

OECD Digital Government Studies

# Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste





OECD Digital Government Studies

# **Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste**

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, as well as any data 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 (2018), *Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste*, OECD Digital Government Studies, OECD Publishing, Paris.  
<https://doi.org/10.1787/9789264307131-en>

ISBN 978-92-64-30712-4 (print)  
ISBN 978-92-64-30713-1 (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 © Baseline Arts.

Corrigenda to OECD publications may be found on line at: [www.oecd.org/publishing/corrigenda](http://www.oecd.org/publishing/corrigenda).

© OECD 2018

---

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](mailto: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](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).

---

## *Foreword*

The Digital Government Regional Review Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste was undertaken to support the governments of Angola, Cabo Verde, Guinea-Bissau, Mozambique, Sao Tome and Principe and Timor-Leste in their shift from analogue government (paper-based administrative systems) and e-Government paradigms (digitised processes and services) to digital government. The review's policy recommendations provide insights on important policy areas that include:

- The use of digital technologies and solutions to enable core government functions.
- Governance frameworks and institutional set-ups.
- The use of policy levers to streamline ICT investment and contribute to more coherent and sustainable digital transformation of the public sector.
- The development and reinforcement of digital skills within the public sector.
- The reinforcement of an open and user-driven culture in the public sector.
- The promotion of integrated digital service delivery based on inclusive, multichannel approaches.

This review is the first cross-country comparative study on the digital transformation of the public sector in Sub-Saharan Africa. It is based on the analytical frameworks for digital government, open government data and data-driven public sector provided by the OECD Recommendation on Digital Government Strategies (2014), and on the extended work of the OECD Development Co-operation Directorate (DCD) in developing contexts.

Despite sharing the same language and having a similar cultural, legal and institutional legacy, African Portuguese-Speaking countries and Timor-Leste (PALOP-TL) have followed different pathways regarding the integration of digital technologies into government processes, policy making and the design and delivery of public services. The governments of PALOP-TL countries are facing the challenges of rapid technological change and rising citizen expectations for high-quality, convenient public services. These changes provide an opportunity for PALOP-TL countries to deliver development dividends for all, through the use of digital technologies to establish collaborative and citizen-driven approaches. As highlighted by the OECD Recommendation of the Council on Digital Government Strategies (2014), a digital transformation is not only a strategic driver for improving public sector efficiency and effectiveness, but can also create more open, transparent, innovative, participatory and trustworthy governments to ensure no one is left behind in the development process.

Angola, Cabo Verde, Guinea-Bissau, Mozambique, Sao Tome and Principe and Timor-Leste have made significant progress in recent years in using digital technologies to promote internal efficiency, simplify government procedures and improve public services. Nevertheless, in order to fully reap the benefits of technology to modernise core administrative functions, such as collecting revenues, monitoring expenditure and

managing the civil service, PALOP-TL countries must still make further progress in their digital government policies and practices.

Clear mandates, adequate institutional arrangements and effective policy levers, such as co-funding mechanisms, budget thresholds and business cases, are an important basis for supporting a coherent and sustainable digital transformation of the public sector supported by adequate political support. PALOP-TL countries are also encouraged to mobilise digital technologies to collaborate more systematically with citizens in policy making. Interoperability frameworks, data standards and digital identity systems can also support integrated, multichannel and inclusive digital service delivery approaches, and assist PALOP-TL countries to address their development divide.



**Prior Notice:** this review was funded by the Project of Support to Improvement in Quality and Proximity of Public Services of the African Portuguese-Speaking Countries and Timor-Leste (PASP PALOP-TL), a project co-financed by the European Union (EUR 5,000,000.00) under the 10th European Development Fund, and co-financed and implemented by Camões – Institute for Cooperation and Language, I.P. (EUR 1,000,000.00). Technical oversight of the project was provided by the Administrative Modernization Agency, I.P. (AMA, I.P.).

