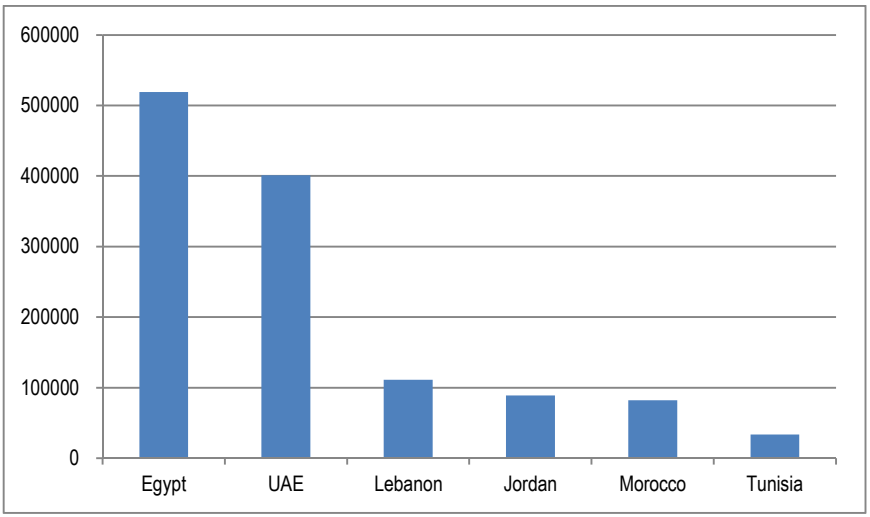
The 2014 Arab Social Media Report (Salem, F. et al., 2014) suggests that despite increasing interest and the use of social media in the Arab world, and the government's growing presence online, public institutions were still mainly using social media as a one-way channel, thus missing out on the opportunity to engage users and support service design and delivery. The report shows that in Arab countries, 55% of the population supports the use of social media for the co-design and delivery of services.

Figure 2.4. **Facebook penetration in selected MENA countries (in %)**



Source: Salem, F., R. Moutarde and S. Al-Shaer (2014), *Arab Social Media Report*, Mohammed Bin Rashid School of Government, Dubai, http://www.arabsocialmediareport.com/UserManagement/PDF/ASMR6_En_Final.pdf.

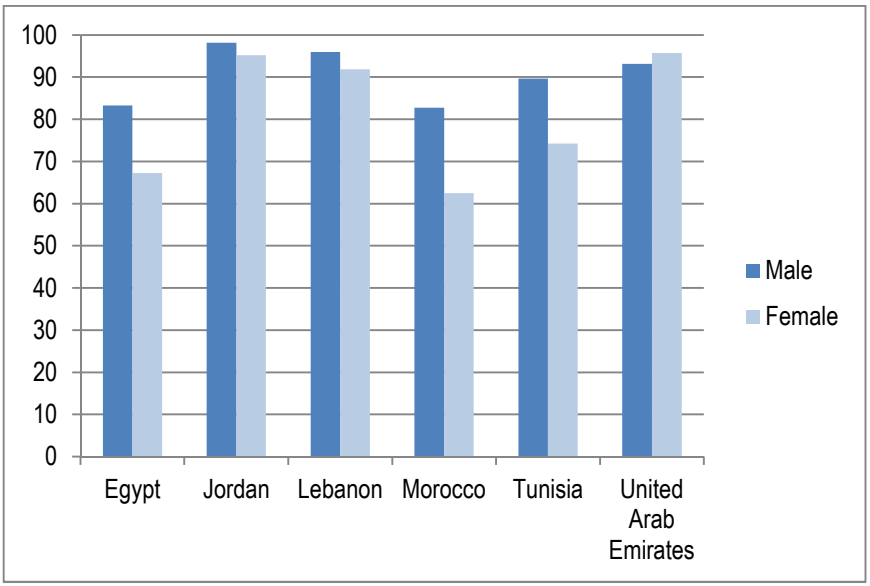
Figure 2.5. **Active Twitter users (total of population)**



Source: Salem, F., R. Moutarde and S. Al-Shaer (2014), *Arab Social Media Report*, Mohammed Bin Rashid School of Government, Dubai, http://www.arabsocialmediareport.com/UserManagement/PDF/ASMR6_En_Final.pdf.

Despite the progress made in terms of access to and use of ICT, there is more to do regarding the development of society's ICT and data skills and demand throughout MENA countries, as well as governmental use of digital technologies for better governance and improved public services. If the governments of MENA countries would like the opportunities of the knowledge economy to foster development, effective and stable institutions and high living standards for their constituencies, they should prioritise the development of policies that reduce illiteracy – a strong contributing factor to digital exclusion - and bridge digital divides. This would enable their citizens to acquire the skills and information required to seize new economic opportunities, move towards higher value added activities, and become more productive and more favourably integrated into the world economy.

Figure 2.6. **Adult literacy rates (15+)**



Source: UNESCO (2015), *Education dataset*, UNESCO, Paris, http://data.uis.unesco.org/Index.aspx?DataSetCode=EDULIT_DS&popupcustomise=true&lang=en#.

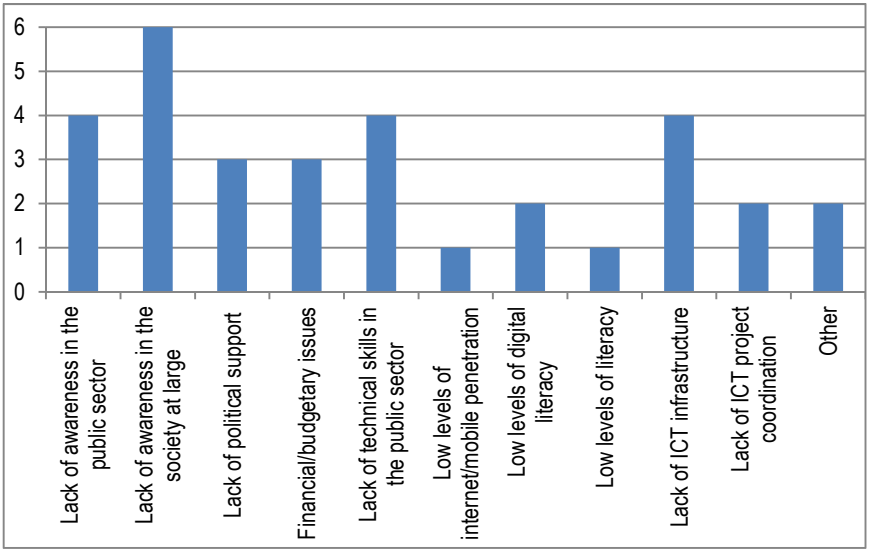
Steering the digital transformation, which will lead to important changes in the organisation and division of work, is challenging and, to some extent, capital intensive. Achieving the transformation would require a structured approach that is framed by the political and institutional stability to allow for the implementation of medium to long-term development plans. A slowdown in international economic growth, demographic pressures, high unemployment, insufficiently developed financial markets, large migratory movements and political conflicts throughout the region may further strain public finances, which would contribute to political instability and deter required private investment and infrastructure development.

Government officials consistently identified the main barrier to the implementation of national digital government strategies as a lack of awareness of the relevance of digital government in the public sector and society at large (MENA-OECD Questionnaire on digital government strategies). Securing political and public support for the digital transformation agenda is a critical factor of success. This may be challenging in a context where political leaders and senior civil servants are often insufficiently familiar with digital technologies, and unable to appropriately assess their strategic value and potential for making the public

sector more efficient and effective. The lack of awareness in the broader society is an additional challenge to creating the necessary political incentives to drive change.

Figure 2.7. **Main challenges for implementing digital government strategies**

Number of countries among those benchmarked



Notes: Egypt, Jordan, Lebanon, Morocco, Tunisia and the UAE completed the questionnaire. One questionnaire per country. More than one choice possible.

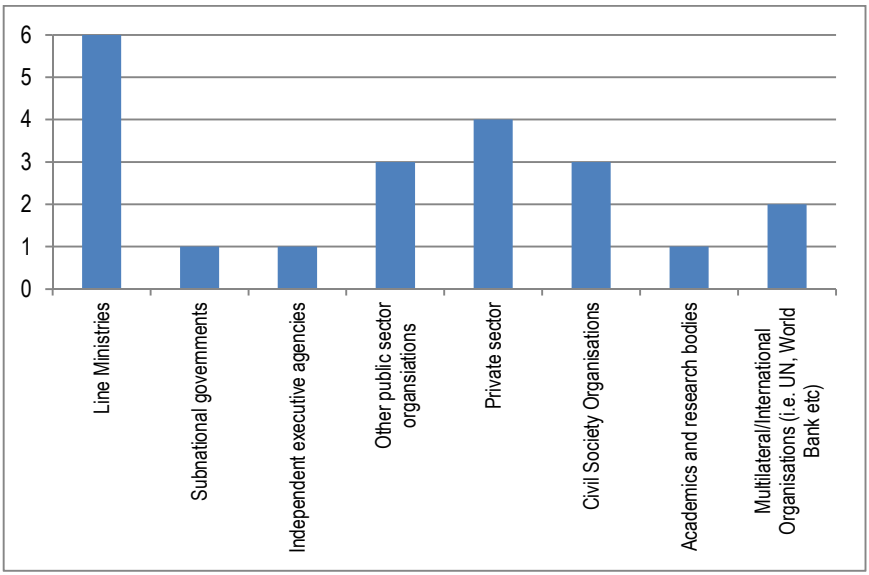
Source: OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

The experience in OECD countries has shown that the development of the national digital government strategy provides an ideal opportunity for engaging all relevant stakeholders in jointly developing and embedding a shared vision for the use of ICT to improve societal well-being and the role of digital technologies in a modern public sector. Ensuring that the views of different stakeholders are taken into account and represented in the national strategy allows the government to build a strong social consensus and a sense of ownership, commitment and support for the digital transformation agenda. The effective implementation of the national digital agenda should be viewed as a horizontal, cross-cutting, multi-sector endeavour that requires digitisation to be seen as an integral part of all public sector reform strategies. Figure 2.8 shows the actors involved in the development of digital government strategies in MENA countries. It shows how academia,

civil society and some relevant actors of the public sector, most notably subnational governments, have not been sufficiently involved in the elaboration of the strategy.

Figure 2.8. **Stakeholders involved or consulted in the development of the digital government strategy**

Number of countries among those benchmarked



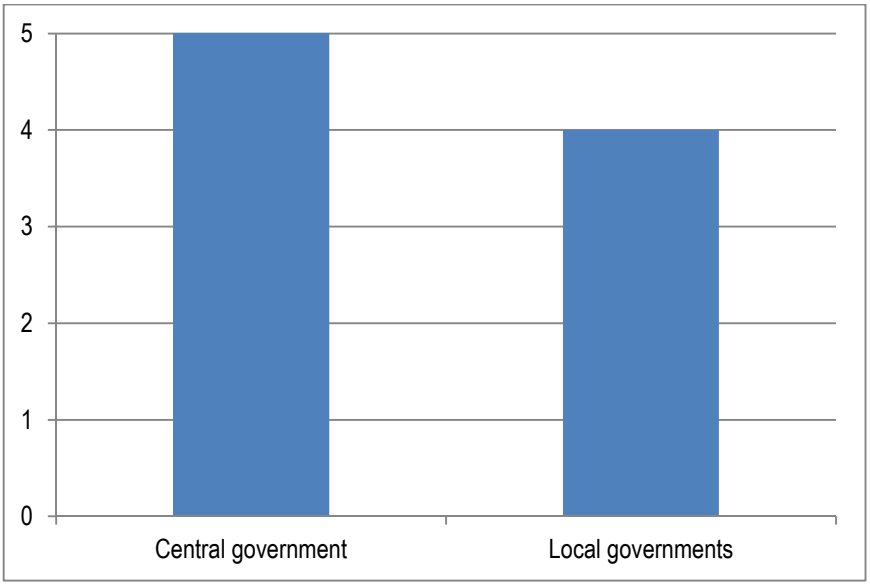
Note: One questionnaire per country.

Source: OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

The process and mechanisms used for the development of the digital government strategy determine the scope and levels of government that are concerned. They also identify strategic priorities that will guide government action, and the enforcement mechanisms that may be coercive or consensual, or a mix of both. They provide the opportunity to make the strategy an active tool of governance by fixing specific objectives and activities that can be monitored and evaluated, and help mobilise governments' energies and resources.

Figure 2.9. **Digital government strategies may apply to different levels of government**

Number of countries among those benchmarked



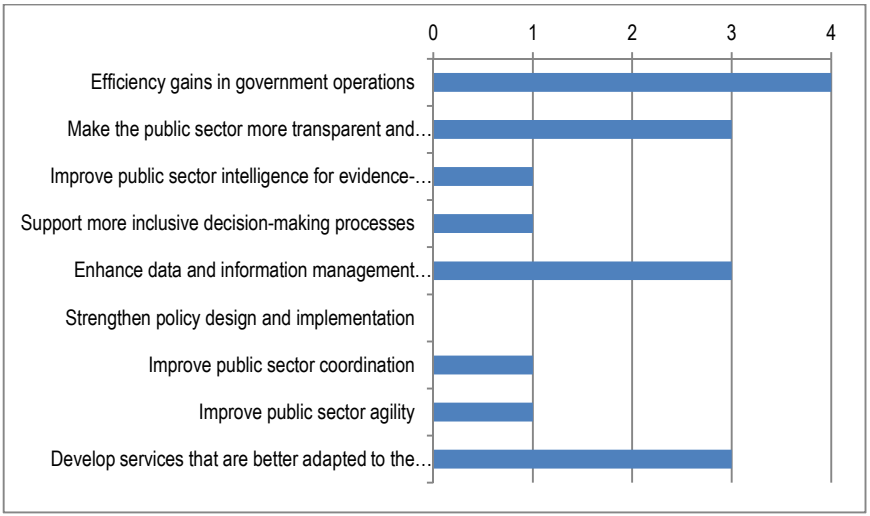
Note: One questionnaire per country.

Source: OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

An analysis of the main strategic objectives of the digital government agendas of the countries being benchmarked shows that policies are mainly pursued to make the public sector more efficient, improve transparency and accountability, and develop more adapted services. However, other important aspects of digital government are not yet being explored, such as improved data management, the support of decision making, and the creation of more participatory forms of governance.

Figure 2.10. **Main goals of digital government strategies in selected MENA countries**

Number of countries among those benchmarked

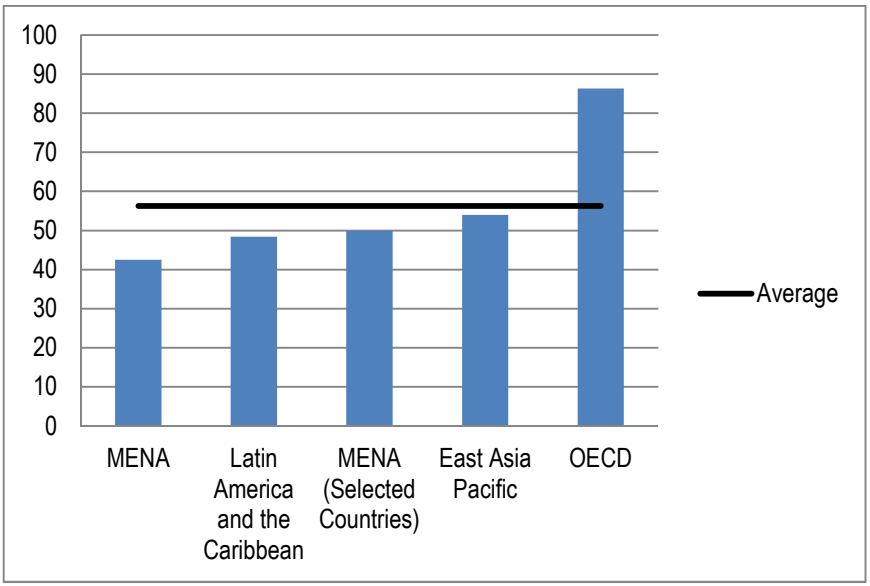


Note: Up to three choices were allowed.

Source: OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Governments must revise legal and regulatory frameworks to allow citizens, businesses, non-governmental organisations (NGOs), academia and governments to seize the opportunities of digitisation, thus enabling the digital transformation. These frameworks should promote the rational development of ICT industries and the delivery of digital services supported by enablers such as digital signature and e-ID (digital identification mechanisms allowing citizens to provide legal consent and access services and entitlements digitally). There should also be legal recognition and the regulation of online transactions. The average score of benchmarked countries in terms of regulatory quality, as measured by the World Bank's World Governance Indicators, is significantly below the OECD average, which highlights room for improvement. However, the score is above the average of the Latin America and Carribean (LAC) region, and slightly below the East Asia Pacific region. Nevertheless, the score of benchmarked countries hides the uneven reality of regulatory frameworks across the region, with Egypt scoring as low as 25 and the UAE scoring a high of 80.29.[1] The other countries are within a closer range, scoring between 40.87 and 54.8 points.

Figure 2.11. **Perceived regulatory quality**



Notes: Selected MENA countries include: Egypt, Jordan, Lebanon, Morocco, Tunisia and the UAE. The regulatory quality indicator captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Percentile ranks indicate the country's rank among all countries covered by the aggregate indicator, with 0 corresponding to the lowest rank and 100 to the highest.

Source: World Bank (2015), *World Governance Indicators (dataset)*, World Bank Group, Washington DC, http://data.worldbank.org/data-catalog/worldwide-governance-indicators.

The countries that have volunteered for this benchmarking exercise face significant challenges in terms of equitable access to ICT and education, which poses risks and limitations for economic growth and digital government initiatives. While trends are going in the right direction, governments have a key role to play in ensuring a swift transition to the digital economy, avoiding missed opportunities, and increasing productivity gaps in relation to more technologically-advanced countries. Governments must also complete their own digital transformation through redesigning government services and operations to improve public sector performance. Moreover, governments of the region should pay special attention to the development of mobile public services (m-Government), which would allow them to provide more inclusive services.

A lack of awareness of the relevance of the digital agenda, and digital government more specifically, has translated into a lack of political support for digital government strategies, which has led to limited implementation and results.

It is encouraging that the focus of digital government strategies in the region has progressively expanded, shifting from an exclusively internal focus on efficiency gains to a more outward-looking approach. Governments are also trying to use technology to become more transparent and accountable, and to improve service design and delivery. However, they are still not sufficiently looking into the possibility of improving data management and processing capacities to enhance public sector intelligence or develop more participatory forms of governance. The inclusion of digital government in the open government efforts of some of the study countries provides an opportunity to strengthen the use of ICT for participatory governance.

Notes

1 . The measure seeks to capture the perception of the ability of government to design and implement policies and regulations that foster private sector development. A higher score refers to a higher perception of the government's ability to achieve this objective.

References

OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Salem, F., R. Moutarde and S. Al-Shaer (2014), *Arab Social Media Report*, Mohammed Bin Rashid School of Government, Dubai, http://www.arabsocialmediareport.com/UserManagement/PDF/ASMR6_En_Final.pdf.

UNESCO (2015) Eduction dataset, UNESCO, Paris. Data set available at: http://data.uis.unesco.org/Index.aspx?DataSetCode=EDULIT_DS&popupcustomise=true&lang=en#.

United Nations (2015) Estimations on international migration stocks. Available at, www.un.org/en/development/desa/population/migration/data/estimates2/index.shtml.

World Bank (2014), *World Development Indicators (dataset)*, World Bank Group, Washington DC, http://data.worldbank.org/data-catalog/world-development-indicators.

Chapter 3.

Using digital technologies to bring governments closer to citizens and businesses

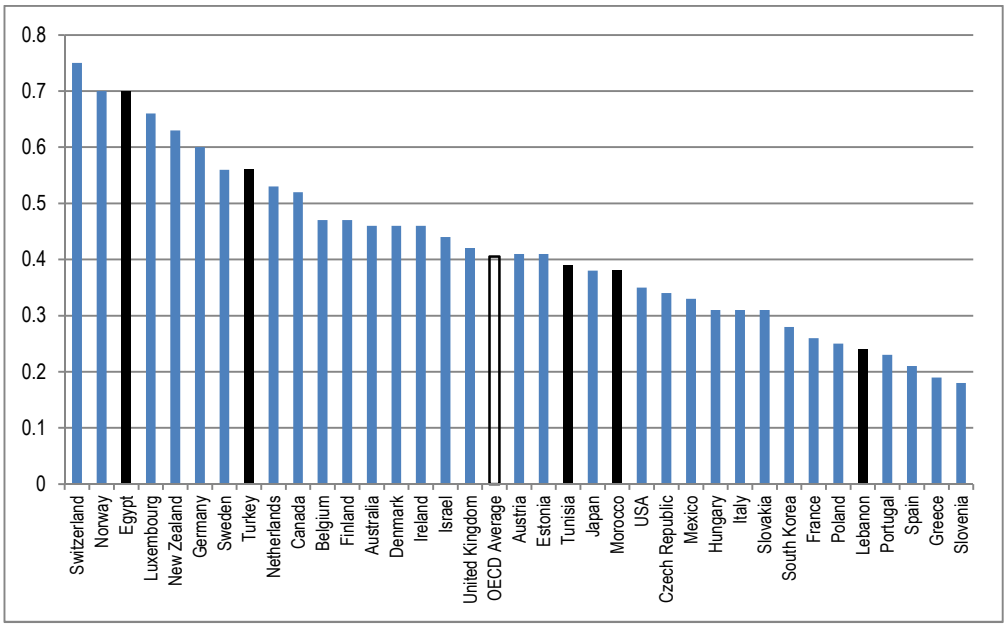
This chapter highlights how the countries assessed in this report are currently using digital technologies to foster transparency and inclusiveness, digital engagement and participation, and to manage data as a strategic asset to improve decision-making. The chapter provides a general assessment for current efforts in these areas of work and identifies outstanding challenges and shortcomings. It stresses the need for sound approaches to ensure personal data protection and the cybersecurity of public sector systems and data. Finally, this chapter taps into OECD experiences and good practices to advance specific policy recommendations to enhance the use of technology in the public sector to support openness and engagement and ultimately strengthen trust in the public sector.

This document, as well as any [statistical] data and map included herein, are without prejudice to the status of, or sovereignty over, any territory to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

The need to regain and strengthen public trust, which can be seen in an increasing number of countries, may be partly explained by the perception of inadequate levels of transparency; accountability; performance; openness; and the capacity to engage citizens, businesses and other relevant stakeholders.

Figure 3.1. **Confidence in national governments (2014)**



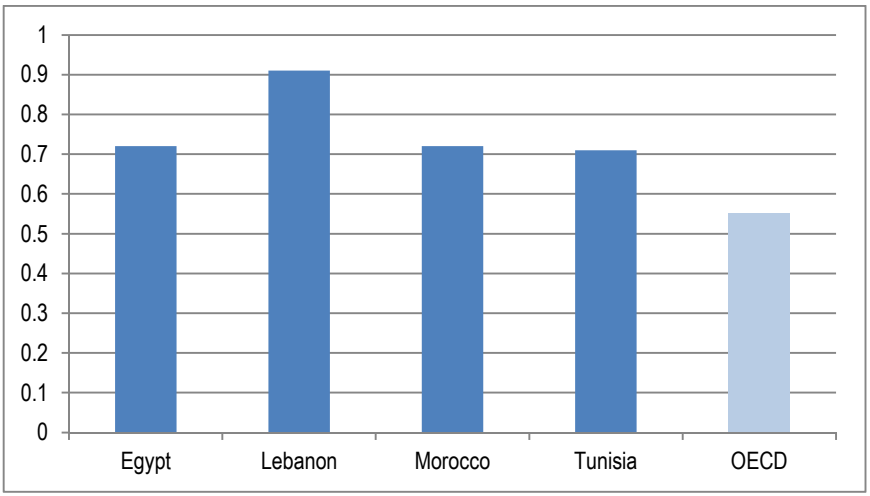
Note: Data for Morocco is for 2013. Data for Jordan is not available.

Source: Gallup (2014), *Gallup World Poll*, Gallup, Washington DC, www.gallup.com/services/170945/world-poll.aspx.

The high perception of corruption in government represents a significant risk that may lead to a loss of trust.

The emergence of new forms of technology-enabled interactions, such as social media, mobile applications and open government data, is providing governments with the opportunity to establish more direct and dynamic relations with citizens and business. This allows governments to adequately respond to citizen's expectations in terms of service delivery and policy making, thus promoting trust and a new perception of the administration.

Figure 3.2. **Perception of corruption in government, 2014**



Source: Gallup (2014), *Gallup World Poll*, Gallup, Washington DC, www.gallup.com/services/170945/world-poll.aspx.

The emergence of new forms of technology-enabled interactions, such as social media, mobile applications and open government data, is providing governments with the opportunity to establish more direct and dynamic relations with citizens and business. This allows governments to adequately respond to citizen's expectations in terms of service delivery and policy making, thus promoting trust and a new perception of the administration.

As citizens become more connected and informed, their demand for public engagement and consultation increases. This is a great opportunity to strengthen democratic governance, create more inclusive decision-making processes and government operations, and leverage data, information and knowledge from the broader society to deliver public value. Crowdsourcing, informed consultation and participation in decision-making processes can lead to new methods of collaboration, joint solutions, and services that are better adapted to user's needs. They can also lead to more inclusive outcomes.

However, these forms of participation and engagement require adequate and functioning freedom of information laws and the necessary implementing structures, the existence of guidelines to govern consultation with civil society and appropriately trained civil servants, a shared understanding of how to conduct an inclusive dialogue, and capacity in civil society to play its role. Furthermore, governments need to take measures to

address the technical challenges of digitally-enabled public participation and engagement, such as the digital divide and other forms of digital exclusion that may reinforce inequality in the economy and the political process. Decisive efforts should be made to tackle low levels of literacy and digital literacy.

Governments must take the engagement process seriously and follow through the whole process, from allowing citizens to provide their input, to providing feedback on the use of their input, to implementation. Online suggestion and complaint portals will be seen as ineffective by citizens if governments do not react to the input received, discouraging their use and negatively affecting trust in public institutions.

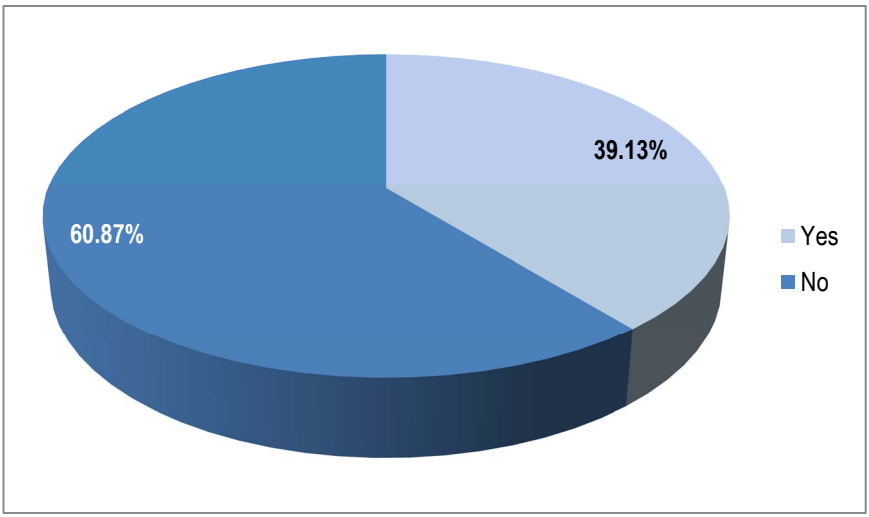
Governments should ensure the security and management of data and information, otherwise citizens and businesses are unlikely to interact with government through online channels, which can lead to low take-up of digital services and limit the benefits of digital government. Sound investment in ensuring the security and privacy of systems may be costly, but it is crucial as the risk of breaches may considerably diminish public trust and seriously damage a government's reputation. As governments provide more online services and develop open government data agendas, they must be particularly careful with the data they manage and share with non-institutional actors. For instance, health sector data can help innovate in the area of health service delivery and support public health research. However, insufficiently anonymised data can allow individuals to identify patients, leading to a privacy violation.

Principle 1: Ensure greater transparency, openness and inclusiveness of government processes and operations

The strategic use of information and communication technology (ICT) in the public sector can support openness, transparency and inclusiveness, eventually leading to greater trust in government. The first principle of the OECD Recommendation acknowledges this opportunity and the changing expectations of digital citizens, and seeks to support good governance by promoting the use of digital channels to open up government processes and operations and activate cost-efficient mechanisms for public engagement. By enhancing citizen and social control, the implementation of this principle can lead to better public sector performance and quality improvement in public services and policies, with the ultimate objective of achieving social well-being and value creation. In order to achieve this, governments across the OECD, as well as members of the Open Government Partnership,[1] are revising their freedom of information laws (FOIs) to include open standards,

and are reinforcing public records management systems that provide a stronger basis for accountability.

Figure 3.3. **Transparency and access to information laws that foresee an "open by default" standard for government data**



Note: Answered by 31 OECD countries, plus Colombia and Latvia.

Source: OECD (2014), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519.

Countries in the Middle East and North Africa (MENA) region still have, on average, room for improvement in terms of transparency and access to information laws and practices. However, this challenge does not affect all countries equally: some have access to information as a right guaranteed by their constitution, or have adopted an access to information law; while others are in the process of drafting a law. Building a culture of transparency and openness and effectively implementing the law remains a challenge and implementation gaps are significant and persistent. Governments are realising that only by collaborating with citizens and civil society organisations will they be able to rapidly improve in these domains, as their constituents expect.

Table 3.1. **Access to Information**

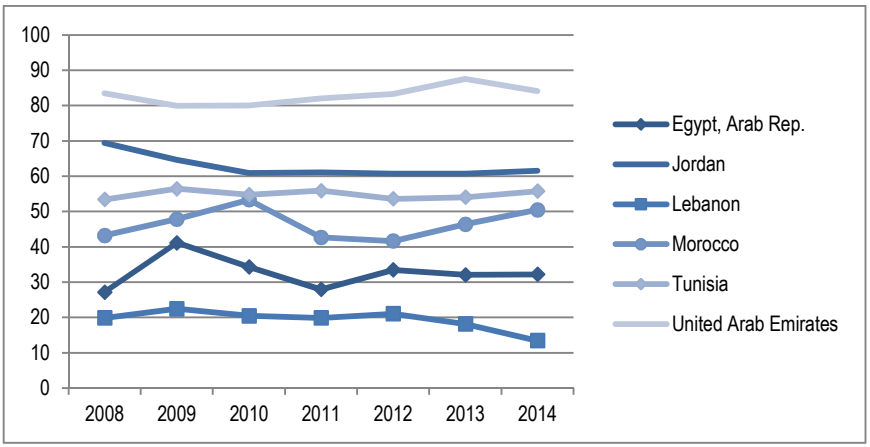
Access to Information provision	Country
Access to Information Law	Jordan, Tunisia
Draft Access to Information Law	Egypt, Lebanon, Morocco
No Access to Information Law	United Arab Emirates

Despite the growing momentum in favour of access to information, these frameworks and draft laws must still be reviewed to incorporate the evolutions of digital technologies and the open data movement. As in most OECD countries, the lack of "open by default" standards is hindering current efforts in the selected governments of the MENA region[2] to strengthen public sector accountability, empower citizens, foster transparency, and create bridges with civil society. The lack of awareness in the public sector and broader society of the importance of delivering data in open formats also limits the impact of open government data policy. Establishing "open by default" standards, complemented by appropriate legal control, can help bring down cultural barriers and improve access to information and data by the private sector, civil society organisations and academia, which would enhance social control of government activities and deliver data in open formats. Such a radical change calls for political leadership and support that is underpinned by a carefully conceived theory of change, the revision of existing incentives for civil servants to support open data, and the progressive construction of a social consensus around the value of opening up data and government process to external scrutiny.

In parallel with the development of appropriate policies, laws and practices, MENA countries will have to drastically increase the availability of data skills to harness the potential of open government data for transparency. Governments should take steps to make data accessible to those lacking the necessary skills to perform complex analysis. For instance, some countries have developed easy to use data visualisation tools and infographics that they have embedded in their open data portals and disseminated through social media and traditional communication channels (e.g. newspapers and television), helping individuals to better understand the content of datasets available in open formats.

In addition, the use of ICT can support internal, external and social control of government operations by improving transparency and accountability, as virtually all interactions with digital devices leave a digital trace that can be tracked, monitored and assessed to help establish and strengthen the accountability of government actions.

Figure 3.4. **Control of corruption (2008-2014)**



Source: World Bank (2015), *World Governance Indicators (dataset)*, World Bank Group, Washington DC, http://data.worldbank.org/data-catalog/worldwide-governance-indicators.

Box 3.1. **Opening up government data in Morocco and Tunisia**

Morocco: The Government of Morocco showed early interest in open government data and launched its national portal (http://data.gov.ma) in May 2011. It was one of the first countries in the region to join the open data movement as part of its broader reform process towards the creation of an open government. The technical sophistication and usability of the portal suggest an awareness of the potential of open data to engage with civil society and businesses to create good governance, as well as the social and economic value. Available datasets cover a wide range of subjects, including: health, finance, education, employment, geo-data, and tourism. However, after five years the number of available datasets is still limited to 110, which suggests a lack of ownership across public institutions for the open data agenda and insufficient understanding of its relevance for public value creation. Similarly, low levels of re-use diminish the social impact of the initiative. To address these issues, the legal framework is being revised to include the mandatory provision of data in open formats. The government, supported by the open data community, has started to promote data re-use, supporting the organisation of hackathons that seek to create value through the re-use of datasets readily available in the national portal. Open government data is also one of the reform pillars that the Moroccan government wants to include in its action plan to join the Open Government Partnership (OGP).

Box 3.1. **Opening up government data in Morocco and Tunisia**
(continued)

Tunisia: Tunisia set up its regulatory framework in 2011 (through the adoption of a law providing access to administrative documents) and launched its national open government data portal http://data.gov.tn/fr, which provides easy access to datasets in a wide variety of subjects. The e-Government Unit in the Prime Minister's Office ensures the monitoring of open government data, and follows up on implementation by central government. The national open government data portal is complemented by open data portals of various sectorial ministries.

These include the portal of the Ministry of Interior (http://opendata.interieur.gov.tn/fr/), the Open Budget Portal, Mizaniatouna, (www.mizaniatouna.gov.tn/), and the Ministry of Industry, Energy and Mines (http://data.industrie.gov.tn/). Finally, the National Institute of Statistics elaborates statistics on a wide variety of subjects and policy areas. Tunisia's first OGP Action Plan includes a commitment to updating the national open data portal to ensure alignment with international standards. While progressively working on building a dynamic open government data ecosystem, persisting challenges include ensuring ownership of the open government data agenda and re-use by non-institutional actors.

Sources: OECD (2015a), *Open Government in Morocco*, OECD Public Governance Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264226685-en; OECD (2016), *Open Government in Tunisia*, OECD Public Governance Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264227118-en.

In order to effectively use ICTs to promote transparency and openness, governments must contribute to the creation of digitally inclusive environments by addressing existing digital divides and other forms of digital exclusion. In line with this principle, governments should increase ICT use among disadvantaged groups by designing targeted interventions to improve access to ICT, improve digital literacy in society, raise awareness of existing online opportunities, and improve the comfort and familiarity all age groups with using ICT to interact with government. These strategies should also be gender sensitive and understand the different contexts in which men and women operate. Adapted digital services should be developed that avoid negative effects, such as reinforcing existing inequalities, and uneven access to information, services, economic opportunities and other resources. Some of the existing initiatives to reduce digital divides in the MENA region include the establishment of kiosks in rural areas, and the collaboration of the private sector and the post office to improve access to ICT and promote digital literacy (Egypt), as well as

government funded training and awareness campaigns (Jordan). In order to make these initiatives effective, they must be coherently designed and integrated with other social policies, creating affordable access points and incentives for developing digital skills.