**Disclaimer of Liability:**

This publication was produced as part of the Project of Support to Improvement in Quality and Proximity of Public Services of PALOP and Timor-Leste (PASP / PALOP-TL). Its contents are the sole responsibility of its authors. Neither Camões, I.P nor any individual acting on behalf of the Camões, I.P is responsible for the use that may be given to the following information. The designations and presentation of the materials and data used in this document do not imply the expression of any opinion on the part of Camões, IP, Portuguese Cooperation or the Ministry of Foreign Affairs regarding the legal status of any country, territory, city or area, or authorities, as well as the expression of any opinion regarding the delimitation of its frontiers or boundaries. Reference to specific projects, programs, products, tools or services does not imply that these are supported or recommended by Camões, I.P., giving preference to others of a similar nature, which are not mentioned or publicized.

Contact: Camões - Institute of Cooperation and Language, I.P. | Ministry of Foreign Affairs | Avenida da Liberdade, 270, 1250-149 Lisbon, Portugal. +351 213 109 100 | [geral@camoes.mne.pt](mailto:geral@camoes.mne.pt)

Website Camões, I.P. : [www.instituto-camoes.pt](http://www.instituto-camoes.pt)

Website PASP / PALOP-TL: [www.pasp-paloptl.org](http://www.pasp-paloptl.org)

**Disclaimer of liability:**

This document has been prepared with the financial participation of the European Union. The opinions expressed in it do not necessarily reflect the official position of the European Union.



## *Acknowledgements*

This review was jointly prepared by the Development Co-operation Directorate (DCD) and the Directorate for Public Governance (GOV) of the OECD commissioned by Camões – Institute for Cooperation and Language, I.P., Ministry of Foreign Affairs, Portugal. The review is in the scope of the Project to Support the Quality Improvement and Proximity of Public Services of the African Portuguese-Speaking Countries and Timor-Leste (PASP PALOP-TL), which was co-financed by the European Union (through the 10th European Development Fund) and by Camões, I.P. It builds on the expertise of the OECD/DCD Global Policy and Partnerships Division on development co-operation policy and of the OECD/GOV Reform of the Public Sector Division on digital government policy.

The review was jointly led by Catherine Anderson, who heads DCD’s work on governance and development, and Barbara-Chiara Ubaldi, who heads GOV’s work on digital government, open government data and data-driven public sector. Strategic direction was provided by Nadine Gbossa, Head of Global Partnerships and Policies Division; Jorge Moreira da Silva, Director of DCD; Edwin Lau, Head of the Public Sector Reform Division in GOV; and Marcos Bonturi, Director of the Public Governance Directorate.

The report was co-authored by Tiago Matos Fernandes, an International Development Consultant within DCD, and João Ricardo Vasconcelos, a Digital Government Policy Analyst in the Public Sector Reform Division of GOV. Substantive written input and conceptual guidance was provided by Catherine Anderson and Barbara-Chiara Ubaldi.

Liv Gaunt and Elizabeth Zachary edited the manuscript. Raquel Paramo provided support with the production process. The Portuguese translation was completed by EURIdeas.

The OECD is grateful to the following public officials and focal points from Angola, Cabo Verde, Guinea-Bissau, Mozambique, Sao Tome and Principe and Timor-Leste:

- Angola – Miguel Cazevo, PASP’s national focal point, Director-General, and Anuarite Kassongo, Senior Counsellor, INFOSI – National Institute for the Promotion of the Information Society (Instituto Nacional de Fomento da Sociedade da Informação), Ministry of Telecommunications and Information Technologies.
- Cabo Verde – Luís Maximiano, PASP’s national focal point, Senior Counsellor, NOSI - Operational Unit for the Information Society (Núcleo Operacional da Sociedade de Informação).
- Guinea-Bissau – Edson Pereira, PASP’s national focal point, Coordinator, CEVATEGE – Centre for the Technological Valorisation and Electronic Governance (Centro de Valorização Tecnológica e Governação Electrónica), Presidency of the Council of Ministers.
- Mozambique - Sérgio Mapsanganhe, PASP’s national focal point, Deputy Director-General, INAGE - National Institute of Electronic Government (Instituto Nacional do Governo Electrónico), and Dulce Chilundo, PASP’s national focal point, Director-General, INTIC - National Institute of Information and Communication

Technologies (Instituto Nacional de Tecnologias de Informação e Comunicação), both institutions reporting to the Ministry of Science and Technology, Higher and Technical Professional Education.