Governments of the region are working on simplifying access to online services through the development of one-stop-shops for digital services, or centrally available lists that define all services provided by the public sector. Creating simple organisational hubs for digital government services, combining them in a few (rather than many) portals, simplifies users' overview of and access to services (OECD, 2009). However, fully developing such an approach requires governments of the region to achieve significant levels of interoperability of public sector information systems and, at times, cross-organisational service solutions.

Box 3.2. **Simplifying access to services in Portugal: Citizen Spots**

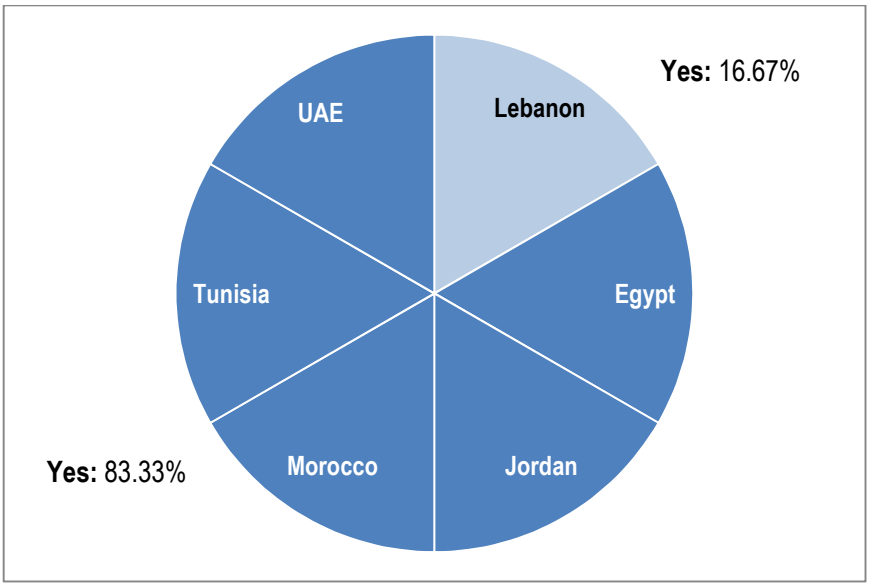
The Citizens Spot is a natural evolution of existing services provided by the Agency of Administrative Modernisation (AMA), such as multi-service working position or desk ("Balcão Multi-Serviços", or "BMS"). The BMS was a service counter that delivered services provided by different public administration bodies at the same physical place, by the same employee.

The "Citizen Spot" ("Espaço do Cidadão") is a single service desk with a specialised attendant who is capable of delivering to any citizen a large number of services related to both the public administration and the private sector. The delivered services are those already available on various websites, but that citizens may not feel capable or comfortable with using directly, and alone. The "Citizen Spot" is therefore a shared service among the entities that provide online services and its specialised attendant acts as a "citizenship mediator" between the citizen and the required online service, providing assistance about what exists and how to use it.

This new service combines assisted online digital services with onsite help, and involves the participation of a wide range of partner organisations in the network's creation and management.

Source: OECD (2015b), "Citizens Spots", *OECD Observatory of Public Sector Innovation*, OECD, Paris, www.oecd.org/governance/observatory-public-sector-innovation/innovations/page/citizensspots.htm.

Figure 3.5. **Countries with a centrally available list (e.g. database, repository or framework) defining all services provided by the public sector**



Source: OECD (2015c) MENA-OECD Questionnaire on digital government (*unpublished dataset*).

With the development and diversification of channels that support service delivery, governments are looking to ensure access to as many users as possible through a multi-channel strategy that allows citizens to choose their preferred way of accessing information and public services. Such a strategy should ensure the coherence of service quality, procedures and information across delivery channels, while providing incentives for the progressive development of the required ICT skills across society.

The OECD recommends that digital government strategies support the creation of more open, transparent and inclusive governments. To achieve this, countries of the MENA region should put in place legal and regulatory frameworks that pave the way for more open and inclusive societies. These should recognise the rights of citizens to access information. Moving towards more open and collaborative governments, public authorities should actively promote the opening up of government data and its re-use by citizens. In the MENA region, this will require active policies and initiatives to develop ICT and data skills across society, and the breaking down of cultural barriers in highly centralised and hierarchical public administrations. Effectively using technologies to build an open, transparent

and inclusive government will only be possible with the creation of a digitally inclusive society. Governments should design and implement programmes to tackle existing forms of digital divide, while avoiding the emergence of new forms of digital exclusion.

Policy recommendations

Setting up key enablers:

- **Build a digitally inclusive society through collaboration with non-institutional actors**. These efforts should address bottlenecks both on demand and supply sides by developing ICT skills. Linking ICT-skills development to broader social policies is also critical to fostering inclusiveness. Policies should aim to create market conditions that support ICT infrastructure development (e.g. regulations, competition, access to finance and stimulating demand).
- **Develop a multi-channel service delivery strategy for public services, maximising their outreach capacity**.

Develop the appropriate policy framework:

- **Develop a digital government strategy and action plan that helps prioritise actions and channel resources and efforts in favour of the digital transformation of the public sector**. This strategy should also reflect the views of relevant stakeholders to ensure ownership and support for the digital government agenda.
- **Revise legal and regulatory frameworks to guarantee access to and transparency of government processes, operations, information and data supported by digital technologies**. These revisions should include the establishment of an "open by default" standard regarding government data, with the necessary exceptions to protect privacy and other types of sensitive information.
- **Ensure easy access to information and data for citizens of varying levels of skill and education**. The development of simple and usable visualisation tools supports the interpretation of open government data by citizens with limited data skills, making government more transparent. The use of various channels, such as social media, enhances opportunities for reaching a wider audience.

Harness support for, and ownership of, the agenda to drive implementation:

- **Develop a communication strategy to help stakeholders understand the importance of open government**. Stakeholders within and outside of government should be helped to understand the importance of open, transparent and inclusive government processes and operations, and the potential benefits of opening government data. Business cases and evidence of impact are essential in persuading stakeholders.
- **Assess and restructure existing incentives in the public sector and broader society to support the development of an open culture**. This culture favours collaboration, public participation and engagement. To achieve this, governments should revise their legal and regulatory frameworks and create positive incentives to help bring down cultural barriers in hierarchical and centralised administrative cultures.

Principle 2: Encourage engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery

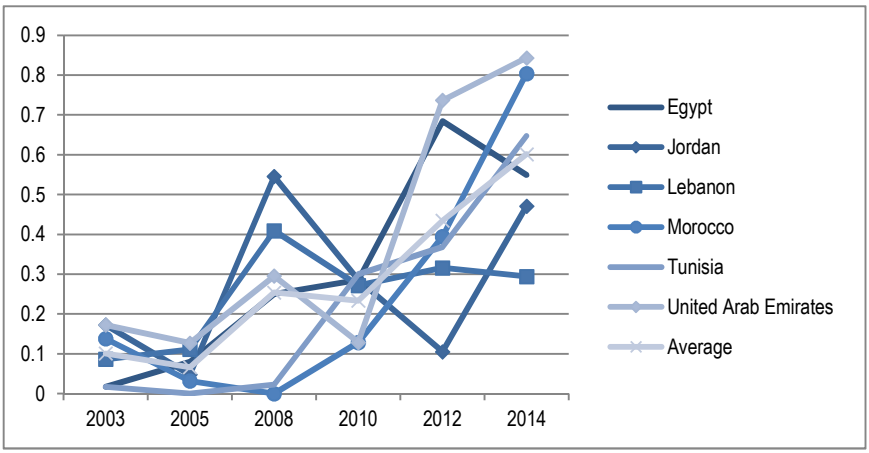
As recent financial, social, political, security and natural crises have shown, governments increasingly face situations and conflicts that they cannot deal with alone, as public authorities often lack the data, information, capacity or power to address such complex issues. Additionally, public institutions often face difficult trade-offs, for instance, responding to citizen demands for better public services despite tight budgets. These challenges have led to governments pursuing closer and more creative forms of collaboration with other governments and non-institutional actors in an effort find solutions. Participation supports citizen empowerment and can favour the redressing of inequitable distribution of resources and power that underlies inequality, poverty and social distress. Participation can also enhance the legitimacy of decisions and policy choices taken.

The strategic use of digital technologies can substantially contribute to the creation of more inclusive forms of governance and decision making. Moreover, the full implementation of Principle 2 would allow governments to better understand citizens' evolving needs; crowdsource information, ideas and resources held outside of the public sector; and help public authorities shift towards a citizen-driven approach to service delivery and, to some extent, governance and decision making. However, despite reaching new levels of maturity in the use of ICT by the public sector, including

sustained progress in the quality of digital public services, the studied countries still have areas for continued development in the creation of an open culture that is characterised by social dialogue and stakeholder engagement and participation.

The governments analysed in this report have acknowledged the challenges they face and have started to implement important ICT-enabled initiatives to improve government-society dialogue. Such efforts have led to the consistent progress of selected countries in the United Nation's (UN) e-Participation Index (Figure 2.6). However, to fully reap the benefit of such efforts for building more open and inclusive governance, governments must streamline these efforts to make them sustainable and coherent, ensuring a whole-of-government approach.

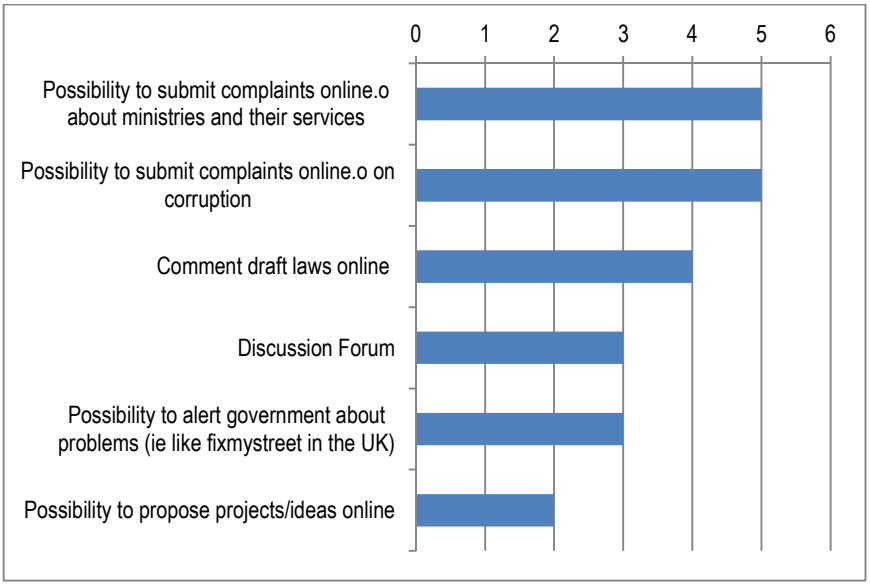
Figure 3.6. **UN e-Participation Index**



Source: United Nations (2014), *UN e-Government Index*, United Nations, New York, https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2014.

All countries that responded to the MENA-OECD Questionnaire on digital government (2015c) reported the use of digital technologies for citizen engagement. Through a wide variety of platforms, countries of the region allow citizens to comment on draft laws online, submit complaints, report corruption or bribery, alert about problems, or report ideas.

Figure 3.7. **ICT-enabled mechanisms for public engagement and participation**



Source: OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

While these efforts are important, they are still initial steps in the construction of inclusive governance. In order to reap the full benefits of participatory governance enabled by cost-effective digital channels, governments of the region should put in place all of the enablers required to deliver the expected impact in terms of citizen satisfaction and trust in public institutions.

Box 3.3. **Citizen feedback for a world class public sector**

The United Arab Emirates (UAE) launched its Federal Feedback Gateway "My Gov" as part of the government's efforts to open direct communication channels with citizens, better identify their needs, and attain world class public services. The platform provides a single entry point and communication channel for all government entities, making it easier for citizens to provide feedback on public services and administrative procedures. In addition, online consultation can occur through the "My Gov" section on the websites of government institutions, where the public are invited to send their comments and suggestions or take part in simple polls about specific issues or services.

Box 3.3. **Citizen feedback for a world class public sector** *(continued)*

The platform provides offline and digital feedback channels about any matter related to public services, which helps the government to crowdsource ideas to make improvements to public services. The initiative is based on a vision of customer service excellence that allows for the efficient processing of citizen feedback and reclamations. The programme supports the transparency and accountability of public institutions.

Source: Accenture (2014), *Digital Government: Pathways to delivering public services for the future*, www.accenture.com/us-en/~/media/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Industries_7/Accenture-Digital-Government-Pathways-to-Delivering-Public-Services-for-the-Future.pdf.

Public participation throughout the policy cycle, and in service design and delivery, must be supported by legal and institutional frameworks that empower citizens and facilitate transparency and support for government operations that promote greater confidence in public sector institutions. Public participation mechanisms should be mainstreamed to produce systemic change across government and society. Making digital participation effective calls for the development of infrastructural enablers, such as secure forms of electronic identification that give access to different forms of digital rights and obligations.

Inclusive policy making would benefit from a structured approach to public participation that ensures the views from all relevant actors are appropriately reflected and feedback is provided. This would help to gather support for the new policy. This approach relies on giving citizens access to required and accessible information and data that enables them to make informed policy stances and decisions. Users of services should be systematically given the opportunity to provide feedback on public services, which can provide the administration with valuable insight for the improvement of service design and delivery. The OECD Open Government Reviews of Morocco (OECD, 2015a) and Tunisia (OECD, 2016) discuss in more detail the challenges of implementing the principles of inclusive policy making in the whole policy process, through offline and online mechanisms.

Box 3.4. **ManaBalss.lv: Latvia's social e-petition platform**

ManaBalss.lv (My Voice) is a social initiative platform that provides Latvian citizens with the opportunity to submit an initiative, gather supporters and present finished initiatives to the Parliament. Each initiative, signed by at least 10 000 citizens is passed to the Parliament to be included.

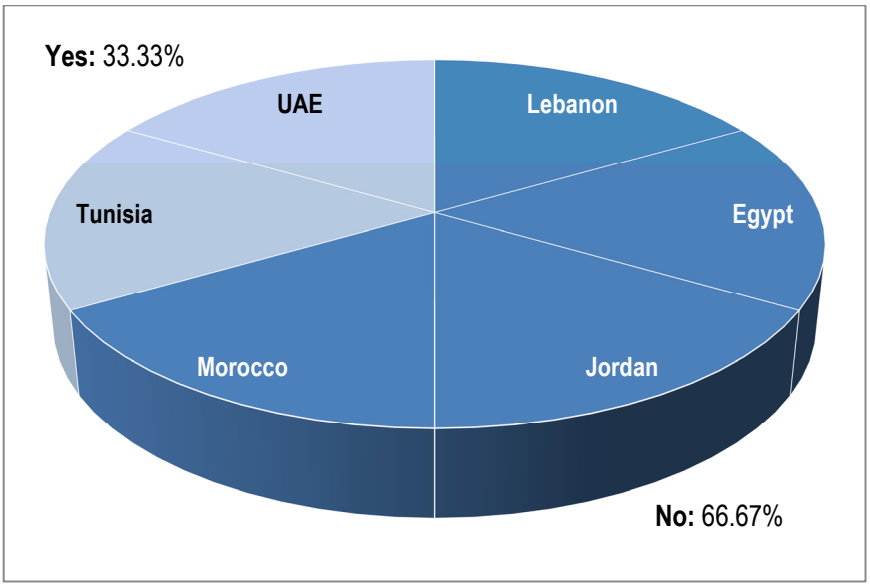
Collective submission can be submitted electronically: "a collective submission that is filed electronically shall be supplemented with technical information confirming the signing of the collective submission and ensuring the possibility to verify the number of signatories, their names, surnames and ID numbers".

Source: ManaBalss.lv (2016), available at: https://manabalss.lv/.

The creation of public value through open data demands that governments invest in the creation of a dynamic open government data ecosystem that includes the active engagement of the community of re-users. This is important as data do not create value for and by themselves, but through their use in responding to an identified need. Therefore, building citizen-driven approaches to public service design and delivery requires the promotion of data re-use by citizens and businesses, consulting them on their needs and preferences and working on improving the quality of existing data.

This process facilitates value creation and may lead to a virtuous open data circle in which re-users are themselves co-producing data that will later become valuable datasets for other re-users. Despite the critical importance of these efforts, as of November 2015 only Tunisia and the UAE report having a strategy or policy in place to promote the re-use of open government data. Even in these countries, implementation gaps – including open data portals that rely on scarce and often outdated datasets - substantially hinder their efforts to foster data re-use.

Figure 3.8. **Countries with a strategy or policy in place to promote the re-use of open government data**



Source: OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Governments around the world, including those being benchmarked, are facing higher citizen expectations in terms of participation, service quality and public sector performance. Moreover, public sectors often lack the necessary capacities to tackle complex social challenges. These trends are forcing governments to increasingly rely on collaborative approaches to solving persistent public issues. However, constituencies in the MENA region often lack the organisation, institutional framework or means to achieve effective participation. Although the countries being studied have put in place a number of ICT-enabled participation channels, these initiatives do not have the necessary scale or outreach capacity to reap all the benefits of digitally-enabled participation to build more inclusive forms of governance. In addition, citizens are still not being sufficiently engaged in the improvement of service design and delivery, nor are they receiving incentives to re-use open government data to create new services that create public value.

Despite its evident benefits and potential, building open and inclusive governance is a slow and challenging path filled with significant obstacles and risks. It requires governments to set-up the necessary building blocks in

the form of crucial institutional and infrastructural enablers. The continuous promotion of a cultural shift, while adequately managing change, is also essential. As governments throughout the region take their initial steps towards greater openness, they are presented with the opportunity to collaboratively engage with citizens in the elaboration of a much needed policy framework. Their views and expectations must be reflected in relevant decisions to nurture the open dialogue and trust between a government and its constituents.

Policy recommendations

Achieve scale in digitally enabled participation, and structure inclusive policy making

- **Upscale the existing participatory platforms and streamline ICT-enabled participation to enhance their impact through broader participation and effective follow-up**. This should include the revision of the scope of such platforms, and be complemented by a change management strategy in central government that aims to move towards more participatory processes and pro-active approaches to engaging with citizens.
- **Develop a structured approach for participation and engagement**. This should include efficient digitally-enabled participation mechanisms throughout the policy cycle, with active initiatives for stakeholder engagement that can ensure all the required information for policy design is collected. Participatory mechanisms should be structured by an overarching policy framework that ensures an enabling environment for inclusive decision making. These processes should include all relevant actors, institutional (for instance, subnational levels of government) as well as non-governmental, and it should be ensured that these actors have access to all data and information relevant for decision making in the concerned policy area. These efforts must include mechanisms to provide regular feedback to stakeholders on the impact of their engagement, and monitoring and evaluation to assess their cost-benefit.
- **Establish and develop the necessary digital infrastructure to support access to information and data and enable public engagement and participation**. Infrastructure may include open data and transparency portals that provide relevant and regularly updated data and information. All infrastructure should be complemented with a dissemination and engagement strategy.

- **Develop a systematic service design standard that regularly consults service users on their preferences**. This would achieve intuitive and user-friendly digital public services that facilitate access and uptake. Governments should develop platforms to collect and follow up on feedback and reclamations about public services to ensure access to services, ease of use and user satisfaction.

Develop institutional capacities and collaborative skills in the public sector

- **Develop capacities in the public sector to co-design and co-produce digital public services, and co-design and co-implement public policies**. These capacities include the development of required technological tools, digital skills and an administrative culture in the public sector. It should be complemented by the elaboration of guidelines to frame public engagement and participation, and the development of a shared understanding of how these should be conducted.

Principle 3: Create a data-driven culture in the public sector

Digital technologies have a substantial impact on the public sector's ability to make decisions based on evidence, all of which can lead to improved organisational arrangements, service design and policy outcomes, which enhance overall public sector performance. Governments must: recognise data as a strategic asset, develop capacities to better exploit digital technologies and data analysis to understand societal needs (e.g. foster predictive analytics), embed data throughout the policy cycle, and develop data governance arrangements to ensure the responsible and coherent use of data to benefit their constituencies. These efforts require data infrastructure for data collection, storing, sharing and processing.

Creating data analytics capabilities and a culture of data analysis in the public sector would help governments identify trends, spot potential problems or bottlenecks, and fine-tune services to be better targeted and as effective as possible. For instance, the Government of Australia, through the structured monitoring and analysis of social media, realised that there was a need to improve awareness among young people of the available financial support tools for studies. Developing such capabilities is of strategic importance for governments in the MENA region as the penetration and use of digital technologies increases, and their citizens become enthusiastic users of social media.

As OECD countries have realised the potential of data, they have progressively developed strategies, policies and programmes to improve data skills in the public sector or society as a whole (42.42% of OECD countries have such programmes or policies, Figure 3.8) These initiatives are trying to develop skills such as big quantitative data crunching, pooling and cross-linking data with other datasets, and using data analytics for improving policies and services (Figure 3.9).

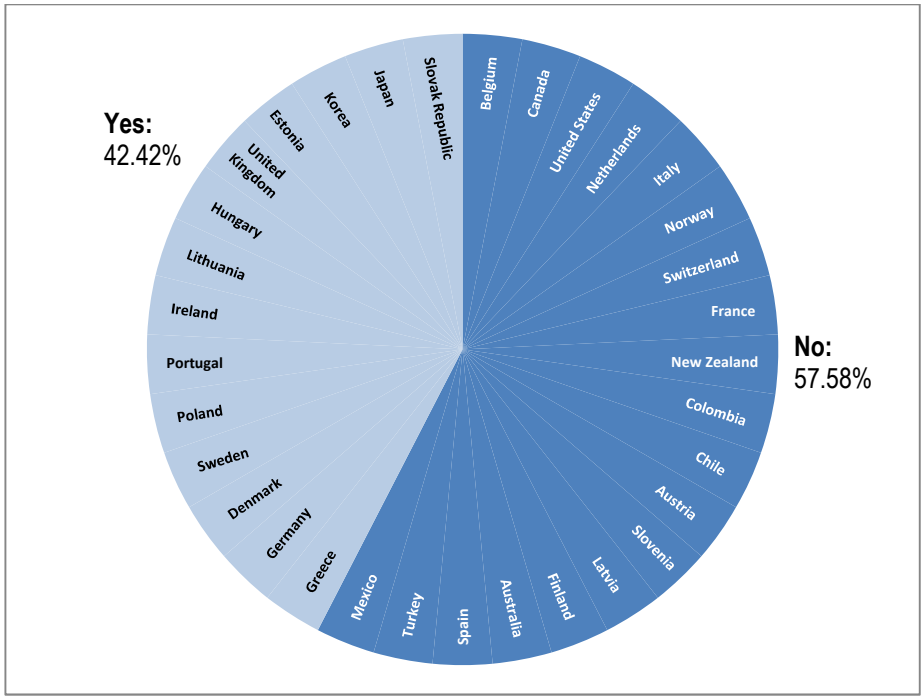
Box 3.5. **Data-analytics at the municipal level**

In New York City (NYC), data analytics promises to better target fire, safety and health inspections. NYC receives over 20 000 complaints per year for "illegal conversion", i.e. properties that house more people than is considered safe. Historically, inspectors at the Department of Buildings (numbering around 200) would find serious high-risk conditions at 13% of inspections. Recently, the Department embarked on co-operation with around 20 other NYC agencies. They cross-tabulated large amounts of additional data on the individual properties, and used the results to guide inspections. The result is that currently, between 70% and 80% of inspections discover high-risk properties, for which action can be taken. Moreover, the NYC mayor office used advanced analytics and combined data from several of the city's departments to boost predictive capacity and help save lives and taxpayers' money in the city. Results include:

- A fivefold return on the time building inspectors spend looking for illegal apartments.
- An increase in the rate of detection of dangerous buildings that are highly likely to result in firefighter and tenant injury or death.
- More than a doubling of the hit rate for discovering stores selling bootlegged cigarettes.
- A fivefold increase in the detection of business licences being flipped.
- Fighting the prescription drug epidemic through detection of the 21 pharmacies (out of an estimated total of 2 150 in NYC) that accounted for more than 60% of total illegal Medicaid reimbursements for oxycodone in the city.

Source: OECD (2015d), *Data-Driven Innovation: Big Data for Growth and Well-Being*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264229358-en.

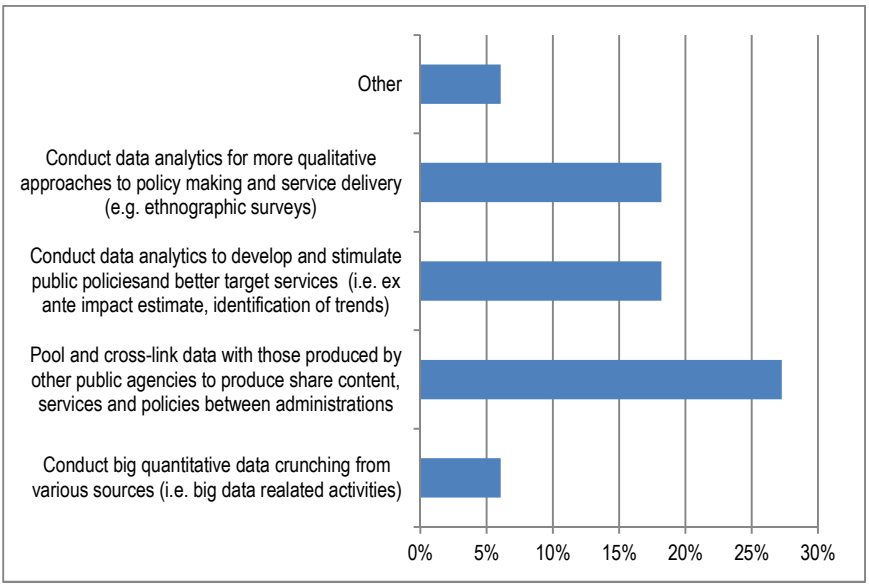
Figure 3.9. **OECD countries with a strategy or policy focusing on data literacy inside government and/or in the broader society**



Note: The survey was completed by 31 OECD countries, plus Colombia and Latvia.

Source: OECD (2014), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519.

Figure 3.10. **Data literacy policies or strategies targeting civil servants**



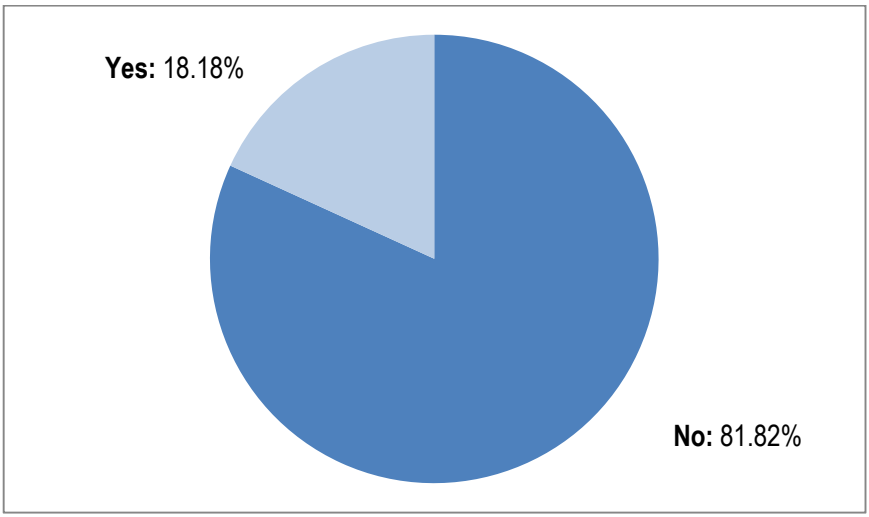
Source: OECD (2014), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519.

Data governance frameworks should facilitate the emergence of common standards for data management, including, but not limited to, the formulation and enforcement of interoperability frameworks. These governance arrangements must seek to maximise the impact of data on public sector performance and modernisation. To achieve this, OECD countries have started to experiment with data governance alternatives. For instance, 18.18% of OECD members have established chief data officers (CDOs) that support the use of data for knowledge-based policy making. The CDO is expected to improve organisational arrangements to better manage data as an asset. Ultimately, the CDO is expected to make an impact on how public institutions create, store, manage, share and use data to strengthen policy making.

Robust governance of public sector data and information systems is required to foster system integration and data sharing across public sector organisations, and facilitate the continuous improvement of government operations. This is a necessary pre-condition to making effective the once only principle, which ensures that service users are not required to provide the same information twice to a public institution. Advanced levels of

interoperability and greater data production, storage, sharing and processing capabilities are essential building blocks of public sector intelligence, which should support evidence-based decision-making. Most importantly, enhanced data capabilities enable the public sector to increasingly fine-tune and tailor its services to users' needs, making them more convenient and relevant to users' lives. All these actions and changes can lead to efficiency gains both for the service users (citizens and/or businesses) and to the service providers (public institutions).

Figure 3.11. **OECD countries with a chief data officer (CDO)**



Note: The survey was completed by 31 OECD countries + Colombia and Latvia.

Source: OECD (2014), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519.

The surveyed countries of the MENA region seem to be at very early stages in the development of data-driven public sectors. To date, only the United Arab Emirates' digital government strategy explicitly calls for the development of some form of data governance that fosters system integration both within and across levels of government, including the elaboration of a data strategy or policy and guidelines. The lack of data governance throughout the region has translated into a lack of interoperability, digital fragmentation of the public sector, a lack of efficiency, the duplication of efforts, and a significant number of untapped opportunities. Most countries in the region have not yet identified a unit or

function responsible for data governance. As of December 2015, among the selected countries for this study, only the UAE had a strategy or policy to develop data skills in the public sector or broader society.

Box 3.6. **The emerging role of the chief data officer**

Extract from the OECD's Open Government Data Review of Poland:

Many OECD countries are establishing a chief data officer/scientist position at the central government level. As this phenomenon becomes more widespread, the question that remains to be addressed concerns to what extent the chief data officer (CDO) position overlaps or complements that of the chief information officer (CIO). Normally, the role of the CIO is to manage the public sector's (or an agency's) use of technology to fulfil its mission. From this perspective there is almost always an overlap between data and technology, because technology is used to produce, store and transmit data. In other ways, it is different. The CIO should be data-informed, but modern CIOs responsible for designing and co-ordinating the implementation of Digital Government Strategies are tasked with a mandate that is broader within an organisation than gathering, managing, publishing or analysing data. At the level of national government and agencies, CIOs are juggling multiple responsibilities beyond data warehousing, from security to data centres.

The chief data officer plays the crucial role of a visionary and compelling leader. The rise of CDOs in the 21st century reflects the central role that data now plays in every facet of society. CDOs are entrusted not just with managing information but going one layer deeper in the knowledge generation and management process to raw data creation, collection, storage, sharing and analysis. In an increasing number of organisations, a CDO's position is established with the expectation that he/she collaborates with the CIO tasked with managing the digital government strategies and IT infrastructure at a government agency so as to ensure that data are available for organisational needs and to support strategic decisions.

Source: OECD (2015e), *Open Government Data Review of Poland: Unlocking the Value of Government Data*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264241787-en.

The digital era has seen data emerge as a key strategic asset to support evidence-based decision-making. It has led OECD countries to develop policies or programmes to develop data skills across society, data infrastructure to support data management and sharing, and governance frameworks to improve the use and impact of data in the public sector. While this policy area is relatively new, if countries in the MENA region fail to develop capacities in this domain they may face significant costs in the

form of inefficient spending, lost opportunities to improve government effectiveness, widening productivity gaps, and losses in competitiveness in relation to more tech-savvy and data skilled economies.

Policy recommendations

Strengthen data governance across the public sector

- **Develop standards and guidelines for public sector data use, management and sharing**. The development of a data governance framework should evolve towards the creation of a unit or body in charge of data management, which would help governments better use data as a strategic asset to foster public sector intelligence. Improved data use in the public sector should have a tangible impact on the quality of policies and services, and overall public sector performance.
- **Develop a framework and action plan to ensure data interoperability and the development of the required data infrastructure for data sharing across the public sector**.

Develop an open government data ecosystem

- **Develop a strategy and policy framework to support open government data, including "open by default" standards**. These standards should have the necessary exceptions to protect privacy and other sensitive information. The strategy should include the development of a user-friendly central one-stop-shop for government data. Open government data efforts should be complemented with initiatives to create a dynamic open data ecosystem, including the engagement of the community of data producers and re-users to find innovative solutions to public issues.

Develop skills to support a data-driven public sector

- **Perform a skills assessment across the public sector and, based on its results, develop a human resources strategy that helps develop, attract and retain data skills across the public sector**.

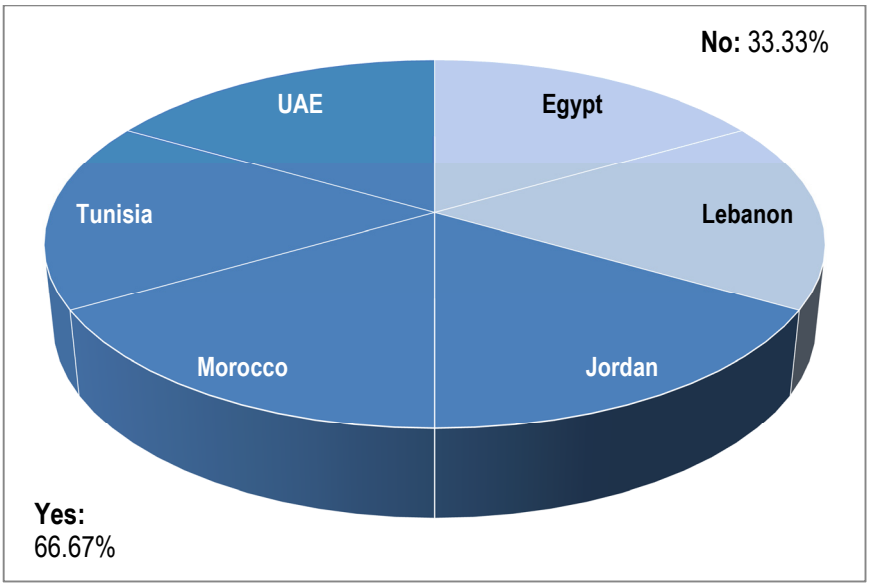
Principle 4: Reflect a risk management approach to addressing digital security and privacy issues, and include the adoption of effective and appropriate security measures

The digital era is characterised by the considerable flow of information and data. Although this provides unprecedented opportunities, it also entails risks that should be appropriately managed. As interactions with governments progressively move online, and sensitive data is stored online, digital government strategies must take into consideration privacy and security issues, especially as governments move towards more collaborative approaches that work with non-institutional actors, which may increase the number of sensitive areas and potential breaches. Major security and privacy breaches may significantly diminish trust in government's ability to manage the risks of a networked world.

While governments and policy makers still find it challenging to develop a structured approach to prevent and face risks and incidents, or measure performance and the consequences of security breaches (OECD, 2012; 2015f), a consensus exists around the benefits of establishing specialised structures in terms of security and privacy, including a national Computer Security Incident Response Team (CSIRT) and a privacy enforcing authority that is responsible for preventing, handling and mitigating security and data protection incidents. All of the countries benchmarked in this study prioritise data security and privacy. Four of these countries currently have public authorities that are directly responsible for ensuring data security and privacy.

The lack of maturity of the data security policy area, not only in the region, but internationally, calls for enhanced peer learning and international collaboration to strengthen the comparability of statistics and develop a conceptual framework that supports the development of commonly agreed indicators. Existing statistics are often unreliable, due in part to technical limitations, for instance, not all incidents are visible. The expected results of developing a conceptual, institutional and policy framework, and collaborations with other stakeholders for countries of the region, include a better estimation of the socio-economic impacts of potential harm, and a deeper understanding of the response of businesses and citizens to security and privacy breaches.

Figure 3.12. **Countries with a function or unit responsible for data security and/or privacy**



Source: OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Box 3.7. **Dutch National Cyber Security Centre (NCSC)**

The NCSC, a dependency of the Ministry of Security and Justice, co-operates in enhancing the resilience of the Netherlands in the digital domain. Its national cybersecurity strategy seeks to build "strength through co-operation", which is the title of the strategy. The strategy seeks to maximise synergies between government, private sector and the scientific community. It promotes the development of public-private partnerships, international co-operation, and different national networks to support national cybersecurity. To respond to security incidents it provides the following services: a 24 hour reporting centre which helps assess and fight the security breach, responsible disclosure, monitoring of information systems, and ICT crisis management. It also provides support in the form of expertise, advice and knowledge sharing documents.