- Sao Tome and Principe – Inocêncio Costa, PASP’s national focal point, president of the board of directors, and Soukheyne Neto, Senior Counsellor at the Department of Science and Innovation, INIC - Institute of Innovation and Knowledge (Instituto de Inovação e Conhecimento), Presidency of the Council of Ministers.
- Timor-Leste – Iriana Ximenes, PASP’s national focal point, National Technical Advisor to the Prime Minister’s Deputy Minister for Border Delimitation.
- This review would not have been possible without the support of:
- Luís Silva, Services Coordinator of the National Authorising Officer of Cabo Verde.
- Diogo Franco, general coordinator, and Emanuel Pereira, EDF expert technical assistant, UGP – Project Management Unit of PASP PALOP-TL – Project to Support the Quality Improvement and Proximity of Public Services of the African Portuguese-Speaking Countries and Timor-Leste.
- Pedro Oliveira, Head of the Bilateral Affairs Division, and Ana Rita Araújo Ferreira, project officer, Camões –Institute for Cooperation and Language, I.P., Ministry of Foreign Affairs, Portugal.
- Cláudia Gonçalves Barroso, Head of the International Relations Unit, and Tiago Mendonça, international relations officer, Administrative Modernization Agency, I.P. (AMA), Presidency of the Council of Ministers., Portugal.
- Carla Folgôa, International Cooperation Officer at the Delegation of the European Commission in Cabo Verde.

Finally, the OECD review team extends its gratitude to all the institutions and stakeholders interviewed during the fact-finding missions to the six countries.

## *Table of contents*

<b>Foreword</b> .....	<b>3</b>
<b>Acknowledgements</b> .....	<b>7</b>
<b>Acronyms</b> .....	<b>13</b>
<b>Executive summary</b> .....	<b>19</b>
Using digital technology to enable core government functions .....	19
Building the foundations for digital government .....	20
Delivering digital services in PALOP-TL countries .....	20
National and regional recommendations .....	20
<b>Chapter 1. Background</b> .....	<b>21</b>
Challenges and opportunities in the digital era .....	22
Digital transformation in the global context .....	22
Characteristics of the PALOP-TL region .....	30
Notes .....	44
References .....	47
<b>Chapter 2. Core government functions and digital solutions</b> .....	<b>51</b>
Ensuring core government functions .....	52
Mapping the needs: From upstream to downstream functions .....	52
Using digital solutions to enable the basic functioning of government and to improve government performance .....	53
Looking forward: National development plans and public administration reform strategies .....	54
Government upstream functions and digital solutions .....	56
Using digital technologies to deliver government downstream functions .....	67
Notes .....	72
References .....	73
<b>Chapter 3. Institutional foundations for a sound digital government ecosystem</b> .....	<b>75</b>
Policy frameworks for digital government .....	76
Institutional leadership and co-ordination .....	81
Mechanisms of co-ordination and culture of co-operation .....	90
Policy levers to streamline digital technology investment .....	90
Developing the key enablers .....	93
Digital skills for a sustainable digital government .....	95
Notes .....	96
References .....	98
<b>Chapter 4. Citizen-driven approaches for coherent and sustainable digital service delivery ....</b>	<b>101</b>
Openness, collaboration and value creation .....	102
Digital identity: A key enabler for the integrated development of digital government .....	107