Source: Ministry of Security and Justice (2016), National Cyper Security Center, available at https://www.ncsc.nl/english.

The increasing amount of sensitive data being handled by both the public and private sectors should stimulate countries to develop a structured approach to data and information security policy and enforcement. This will require public authorities to improve their capacity to collect data and produce reliable statistics. Achieving this goal will imply stronger collaboration with external stakeholders, from the private sector as well as other governments, to facilitate peer learning and knowledge sharing. Countries of the MENA region should develop a risk management and performance monitoring approach that covers all technical aspects of security and privacy in a digital world, including: threats, vulnerabilities, prevention, incidents and response.

The use of technology is supporting greater openness, transparency and inclusiveness across the MENA region. However, existing initiatives are often not sufficiently streamlined or structured to create a whole-of-government approach. Breaking down highly centralised and hierarchical administrative cultures will require a sound strategy to restructure incentives and guarantee citizen rights to build a public sector and society that embraces open and collaborative models of governance.

Reaping the full benefits of digital government requires the governments being benchmarked to improve their data and information policies to enhance public sector intelligence in support of strategic decision making for better policies and services. However, if governments are to retain the trust of citizens and encourage them to choose digital channels over traditional means of interaction, they must adopt a structured approach to information and data security and privacy.

Policy recommendations

Develop a conceptual, institutional and policy framework (CSIRT)

- **Establish a CSIRT and a personal data protection authority**. Develop a strategy to attract, develop and retain the necessary technical skills to ensure security and privacy in government and national ICT systems.

Strengthen collaboration with relevant stakeholders to improve intelligence

- **Develop partnerships with the private sector to collect data on security incidents and privacy violations**. For example, through honey nets and other tools.

- **Strengthen collaboration with other governments and international organisations**. This should foster peer learning and the development of a shared conceptual framework, and comparable statistics that inform policy making in this area.

Mitigate risks

- **Develop a strategy to increase awareness of risks and risk mitigation within the public sector and the broader public**.

Notes

1. The Open Government Partnership or OGP is an international organisation promoting multilateral initiative and seeking strong commitments from participating government institutions to promote transparency, increase civic participation, fight corruption, and harness new technologies to strengthen governance. The Partnership was launched in 2011 and includes more than 60 member countries as of 2016, including Jordan and Tunisia.

2. These countries are Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates.

References

Accenture (2014), *Digital Government: Pathways to Delivering Public Services for the Future,* www.accenture.com/us-en/~/media/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Industries_7/Accenture-Digital-Government-Pathways-to-Delivering-Public-Services-for-the-Future.pdf.

Gallup (2014) Gallup World Poll, Gallup: Washington DC. Available at: http://www.gallup.com/services/170945/world-poll.aspx.

ManaBalss.lv (2016), available at: https://manabalss.lv/.

Ministry of Security and Justice (2016), National Cyper Security Center, available at www.ncsc.nl/english.

OECD (2016), *Open Government in Tunisia*, OECD Public Governance Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264227118-en.

OECD (2015a), *Open Government in Morocco*, OECD Public Governance Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264226685-en.

OECD (2015b), "Citizens Spots", *OECD Observatory of Public Sector Innovation*, OECD, Paris, www.oecd.org/governance/observatory-public-sector-innovation/innovations/page/citizensspots.htm.

OECD (2015c) MENA-OECD Questionnaire on digital government (*unpublished dataset*).

OECD (2015d), *Data-Driven Innovation: Big Data for Growth and Well-Being*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264229358-en.

OECD (2015e), *Open Government Data Review of Poland: Unlocking the Value of Government Data*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264241787-en.

OECD (2015f), *Guidance for Improving Comparability of Statistics Produced by Computer Security Incident Response Teams (CSIRTS)*,

OECD, Paris, www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/REG(2013)9/FINAL&doclanguage=en.

OECD (2014), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519.

OECD (2012), "Improving the Evidence Base for Information Security and Privacy Policies: Understanding the Opportunities and Challenges related to Measuring Information Security, Privacy and the Protection of Children Online", *OECD Digital Economy Papers*, No. 214, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k4dq3rkb19n-en.

United Nations (2014), *UN e-Government Index*, United Nations, New York, https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2014.

World Bank (2015), *World Governance Indicators (dataset)*, World Bank Group, Washington DC, http://data.worldbank.org/data-catalog/worldwide-governance-indicators.

Chapter 4.

Effective governance frameworks and co-ordination mechanisms for digital government

This chapter provides an overview of the current state of political leadership, support and commitment to digitalisation efforts in the public sector. This chapter also underlines the relevance for countries in the region to achieve greater coherence in the use of technologies across policy areas and levels of government through effective governance and co-ordination frameworks. The chapter highlights key areas of opportunities and considers policy options to strengthen the institutional arrangements of digital government. The chapter closes with an assessment of ways in which the countries assessed can build stronger international co-operation in this policy area to leapfrog on the experiences of regional peers and OECD partners.

The division of powers and responsibilities across the public sector requires horizontal networked approaches to build a coherent use of digital technologies across policy areas and levels of government. The institutional structure supporting the governance of information and communication technology (ICT) in the public sector should find a balance between accountability, control and transparency to achieve expected outcomes.

Stakeholder engagement in the development of the strategy supports the strategic prioritisation of objectives and harmonises ICT investments. Failing to appropriately represent the views and interests of relevant actors in the digital government strategy may lead to a lack of ownership, poor implementation, and policy incoherence by the multiplication of sector strategies. The engagement of relevant actors and functioning co-ordination mechanisms contribute to strengthening the national strategy by providing a stronger and more effective mandate, which can help drive change and build a whole-of-government approach.

To steer change and co-ordinate ICT use across the public sector, governments often set up a unit or function with the mission of leading ICT adoption in central government and the responsibility of advising line ministries in the implementation of ICT projects. However, the political system, legal and regulatory frameworks and the structure of the public administration all have an impact in determining how this unit or function will work and exercise its authority, as there is no "one size fits all" model.

Principle 5: Secure leadership and political commitment to the strategy

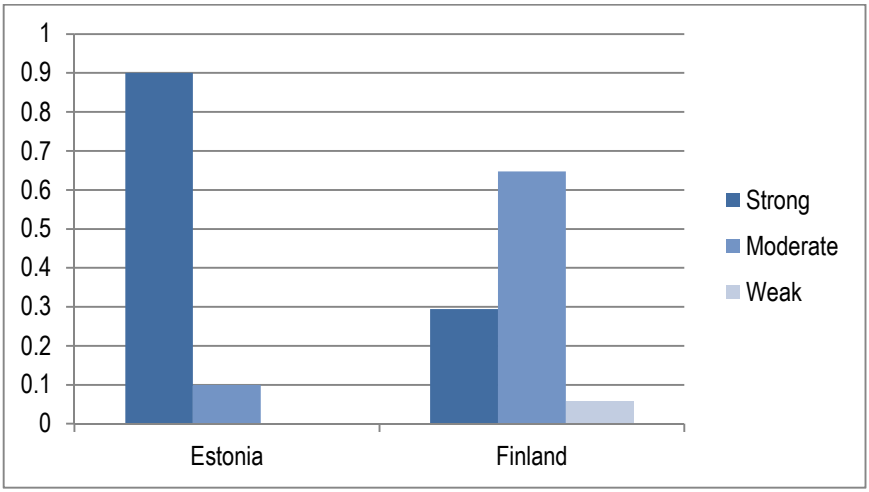
Experience across OECD countries shows that the strategic and political prioritisation of digital government as a core area of public sector reform is critical for its success. The implementation of this principle refers to securing broad political support for the high level vision embedded in the strategy by all relevant stakeholders of the digital government ecosystem inside and outside of the public sector, which creates the necessary conditions to foster change and push forward the public sector reform agenda.

Although all countries of the Middle East and North Africa (MENA) region assessed in this report have a national digital government strategy, the means and mechanisms in place for its implementation, and their contexts and levels of success, vary greatly. Given the cross-cutting nature of digital government, political support is a crucial factor of success in the implementation of the digital transformation agenda. For instance, the OECD Public Governance Review of Estonia and Finland (2015a) made

evident the role of political and top management perception and support of the digital government agenda in moving forward the transformation of the Estonian public sector (Figure 4.1).

The digital government strategy should involve the centre of government and all public administrations in the validation of digital government as a way of achieving broader policy outcomes. However, as OECD studies have shown, the centre of government in several MENA countries needs to be strengthened to enable it to play the role of co-ordinating and communicating government reforms, such as a digital government strategy, across the whole-of-government (see OECD, 2015b; 2016).

Figure 4.1. **Perceived relevance of national digital government strategy in Estonia and Finland**



Note: Indication by national government institutions of perceived relevance of the national digital government strategy to digital public service delivery in their institution.

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

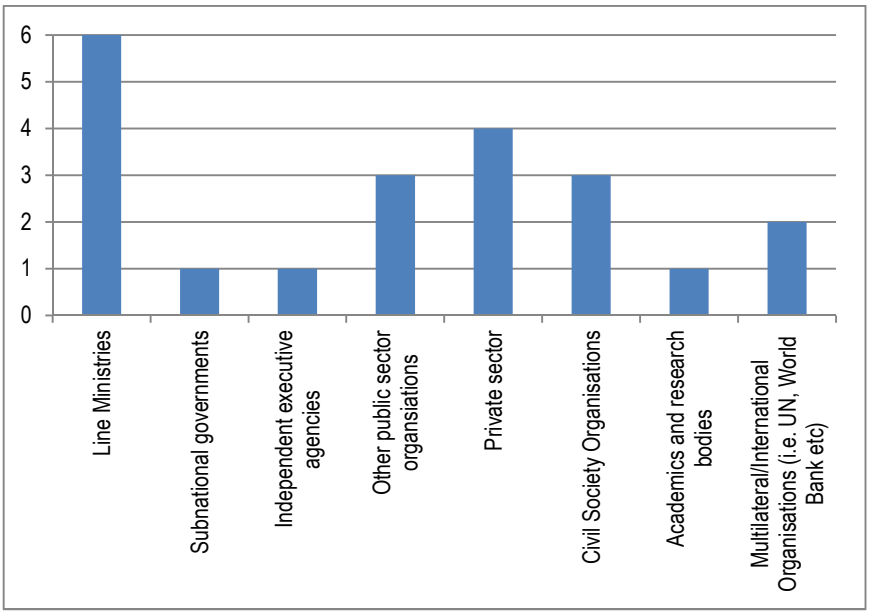
The digital transformation should be complemented by sound change management strategies that include direct and effective communication with top managers and key leaders so that they can accept responsibility for the implementation of required changes in their respective areas of responsibilities. The OECD encourages that the government-wide digital

government vision is linked with broader public sector reform objectives to secure the commitment of political leadership, promote inter-ministerial co-ordination and collaboration, and facilitate the engagement and co-ordination of relevant agencies across levels of government. The ongoing efforts to develop open government agendas in the studied countries provide an opportunity to create synergies and link both strategies.

The data collected through the questionnaire as part of this study shows that there is room for improvement in terms of engaging with academia and public sector institutions and securing their support. The lack of involvement of stakeholders in the development of the national strategy is particularly troubling regarding subnational governments, who usually hold important responsibilities in terms of public service delivery (Figure 4.2). This may lead to incoherence and a duplication of efforts in the use of digital technologies in the public sector, and diminish the impact of efforts conceived at central government. A lack of awareness of the relevance of digital government among senior civil servants is not uncommon. The development of a digital government strategy with strong ownership and support across society should integrate the views and interests of all relevant stakeholders to create a common vision of how digital technologies can be used to improve societal well-being, thus enhancing the government's ability to make the transition.

Political support for the agenda often provides greater means for implementation in terms of resources (budget appropriations), political visibility and governance (authority, location and oversight).

Figure 4.2. **Stakeholders involved or consulted in the development of the strategy**



Source: OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Successful digital government strategies require strong leadership and political support within the public sector and across society. This involves bringing together all relevant stakeholders to develop a shared vision of the role of technology in the public sector. A lack of awareness of the relevance of digital government inside and outside of government is hindering digital transformation efforts in the MENA region. Insufficient stakeholder engagement and a lack of awareness may lead to diminished pressure to reform, and poor implementation.

Policy recommendations

Engage with stakeholders and secure political support

- **Secure support and political commitment to the national digital government strategy**. This should be done by engaging with all relevant stakeholders in the public, private and civil society sectors.

Sensitise senior management

- **Sensitise senior management at the central level of government to the need of the digital transformation**. The potential costs of lagging behind on this area must be made clear.

Link to broader public sector reform strategies

- **The digital government strategy should be in tune with broader public sector reform agendas**. It should become a strategic component of an overall vision of the public sector and its role. Digital government should be recognised as an enabler of broader policy objectives.

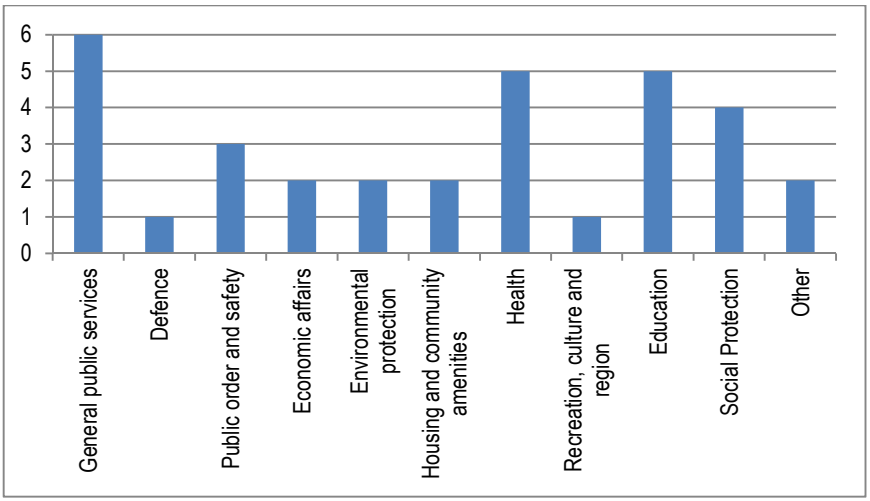
Principle 6: Ensure coherent use of digital technologies across policy areas and levels of government

In a context of decentralised responsibilities and a wide range of technology options, one of the key objectives of digital government strategies is to avoid public sector fragmentation in digital public service delivery. To achieve this, the strategy must set clear national objectives and expected outcomes for both national and subnational levels of government. These objectives must be based on an assessment of the national context, and take into consideration the maturity level of ICT use in the public sector, as well as the overall social uptake of digital opportunities and solutions. Complementing the strategy with an action plan supports accountability by providing concrete (and measurable) outcomes that should be achieved by public authorities.

The digital government strategy should be coherently articulated with other major public sector strategies (public sector reform agenda, open government agenda, information society, etc.) to ensure that the use of ICT at all levels of the public sector are in line with the national vision and objectives, and to ensure interoperability between information systems. Co-ordinating units or functions should be undertaken with the right policy levers to ensure the coherent implementation of the national strategy, and complemented by functional co-ordination mechanisms, both at the operational and strategic levels.

Similar to those of OECD countries, the digital government strategies of the selected MENA countries cover basic public services (general public services, education, health, social protection, etc.), as well as some other policy areas. According to data collected through the MENA-OECD Questionnaire, the broadest strategy is that of Tunisia, which covers all proposed policy areas, with the exception of defence.

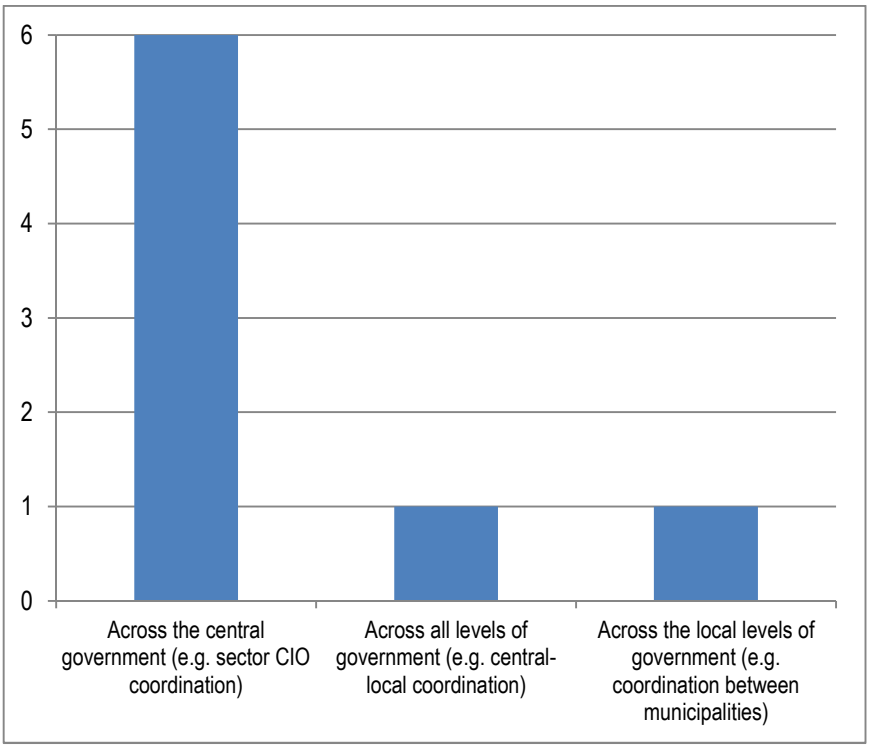
Figure 4.3. **Policy areas covered by the digital government strategy in selected MENA countries**



Source: OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Digital government strategies in the five countries assessed suffer from a lack of involvement of key public sector institutions responsible for public service delivery and policy design (MENA-OECD Questionnaire on digital government). The lack of involvement of these stakeholders increases the potential for incoherent use of technologies, while restricting ownership and the strategy's ability to concretely address the main challenges faced by these institutions. This situation is further exacerbated by the lack of formal co-ordination mechanisms, particularly in relation to subnational levels of government. This suggests that the weaknesses in the development of digital government at the local level go beyond the lack of access to infrastructure, ICT or skills, but have also a component of institutional design, administrative culture and policy formulation. Formal co-ordination mechanisms within and across levels of government, both at the strategic and operational level, should be established and strengthened. According to the questionnaire, only Egypt currently has such mechanisms in place to ensure co-ordination across levels of government.

Figure 4.4. **Formal co-ordination mechanisms in selected MENA countries**



Source: OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Box 4.1. **Co-ordination mechanisms in Denmark: Linking municipal reforms to reforms of the governance of national digital government strategies**

Responsibilities for public service delivery within the Danish public sector are divided among the central government, municipalities and regions – each with its own elected political leadership and administrations. The structural reform that took effect on the 1 January 2007 significantly strengthened the role of municipalities, which took over a major part of the former counties' responsibilities, leaving the regions with responsibility mainly for hospitals and certain social institutions within the healthcare sector.

In the year of the reform, a Steering Committee for Cross Government Co-operation – STS (*Styregruppen for Tværoffentlige Samarbejder*) – was established as a result of a 2005 agreement between the government, Danish regions and local government. The STS is a cross-government co-ordination body that aims to create joint ownership across the horizontal and vertical layers of the state administration. The overall framework for the co-ordination is confirmed in the annual negotiations on the following year's budgets between the government and the representatives of the regions and municipalities.

The STS consists of high-level representatives (on the level of permanent secretaries/managing directors) from the most important ministries in terms of digital government, and the associations representing the municipalities and the regions. This body helps to co-ordinate and build cross-government consensus around the implementation of digital government initiatives.

Source: OECD (2010), *Denmark: Efficient e-Government for Smarter Public Service Delivery*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264087118-en.

Coherence in the use of digital technologies across the public sector is supported by having a clear view of existing ICT assets in the public sector, including ICT-skills and existing ICT contracts. Developing tools to enhance the visibility of existing assets supports efficiency, the sharing of resources, interoperability and strategic decision-making, while reducing redundant efforts across the administration.

Policy recommendations

Build a shared vision across the public sector

- **Build a shared vision of digital government across policy areas and levels of government through the engagement of relevant stakeholders**. Develop dynamic co-ordination mechanisms at both the strategic and operational levels.

Strengthen governance frameworks to ensure coherence

- **Set up institutional frameworks that are in tune with digital government policy objectives**. Units or bodies responsible for digital government should have adequate levels of political support and authority, the institutional capacity to fulfil their oversight and co-ordination roles, and be equipped with appropriate policy levers to ensure a coherent approach in the use of technologies in the public sector.

Develop institutional capacities

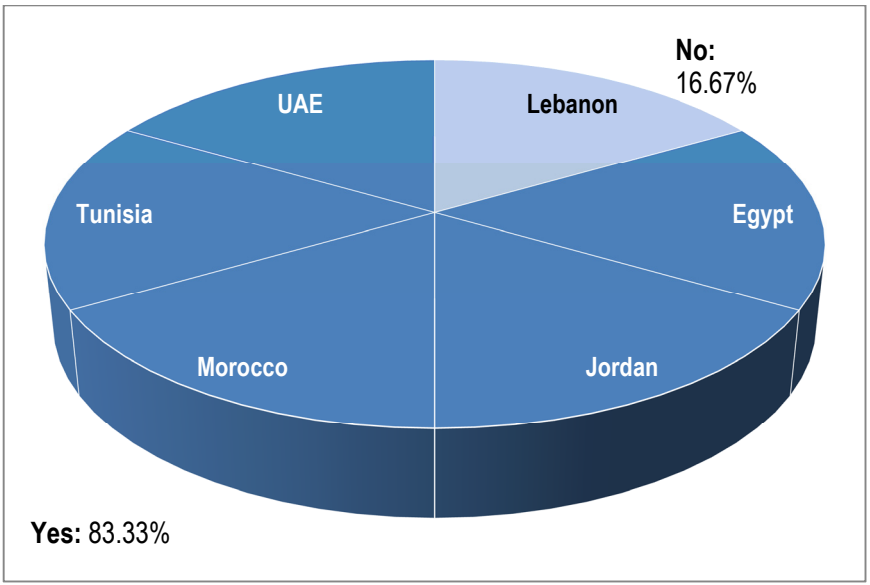
- **Develop capacities to procure technologies strategically**. This includes the development of an ICT procurement policy or strategy, and the tools to ensure clear visibility of existing assets that can inform investment decisions.

Principle 7: Establish effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across government

As seen in the previous principle, the coherent and strategic use of new technologies is largely enabled by the governance and co-ordination frameworks put in place. Similar to OECD countries, most of the MENA countries studied in this report have established a single unit or function responsible for leading and co-ordinating decisions on the use of ICT within central government (92.5% of OECD members have such a unit). These units or bodies are charged with the responsibility of steering change; monitoring the implementation of the digital government strategy; ensuring coherent articulation with other sector strategies; and developing technical standards, guidelines and policies, while driving the adoption of interoperability frameworks for public sector information systems and data, and ensuring that the objectives set by the digital government strategies are achieved.

The risks associated with poor governance include inadequate information flow and collaboration within and across levels of government, as well as with non-institutional actors; public sector fragmentation; uneven preparedness to use ICT across levels of government; and institutional capacities.

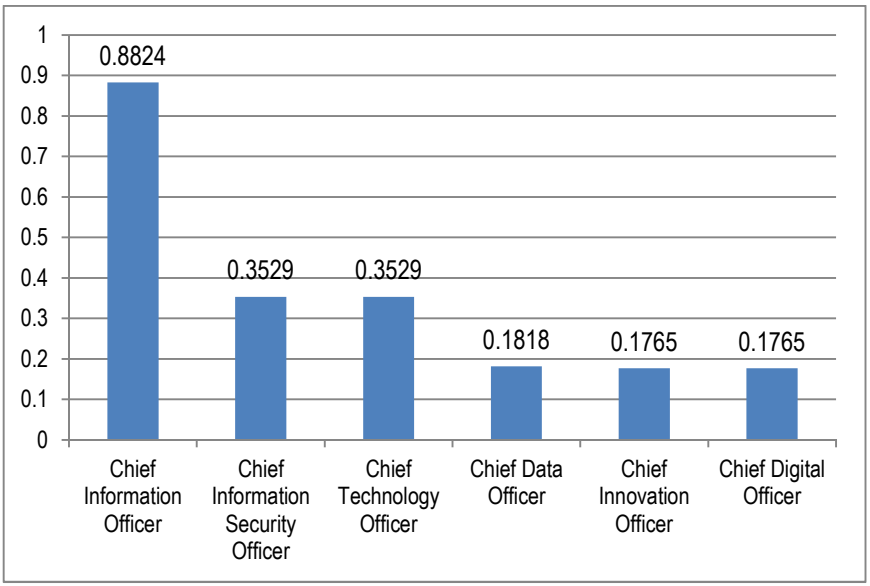
Figure 4.5. **Single functions or units responsible for leading or co-ordinating decisions on the use of ICT within central government**



Source: OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

While most governments are trying to develop institutional structures that ensure the efficient and effective use of technologies to support policy objectives, the diversity in terms of administrative structures and cultures, political systems, social reality, conception of digital government, and sophistication in the use of technologies has led countries to develop different governance structures (Figure 4.6).

Figure 4.6. **ICT governance structures across OECD countries**



Source: OECD (2014), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519; Desk research.

These structures vary in scope and approach. As public sector institutions achieve maturity in their use of ICT, governments should review their governance architectures and redesign them, if necessary, to break down silos and adopt more flexible approaches orientated towards: integrated policy making to enable the pooling of resources, re-engineering processes while supporting system integration, interoperability, and citizen-driven services. The value of experimentation and innovation in this area should not be underestimated. For instance, the United Kingdom created a digital transformation office as part of the Government Digital Service, which included the functions of a government Chief Information Officer (CIO). This enabled the country to achieve great progress over a short period of time. Other governments are setting their own digital transformation offices either under the CIO (as in the United States or New Zealand), or as a separate structure (Australia).

Box 4.2. **The governance of digital service delivery in the United Kingdom**

Located at the centre of government, the Government Digital Service (GDS) is a delivery unit charged with the mission of making public services simpler, faster, clearer and digital by default. The GDS is leading the digital transformation with the ground-breaking approach of rethinking government services to make government more agile and cost-effective, and to deeply change government-society interactions through outreach and engagement so that citizens' demands and needs are better integrated into public sector reform and service delivery design. The GDS illustrates the paradigm shift from citizen-centred services to citizen-driven services. There is a profound push for cultural change in the public sector that is setting new standards for digital services and showing great potential to transform service delivery, government operations and stakeholder involvement. Following this example, other countries, such as the United States, Australia and Estonia, have created similar positions to lead the transformation from e-Government to digital government.

The CIO Council is the co-ordination structure for all public sector CIOs (from central and local governments). It is chaired by the central government CIO and has four main functions:

1. Act as a forum for partnership among IT professionals across government.
2. Draw membership from wider public sector, central government, local government and agencies in fields such as health and law enforcement.
3. Create and deliver a government-wide CIO agenda to support the transformation of government and to build capacity and capability for IT-enabled business change.
4. Balance government-wide agendas with accountabilities in line organisations.

Sources: OECD (2013), *Colombia: Implementing Good Governance*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264202177-en; OECD (2016), *Digital Government in Chile: Strengthening the Institutional and Governance Framework*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264258013-en.

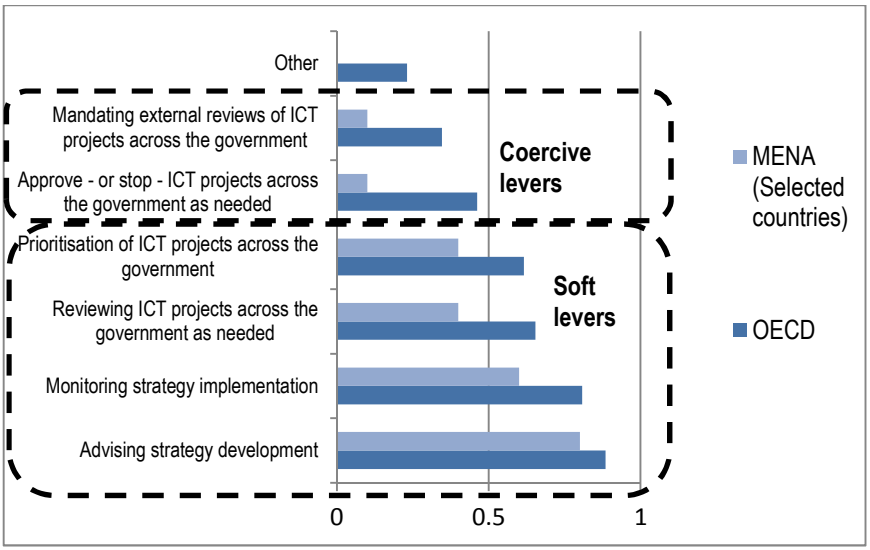
The recognition of data as a strategic asset in the digital economy has led countries to establish a government Chief Data Officer who is responsible for optimising organisational arrangements to better collect, store, manage, use and share data across the public sector. This role ultimately supports evidence-based policy making and public sector performance. Other countries that have not established such a position are experimenting with different forms of data governance.

The mandates, responsibilities and policy levers of digital transformation structures will largely determine their ability to ensure

compliance with the strategy and digital government policies in place. Certain successful models, such as New Zealand, have chosen to rely more on coercive levers (e.g. approving or stopping ICT projects), while others are based on soft levers and consensus, such as Denmark and Sweden. In other countries, a mix of the two methods has been used, suggesting that there is not a one size fits all model (for more details, see Annex A).

Overall, the use of coercive levers for units leading digital government is more common in OECD countries than in the studied countries of the MENA region. This may be linked to the levels of awareness of the relevance of digital government and the coherent use of technologies in the public sector, as well as the level of institutional maturity of the unit or body leading digital government. It is important to choose the right mix of soft and hard levers to steer the digital transformation (carrot and stick strategy). Levers should be coherent with the overall public governance ecosystem, and adapted to existing co-ordination mechanisms, institutional capacities, legal and regulatory frameworks, and the political and administrative culture of the public sector.

Figure 4.7. **Policy levers of the central government ICT co-ordinating unit**



Sources: OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*); OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, www.oecd.org/gov/government-at-a-glance-2015-database.htm.

Box 4.3. **Types of governance structure in digital government**

New trends in governance and organisational frameworks start to emerge as governments face new challenges and requirements to complete the digital transformation. Three different approaches can be observed across OECD countries, these are not necessarily mutually exclusive, and often appear combined to some extent:

1. The **Transformation Office Model** creates a new organisation with the mandate to oversee and co-ordinate the use of technology to transform the administration's functioning and the delivery of services. It is staffed with specialised expertise in digital technologies, tools and approaches. It usually has a large emphasis on bringing in people from the tech sector to compensate for the general lack of highly technical skills within most civil services. This approach can see "quick wins" on service quality improvement, but may have difficulties with longer-term structural and cultural change across government given their outsider status and culture. Examples include the UK's Government Digital Service and Australia's Digital Transformation Office.
2. The **Central co-ordination Model** seeks to create strong government-wide leadership with enforceable levers to set policy and control approval of funding for large ICT investments (e.g. set co-ordination unit with clear mandate, CIO). This may also include the creation of shared services organisations and centralised procurement processes for ICT. This approach has the advantage of creating common standards across government and potentially leveraging economies of scale. However, its focus on big-ticket items can make it slower to react and limit agility in initiating pilot projects to explore new technologies or approaches, given the emphasis on acting at a government-wide scale. Examples include New Zealand and Spain.
3. The **Decentralised co-ordination Model** provides greater flexibility for individual ministries to pursue projects and test different approaches in using ICT for modernisation. Often there is still a central co-ordination body and a national strategy to guide digital government activities, however, there are fewer mandated requirements on departments and no unifying senior official with ultimate responsibility for the digital agenda. This approach allows greater ability for experimentation and customisation by departments, as well as more opportunities to engage with other levels of government (e.g. regional, local). However, it could lead to uneven implementation and challenges in ensuring that lessons learned are effectively transmitted and operationalised across all government organisations. Sweden is an illustrative case of this governance model.

Source: OECD (forthcoming), *Digital Government Policy Toolkit*, OECD, Paris.

The co-ordinating unit or function is usually responsible for overseeing the implementation of the digital government strategy. These units use a wide range of performance indicators to measure progress towards a fully-fledged digital transformation, including fully functional end-to-end digital services. Among the selected countries, Egypt, Morocco and the United Arab Emirates (UAE) report having in place key performance indicators to monitor and assess the implementation of the strategy.

The structure of co-ordinating units include follow up mechanisms on a continuous basis. For instance, Portugal uses its Project Management Office structure to be continuously informed of developments in the implementation of digital government projects. Other countries use budget thresholds and the strategic value of projects to structure their monitoring and assessment systems. In Denmark, ICT projects over a pre-determined budget threshold must be submitted to the Danish ICT Project Council for a risk assessment. High-risk projects are closely monitored by the council and will be forced to budget with an additional risk reserve that is centrally managed by the Ministry of Finance. All risk-assessed IT projects have to submit biannual progress reports to the council on expectations regarding schedule, project economy and realisation of benefits.

The use of standardised business case and project management models for ICT projects can help public institutions present, justify and set objectives for their ICT investments, which can then be monitored and assessed (see Principles 9 and 10 of the OECD Recommendation). Based on the pre-established objectives established by the business case, the project manager can identify shortcomings and make quick adjustments. Complemented with adequate follow-up mechanisms, these tools are an important source of data that allow governments to identify drivers of the success and failure of government ICT projects, thus continuously improving the public sector's capacity to manage increasingly complex ICT projects.

Governments need governance units in charge of leading and co-ordinating decisions on ICT use at central government. However, as governments become mature in their use of technologies and their priorities change, governance frameworks should be revised to ensure that they are in tune with their ambitions and strategic objectives, for instance, improved data management or improved service delivery. These structures should have the right mix of policy levers that enable them to fulfil their mandate.

Policy recommendations

Identify clear roles and responsibilities

- **Identify clear roles and responsibilities in the governance of public sector ICT**.
- **Establish a unit or body at the central government level in charge of co-ordinating government-wide ICT policy (Government CIO or equivalent position) if clear roles are not identified**. This unit should be responsible for the efficient, effective and coherent use of ICT in the public sector. It should manage information systems, deliver user-friendly digital services, and progressively enable user-driven approaches to digital government.

Choose the right policy levers

- **Institutions responsible for steering the digital transformation should be provided with the appropriate policy levers to meet their objectives**. In most cases, this requires a mixture of "soft" and "coercive" policy levers that allows institutions to align incentives with broader policy objectives.

Strengthen co-ordination mechanisms

- **Establish co-ordination mechanisms both within and across levels of government at the strategic and operational levels**. These mechanisms should support strategic decision making at the political and senior management levels, and implementation level. They should also support coherence in the conception and implementation of ICT projects and initiatives. This is particularly true across levels of government, where few formally established co-ordination mechanisms exist in the region.

Regularly review the existing governance architecture

- **Ensure that governance frameworks are in tune with strategic priorities and government ambitions**. Help governments break down silos and adopt more flexible approaches that are orientated towards integrated policy making.

Oversee the implementation of the strategy

- **Develop a set of performance indicators to monitor the implementation and assess the impact of the digital government**

strategy. These indicators should provide the co-ordinating unit with a clear and overarching view of digital government initiatives, including the inputs, activities, outputs, outcomes and impact.

- **Establish tools that can help structure and monitor ICT investments at the project level**. These should provide public authorities with a clear institutional and analytical framework to decide on ICT investment, set clear objectives and monitor their realisation.

Principle 8: Strengthen international co-operation with other governments

In a context where businesses, civil society organisations and other stakeholders increasingly work and organise themselves across borders, international co-operation is becoming more relevant. Digital government strategies can benefit from strengthened international co-operation between governments to deliver better services.

Governments are facing similar challenges in achieving new levels of sophistication in the use of ICT. Rapidly changing technologies, evolving citizen demands and expectations, and changing working methods are pushing governments towards developing new capacities and exploring new ways of working, often resorting to experimentation. This context makes international co-operation mechanisms particularly valuable as a tool to improve peer-learning and knowledge sharing. This is particularly relevant as ICT skills and areas of expertise are not evenly distributed across countries (OECD, forthcoming). More robust international peer-learning mechanisms and co-operation can help countries use the experience of peers, and adequately tailor practices to their own environments, or use new technologies.

A structured approach to international co-operation and knowledge sharing provides countries with the opportunity to bridge the gaps between less and more ICT advanced societies, by sharing skills and experiences in the use of technologies by governments. These knowledge sharing exercises support the development of the required consensus and political commitment that leads to the adoption of international legal instruments, which can become drivers of change that commit countries to the digital transformation. "By setting common standards, these instruments serve as a basis for inter-governmental co-operation on different areas and allows for greater interoperability and comparability of data and information, which can strengthen achievement of policy goals (e.g. fight against corruption) or delivery of services across borders", which supports international integration

(OECD, forthcoming). These international standards, together with increasing cross-border flows, may lead to cross-border services (e.g. Finland and Estonia). Countries of the MENA region would benefit from adopting these standards and actively participating in their conception and oversight, as well as working with different peer-learning bodies. Participation in the OECD E-Leaders (some of the countries) and the MENA-OECD Working Group on Open and Innovative Government (all of the countries) offer opportunities for peer-learning and exchange.

The countries of the MENA region considered for this study acknowledge the potential of international co-operation in relation to the digital transformation. Egypt and Lebanon, for instance, have developed their strategies in collaboration with bilateral or multilateral agencies (OECD, 2013). However, a structured strategy for strengthening international co-operation should include clear visibility of existing assets (including skills), as well as the needs and strengths of regional and international partners. This can eventually lead to the strategic development of infrastructure for data and knowledge sharing, such as staff exchange and secondment programmes, among others.

Enhanced regional co-operation schemes could include the development of common standards and the targeting of resources, to the development of pilot projects that could serve as basis for the development of broader frameworks for cross-border service delivery.

Policy recommendations

Develop and integrate international co-operation mechanisms and fora dedicated to digital government

- **Develop knowledge sharing mechanisms with both regional and international partners**. For example, the Working Group II on Open and Innovative Government, the OECD E-Leaders, or staff exchange programmes that support rapid human resource development, identification and sharing of good practices, and strengthen bilateral digital government initiatives.
- **Develop enhanced co-operation agreements and mechanisms**. These should assist the development of cross-border digital services to support the sharing of resources, economic integration and cultural exchange across the region, and with other international partners.
- **Study, develop and adhere to international legal instruments supporting the development of digital government**. For example,

the OECD Recommendation on Digital Government Strategies, which involves a community of digital government practitioners from digitally advanced economies to accelerate knowledge transfer between countries. The OECD Recommendation is also linked to a continuously evolving Digital Government Toolkit that is based on OECD experience.

- **Assess the potential for developing common standards in the framework of enhanced regional co-operation**. Such initiatives could be supported by the targeting of resources to the development of specific pilot projects that could serve as basis for the progressive development of a framework for cross-border services.

This chapter benchmarked a selected group of MENA countries to the second pillar of the recommendation. This has allowed an exploration of how to improve political support for the digital government agenda and ensure coherence in the use of technologies across the public sector. Trends in the governance of digital technologies in the public sector across the OECD and the MENA countries being studied were assessed, and analysis presented on how stronger international co-operation can lead to building capacities more rapidly in the region.

References

OECD (2016), *Open Government in Tunisia*, OECD Public Governance Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264227118-en.

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

OECD (2015b), *Open Government in Morocco*, OECD Public Governance Reviews, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264226685-en.

OECD (2015c), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

OECD (2014), "OECD Survey on Open Government Data" (dataset), OECD, Paris, http://qdd.oecd.org/subject.aspx?Subject=589A16C1-EADA-42A2-A6EF-C76B0CCF9519.

OECD (2010), *Denmark: Efficient e-Government for Smarter Public Service Delivery*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264087118-en.

OECD (forthcoming), *Digital Government Policy Toolkit*, OECD, Paris.

Chapter 5.

Building capacity for implementation and impact

This chapter covers the institutional capacities of governments in the region to implement digital government strategies and deliver the expected impact and results of the use of digital technologies in the public sector. This chapter assesses the use of key processes and tools enabling public institutions to make strategic decisions in ICT management and acquisition. It looks at the use of ICT business cases and the strategic procurement of ICTs, to avoid duplication of efforts and capture synergies, and help public institutions manage ICT projects effectively and achieve their objectives efficiently. In addition, Chapter 5 provides an overview of government's ability to manage ICT projects and digital technologies, the availability of advanced digital skills in the public sector and the existence of legal and regulatory frameworks that enable the public sector to reap the full benefits of ICTs. The chapter advances recommendations to strengthen institutional capacities in the countries assessed.

The planning and implementation of information and communication technology (ICT) has become more complex in terms of budget size, the number of actors involved, and the number of technologies available. Large ICT projects are likely to significantly impact government's activities and the way the public sector operates. This new reality is demanding new skills from project managers. The implementation of ICT projects increasingly relies on new business models and forms of collaboration with external and internal actors, which increases the difficulty of implementing and monitoring.

Technological change, such as apps, cloud computing, open source software, social media, internet of things and artificial intelligence, is also changing the nature of ICT projects and how they are delivered. They are becoming less monolithic, more integrated, and often have agile delivery methods for which procurement rules should be adapted. These aspects facilitate the innovative use of digital technologies.

To build institutional capacities to manage ICT projects, OECD countries have chosen to develop business cases and project management models that support project managers in their decision making role and facilitate project monitoring by clarifying the need of the project, the expected outcomes, and roles and responsibility.

Developing the necessary institutional capacities requires governments to have a clear view of existing ICT assets, including skills, and conduct an assessment of needs to achieve priority objectives. This will allow the public sector to develop a sound ICT procurement policy or strategy, and determine its approach to developing and attracting the necessary set of skills to the public sector.

Legal and regulatory frameworks should be in tune with the broad national objectives for ICT development both inside and outside of the public sector. These include the recognition of digital rights and obligations, and the appropriate market conditions for the development of telecommunications and ICT. Coherent but respectful data management and other ICT related issues should be enabled.

Principle 9: Develop clear business cases to sustain the funding and focused implementation of digital technologies projects

Experience across OECD countries has shown that preparing business cases for ICT projects, as well as standard project management models and a centralised review for projects above pre-determined budget thresholds (to avoid encumbering the public sector's actions), allows governments to justify public investment and prove the impact of ICT initiatives. Solid

business cases and ICT project management models include clear roles and responsibilities for all relevant actors, as well as clear consequences for the failure to meet agreed milestones, including the conditional release of funding, financing mechanisms that commit projects to achieving benefits, and peer or gateway review procedures.

Business cases allow governments to have "[…]a consistent framework for comparing investment decisions, a better understanding of the drivers of project efficiency or factors to enhance return on investments, a better view of costs, benefits and beneficiaries, and a contribution to evaluating efficiency and effectiveness of digital government initiatives." (OECD, forthcoming).

Box 5.1. **New Zealand: Better Business Cases (BBC)**

The primary objective of BBC is to enable smart investment decisions for public value. If applied appropriately BBC can also help to:

- reduce the costs of developing business cases
- reduce the time it takes to develop business cases
- meet recognised good practice

A business case is the vehicle to demonstrate that a proposed investment is strategically aligned, represents value for money, and is achievable. A business case turns an idea (think) into a proposal (plan). It enables decision makers to invest with confidence, knowing that they have the best information available at a point in time. It is also a reference point during the "do" phase to support delivery, and used in the "review" phase to determine whether the benefits in the business case were realised.

For significant projects, there are two key stages in the evolution of a project business case: the indicative business case and the detailed business case. For smaller and/or lower risk investments, typically a single stage business case (which combines the indicative and detailed business cases) is used.

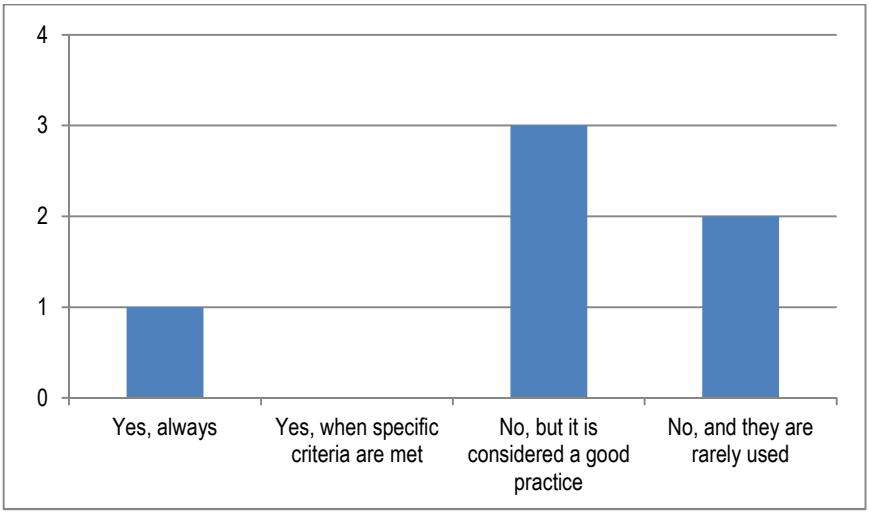
Source: Treasury of the Government of New Zealand (2015), *Better Business Case Methodology*, www.treasury.govt.nz/statesector/investmentmanagement/plan/bbc.

Business cases support value creation as they require the clear and explicit indication of the value of the project, and help monitor the use of financial resources and services, as well as the benefits of the project. They also support the coherence of ICT investments by the public sector and help avoid the duplication of efforts.

However, the Middle East and North Africa (MENA) countries considered for this report seldom use business cases for central government ICT, as business cases do not respond to a structured and systemic whole-of-government approach. Moreover, only Egypt and Jordan currently use budget thresholds to structure ICT project governance in general.

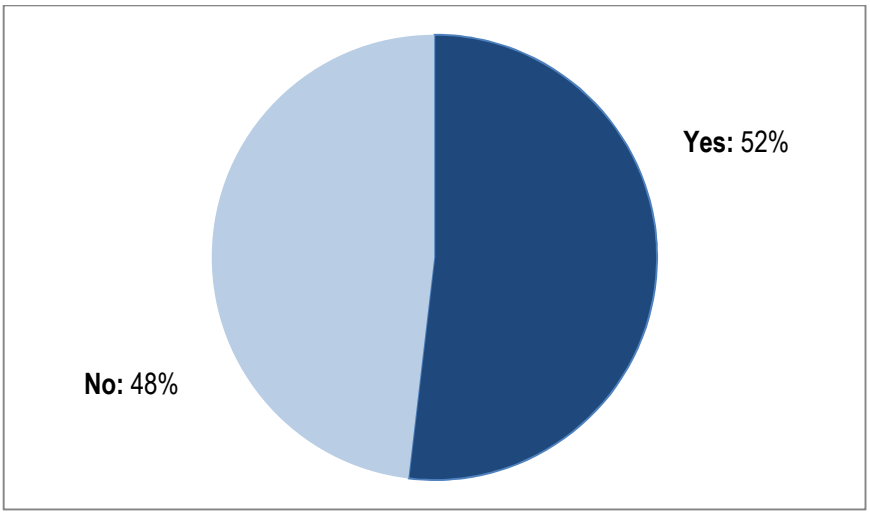
Figure 5.1. **Use of business cases for ICT projects in selected MENA countries**

Number of countries being benchmarked per option



Source: OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Figure 5.2. **OECD countries with a standardised model for structuring and presenting business cases**



Note: Results reflect the responses of 25 OECD countries, plus Colombia and Latvia.

Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris http://www.oecd.org/gov/government-at-a-glance-2015-database.htm.

OECD experience suggests that the development of mandatory standardised business cases for projects above a certain threshold will help structure and rationalise public investment in ICT, and encourage the re-use of existing platforms and assets. The development of this tool should be undertaken in consultation with relevant stakeholders from different levels of government and the administration to make sure that their views and concerns are appropriately taken into consideration. The structuring and risk management value of the business case model should be appropriately balanced, providing enough room and flexibility for technological change and innovation.

Policy recommendations

Develop clear business cases

- **Develop mandatory business cases for ICT projects above a certain budget threshold**. Consult relevant stakeholders involved in or affected by ICT project management.

- **Establish a unit responsible for ICT project oversight and operational co-ordination** (see policy recommendations for principles 6 and 7). This unit will have the mandate to ensure co-ordination and coherence in the development and use of business cases in central government. The unit should also be responsible for ensuring co-operation and co-ordination in ICT project management across levels of governments (operational co-ordination). Such mechanisms should serve to share lessons learned and progressively build capacity across levels of government.

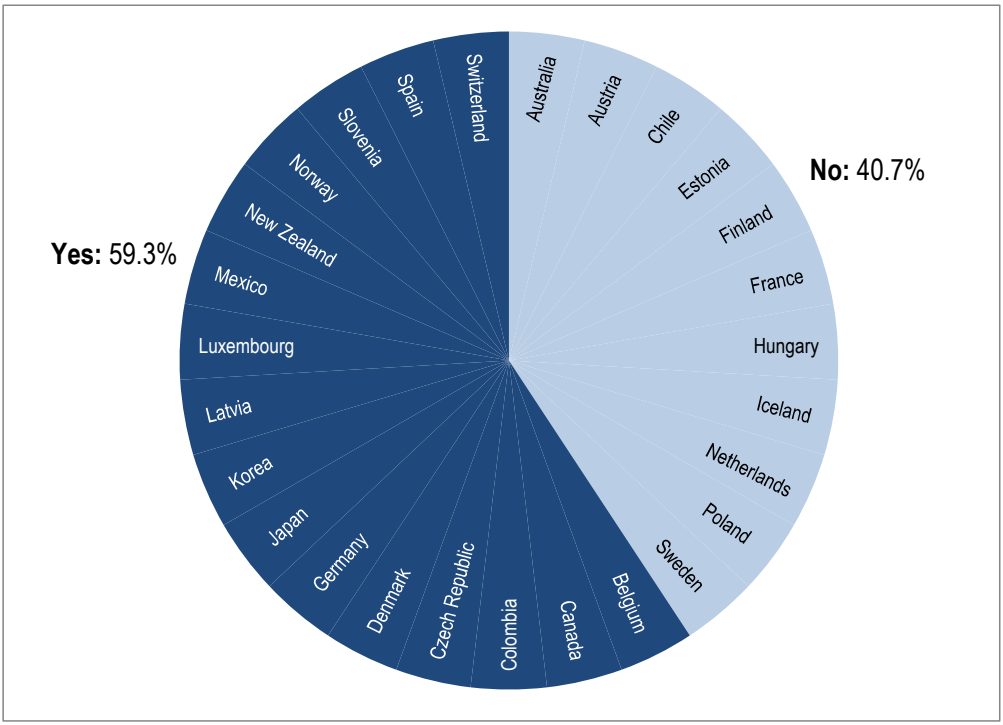
Principle 10: Reinforce institutional capacities to manage and monitor projects' implementation

As ICT projects become more complex and the need to manage risks of large investments more important, OECD governments have increasingly opted to establish centralised project review mechanisms. According to the OECD Survey on Digital Government Performance (2014), 65% of digital government co-ordinating structures have the power to review projects, and 42% can approve or stop projects. The design of these review mechanisms, as well as their scope as governance frameworks, will depend on the political system and the administrative structure of the country. These review mechanisms seek to maximise efficiency and minimise the risks of duplication and failure.

Centralised review mechanisms should provide the centre of government with a clear picture of ongoing projects and existing assets in order to make strategic investment decisions.

To support the implementation of complex and often large ICT projects and investments, OECD members have developed ICT project management models that determine roles and responsibilities, helping to clarify who is accountable for which parts of the project, for the management of certain financial resources, and supervision mechanisms. These models support the monitoring of projects and the early identification of problems, their diagnosis, and corrective actions. The absence of an equivalent tool in countries of the MENA region significantly hinders regional governments' institutional capacity to implement ICT projects, but also to monitor and ensure the expected efficiency gains.

Figure 5.3. **OECD countries with a standardised ICT project management model**



Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://www.oecd.org/gov/government-at-a-glance-2015-database.htm.

Technological change has an impact on organisational arrangements, the public sector workforce and the skills required by civil servants. Governments of the MENA region should be able to determine the existing skills that they can rely on, and the skills gaps they need to address in order to continue moving forward the agenda of digital government. While most digital government strategies, or digital/information age strategies, make specific reference to the development of ICT skills in the public sector or more broadly, a structured approach to rapidly build skills and capacities is yet to be developed.

Box 5.2. **Danish standardised ICT project management model**

The Danish ICT project model provides a standardised way of managing ICT projects across the government administration. With clear reference to the UK ICT project model, Prince2, it provides guidelines for how to organise and manage ICT projects and delivers concrete templates for all generic products in the process. The overall phases covering all projects are illustrated below:

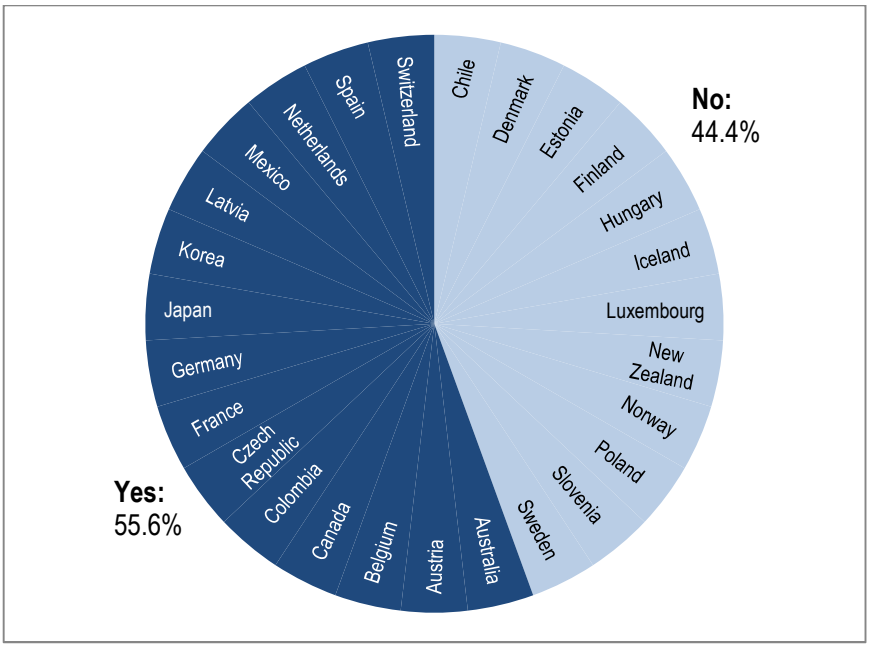


The Ministry of Finance has created a unit to establish good practice on e-government projects that covers mandatory and recommended elements. The model has enabled the establishment of a specific governance structure, for example, requiring approvals of well-developed business cases, as well as ongoing approvals (so called "stop-go" decisions) each time a project passes from one phase to the next.

Source: Digitaliseringsstyrelsen (2016), Den fællesstatslige it-projektmodel, www.digst.dk/Styring/Projektmodel.

To ensure availability of the required skills, countries in the MENA region should develop partnerships and strategies that allow them to leverage the strengths of non-institutional actors, attract young professionals, provide continued education, create centres of excellence, and develop employee exchange programmes with leading firms or organisations in the technology sector.

Figure 5.4. **OECD countries with a strategy to develop, attract and retain ICT-skilled civil servants**



Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://www.oecd.org/gov/government-at-a-glance-2015-database.htm.

As ICT projects become increasingly complex, governments should structure their project governance to ensure appropriate management of risks. ICT project governance frameworks should clarify roles and responsibilities, support project oversight, and help identify drivers of efficiency and failures, enabling managers to make timely corrections. Governance bodies and project managers should have a clear visibility of existing ICT initiatives to avoid duplication of efforts or inefficient spending. Finally, governments should assess skills gaps in the public sector in order to develop human resource development strategies.

Policy Recommendations

- **Develop standardised ICT project management models and requirements**. These should be flexible enough to enable agile delivery models for ICT projects.

- **Progressively develop tools that allow clear visibility of all digital government initiatives across government levels**. Clearly determine existing assets in the public sector and facilitate co-ordination and resource allocation.
- **Identify skills gaps in government and develop a strategy to attract and progressively develop ICT-skills in the public sector**. This should progressively include monitoring mechanisms for identifying digital literacy, and project management skills in the public sector. Develop a strategy to develop missing skills.

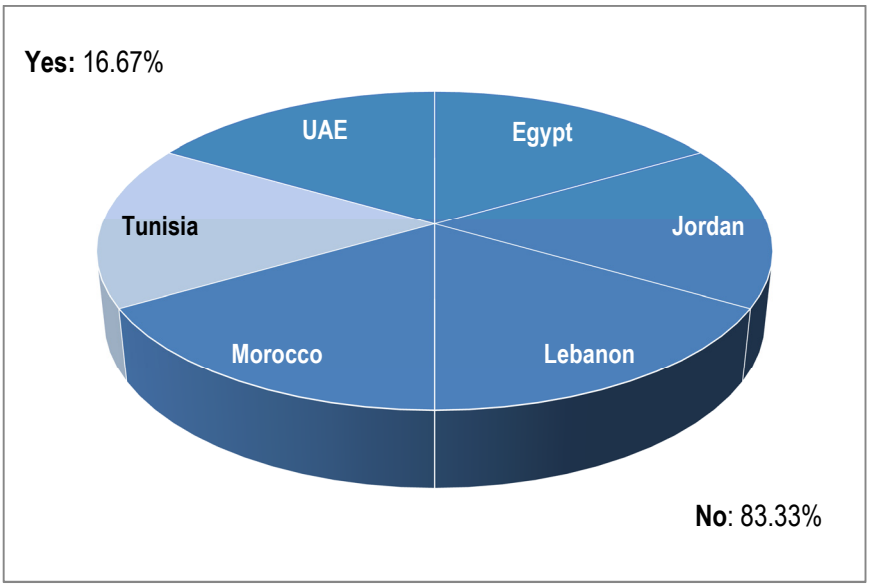
Principle 11: Procure digital technologies based on the assessment of existing assets

Principle 11 of the OECD Recommendation highlights the need for adequate governance and mechanisms for procuring technology strategically. These frameworks should allow a structured approach that remains flexible enough to enable innovative forms of procurement, and public-private partnerships and deployments. A strategic approach to ICT procurement should seek to increase efficiency and support innovation and the sharing of resources to help achieve overarching policy objectives.

An ICT procurement policy should provide a flexible framework to enable governments to use new technologies and benefit from new deployment methods, such as agile and iterative delivery. Certain OECD countries, such as Canada, have found it difficult to use some open source software for licensing and intellectual property reasons. Procurement rules focusing on economies of scale may tend to favour large ICT providers, which weakens competition and prevents the public sector from having access to the services of small, highly innovative and specialised start-ups.

The countries concerned by this study have developed shared ICT services that look for efficiency gains and clearer accountability. While sharing resources is a potential source of economies of scale and scope, empirical research shows that these results largely depend on the motives for establishing a shared service centre, change management, the governance mechanisms put in place, and the scope of the activities. Reaping the full benefits of shared procurement mechanisms for basic ICT infrastructure requires clear procedures and monitoring mechanisms in order to identify the drivers of efficiency and factors hindering procurement performance.

Figure 5.5. **Countries with a strategy covering ICT procurement specifically**



Source: OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

Among the countries studied, only Tunisia reports having a strategy that covers ICT procurement specifically. The lack of a strategic approach with clearly defined objectives is further hindered by the lack of basic tools for monitoring and managing ICT assets. For instance, none of the countries studied have a central, searchable repository where all ICT contracts signed by the government are stored. The capacity of government to strategically allocate resources and investments in the procurement of new technologies also depends on the availability of management tools that help them decide on the appropriate mix of technologies, based on a good knowledge of existing assets, including skills. The existence of an ICT inventory that includes: assets, their age and life cycle; a public services catalogue; a repository of current contracts; inter-agency agreements; and public sector registries, is therefore crucial. Historical supplier performance monitoring tools are an additional source of data that inform decisions on procurement and investment.

Strategies to acquire technologies should allow public authorities to reap the benefits of available technological solutions, while ensuring the efficient and transparent use of public resources. To deliver transparency and value for money, certain OECD governments promote the use of open source

solutions. These governments support decisions of technological choice on total cost of ownership methodologies, which help compare the net benefits of open source versus proprietary solutions.

Governments should promote the re-use of ICT and digital assets, and governments of the region that wish to make a rational use of resources should also explore the possibility of using public software. Public sector institutions often develop solutions internally that could be upscaled or re-used for similar purposes in other parts of the administration. Encouraging such practices can help rationalise investments and avoid duplications.

Policy recommendations

- **Establish a unit or body in charge of ICT procurement policy in central government**. This unit should periodically assess the evolving needs of the public sector in terms of procurement and deployment of technologies. It should be able to reap efficiencies and respond quickly to technological change.
- **Establish a central repository for all ICT contracts, inter-agency agreements and initiatives across the public sector**. Develop an inventory of existing assets, including their age, and a database of previous supplier performance for ICT projects. This would help the public sector better assess needs, plan ICT investment, develop procurement intelligence, and create strong incentives for top-performing ICT services and providers.
- **Develop a strategy and/or policy for ICT procurement based on existing assets**. This should allow for innovative deployment methods (e.g. agile and iterative delivery methods), facilitate access to small specialised firms to compete for contracts on their area of expertise, and aid the use of open source software.
- **Foster policies that rationalise public ICT investments through the use of open source software and public software**. Such policies should avoid the duplication of efforts and proprietary solutions when possible, helping institutions deliver value-for-money in the choice of technologies.

Principle 12: Ensure that general sector-specific legal and regulatory frameworks allow digital opportunities to be seized.

Legal and regulatory norms provide an institutionally enforceable framework for regulating behaviour and social interactions between

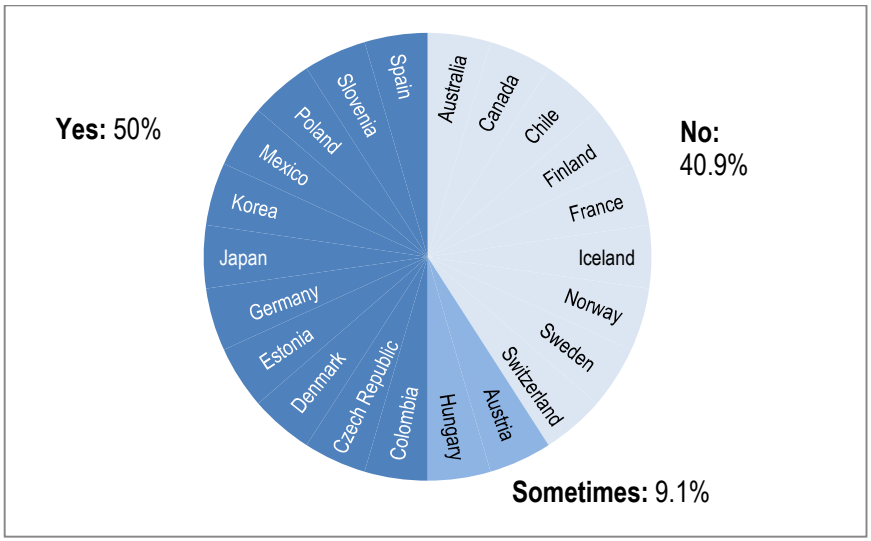
individuals, as well as between the public sector and the rest of society through shaping service delivery tools and mechanisms. This framework regulates interactions both online and offline. For instance, a country's legal system may recognise a transaction made online as legally binding, or not, and provide the basis for digital identification of citizens, which allows access to digital public services. Hence, the legal and regulatory framework of a country may either facilitate or delay the digital transformation of the public sector. These frameworks also determine the institutional framework in which the digital transformation will have to develop, and may determine digital rights and obligations.

Experience in OECD countries has shown that it is important to revise legal and regulatory frameworks so that they are coherent with the country's digital strategy and work as an enabler, not an inhibiter of digital government.

Certain countries often aim to foster the adoption of digital government services through the establishment of mandatory online services. These often concern university applications and enrolment (as in Egypt) or tax declarations (as in Tunisia[1]) or the declaration of import and export goods in Morocco. While potentially powerful, this approach should be used with caution, especially regarding persistent digital divides, to avoid the creation of new forms of exclusion.

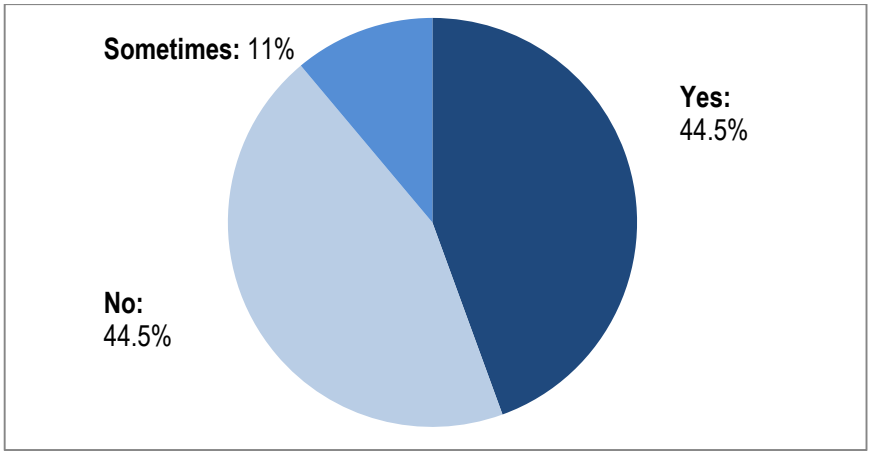
As public authorities evolve towards more sophisticated use of technologies, governments have increasingly recognised digital rights that empower citizens. For instance, certain OECD countries have formally recognised the right of a citizen to require digital communication, or to not have to provide the same data or information more than once. However, these digital rights have technical consequences for the public sector, which must have the right capacities in place. None of the studied MENA countries recognised or implemented the "only once" principle.

Figure 5.6. **Countries that recognise citizen's right to request digital communication with the public sector**



Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, http://www.oecd.org/gov/government-at-a-glance-2015-database.htm.

Figure 5.7. **OECD countries that recognise the right of citizens not to provide the same data or information to the public sector more than once**



Source: OECD (2014), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris http://www.oecd.org/gov/government-at-a-glance-2015-database.htm.

Legal or constitutional issues may impact inter-institutional fluidity in terms of transfer of resources and data exchange, or create cross-jurisdictional legal tensions. Ensuring the long-term coherence of the legal and regulatory frameworks with the digital context requires new legal and regulatory proposals, including a component on its consequences for the digital society and government, to be submitted for a regulatory impact assessment.

Policy recommendations

- **Establish key digital enablers for digital public services**. These include electronic identification, digital signature and legally binding online consent.
- **Recognise the right to online communication with the administration under certain circumstances**. Take into account institutional capacities.
- **Develop legal and regulatory frameworks that support ICT co-ordination across the public sector**. These include the cross-jurisdictional sharing of data and resources.
- **Include the digital dimension in regulatory impact assessments**. This would avoid unintended impacts on digital development.

Chapter 5 looked at the third pillar of the OECD recommendation, at trends in the OECD and MENA regions that may help governments structure and better target their ICT investments. For example, the elaboration of standardised business cases, or similar value propositions and ICT project management models. Tools to support a more strategic approach to ICT procurement by governments were identified, and the issue of developing enabling legal and regulatory frameworks across society was explored.

Notes

1. Other mandatory online services in Tunisia include: expenditure management, procurement advertisement, customs clearance operations and publication of public employment opportunities.

References

Digitaliseringsstyrelsen (2016), *Den fællesstatslige it-projektmodel*, www.digst.dk/Styring/Projektmodel.

OECD (2015), MENA-OECD Questionnaire on digital government (*unpublished dataset*).

OECD (2014c), "OECD Survey on Digital Government Performance" (dataset), OECD, Paris, www.oecd.org/gov/government-at-a-glance-2015-database.htm.

OECD (forthcoming), *Digital Government Policy Toolkit*, OECD, Paris.

Treasury of the Government of New Zealand (2015), *Better Business Case Methodology*, www.treasury.govt.nz/statesector/investmentmanagement/plan/bbc.

Annex A. Policy levers of digital government co-ordinating units in the OECD

	Responsibilities of function/unit leading and co-ordinating digital government or e-government						
	Advising strategy development	Monitoring strategy implementation	Prioritisation of ICT projects across the government	Reviewing ICT projects across the government as needed	Mandating external reviews of ICT projects across the government	Approve - or stop - ICT projects across the government as needed	Other
Australia	✓	✓	☐	✓	☐	☐	☐
Austria	✓	✓	✓	✓			☐
Belgium	✓	✓	✓	✓	✓		✓
Canada	✓	✓	✓	✓			☐
Chile	✓	✓	✓				☐
Czech							✓
Denmark	✓	✓		✓			☐
Estonia	✓	✓	✓	✓			☐
Finland	✓	✓		✓			☐
France	✓		✓	✓			☐
Germany	✓						☐
Hungary	✓	✓	✓	✓			✓
Iceland	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Japan	✓	✓	✓	✓			☐
Korea	✓	✓	✓	✓			☐
Luxembourg	✓	✓	✓	✓		✓	☐
Mexico	✓	✓	✓	✓			☐
Netherlands							✓
New	✓	✓	✓	✓	✓	✓	☐
Norway	✓	✓					✓
Poland							☐
Slovenia	✓	✓	✓	✓			✓
Spain	✓	✓	✓				☐
Sweden	✓	✓					☐
Switzerland	✓	✓	✓	✓			☐
OECD25	**21**	**19**	**15**	**16**	**2**	**2**	**6**
Colombia	✓	✓		✓			☐
Latvia	✓	✓	✓		✓		☐

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalisation. The OECD is also at the forefront of efforts to understand and to help governments respond to new developments and concerns, such as corporate governance, the information economy and the challenges of an ageing population. The Organisation provides a setting where governments can compare policy experiences, seek answers to common problems, identify good practice and work to co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Union takes part in the work of the OECD.

OECD Publishing disseminates widely the results of the Organisation's statistics gathering and research on economic, social and environmental issues, as well as the conventions, guidelines and standards agreed by its members.

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
(42 2016 47 1 P) ISBN 978-92-64-26800-5 – 2017

OECD Digital Government Studies

Benchmarking Digital Government Strategies in MENA Countries

This series analyses trends in digital government policies and practices across OECD and partner countries. The reports provide advice on the use of digital technologies to make governments more agile, innovative, transparent and inclusive.

This report benchmarks digital government strategies in MENA countries against OECD standards and best practices. Using the OECD Recommendation of the Council on Digital Government Strategies as analytical framework, the report provides an in-depth look at the efforts made by Egypt, Jordan, Lebanon, Morocco, Tunisia and the United Arab Emirates to use digital technologies strategically to support broader policy objectives. New technologies can help foster economic value creation, make institutions more inclusive, improve competitiveness and promote effective decision-making in the public sector. This report also assesses the use of ICTs to strengthen trust in government through greater openness and engagement, and suggests how MENA countries can better co-ordinate and steer the digital transformation of the public sector.

Consult this publication on line at ***http://dx.doi.org/10.1787/9789264268012-en***.

This work is published on the OECD iLibrary, which gathers all OECD books, periodicals and statistical databases.
Visit ***www.oecd-ilibrary.org*** for more information.

OECD publishing
www.oecd.org/publishing

ISBN 978-92-64-26800-5
42 2016 47 1 P