Foundations for sound digital service delivery .....	109
Towards cross-border service delivery in the PALOP-TL region .....	115
Notes .....	117
References .....	119
<b>Recommendations and proposals for action .....</b>	<b>121</b>
Seizing the digital transformation of the public sector in each PALOP-TL country .....	121
Laying the foundations for a digital government roadmap in the PALOP-TL region .....	127
<b>Glossary of terms .....</b>	<b>129</b>

## Tables

Table 1.1. Sustainable development goals and the use of ICT .....	24
Table 1.2. Principles for digital development .....	27
Table 1.3. Net official development assistance received in 2016 (% of Gross National Income) .....	38
Table 1.4. PALOP-TL and countries classification .....	39
Table 1.5. PALOP-TL and the UN Human Development Index Report (2016) .....	39
Table 1.6. E-Government Development Index: Positions of the PALOP-TL countries .....	44
Table 2.1. References to digital government in national development plans and public sector reform strategies .....	56
Table 2.2. PFM electronic systems .....	59
Table 2.3. Interoperability framework in PALOP-TL countries .....	62
Table 3.1. Digital government strategies in the PALOP-TL region: Overview .....	78
Table 3.2. Digital Government Strategies in the PALOP-TL region: General assessment .....	80
Table 3.3. PALOP-TL co-ordination of digital government .....	83
Table 3.4. Digital government: Policy levers .....	91
Table 4.1. United Nations E-Participation Index: Positions of the PALOP-TL countries .....	104
Table 4.2. The path towards digital identity in the six PALOP-TL countries .....	108

## Figures

Figure 1.1. Percentage of households with Internet access (2017) .....	23
Figure 1.2. Internet use in Africa, by demographic and socio-economic characteristics, 2011-2012 .....	24
Figure 1.3. The path towards digital government .....	28
Figure 1.4. OECD Recommendation on Digital Government Strategies, 2014 .....	29
Figure 1.5. The path towards digital transformation in the PALOP-TL region .....	30
Figure 1.6. Pre-requisites for governments to ensure the success of long-term digital transformation processes (indicative list) .....	34
Figure 1.7. Assessing the political stability and institutional capacity to undertake prospective reforms (digital transformation) .....	35
Figure 1.8. GDP of PALOP-TL countries in 2016 (USD billion) .....	36
Figure 1.9. Annual GDP growth rate (%) in PALOP-TL countries (2005-2016) .....	36
Figure 1.10. Oil rents in Angola and Timor-Leste (% of GDP) .....	37
Figure 1.11. Adult literacy rate (at 15 years and over) in the PALOP-TL group (2005-2015) .....	40
Figure 1.12. Infant mortality rate (per 1 000 live births) in the PALOP-TL group (2005-2015) .....	41
Figure 1.13. Human Development Index trends in the PALOP-TL region (2003-2015) .....	41
Figure 1.14. PALOP-TL: Mobile cellular subscriptions (per 100 people) .....	42
Figure 1.15. Internet usage in PALOP-TL countries .....	43
Figure 2.1. Upstream and downstream core government functions .....	53

Figure 2.2. Indicative list of ICT used to support the administration of government in PALOP-TL countries .....	64
Figure 3.1. Governing the digital transformation of the public sector: Dimensions of analysis .....	76
Figure 3.2. Availability of digital government strategies in the PALOP-TL region .....	77
Figure 3.3. Leadership and institutional set ups in the PALOP-TL region .....	82
Figure 3.4. Digital government in Angola: Governance snapshot .....	85
Figure 3.5. Digital government in Cabo Verde: Governance snapshot .....	85
Figure 3.6. Digital government in Guinea-Bissau: Governance snapshot .....	86
Figure 3.7. Institutions for digital government in Mozambique .....	86
Figure 3.8. Digital government in Sao Tome and Principe: Governance snapshot .....	87
Figure 3.9. Digital government in Timor-Leste: Governance snapshot .....	87
Figure 3.10. Policy levers for coherent and sustainable digital government policies .....	91
Figure 3.11. Business cases and ICT procurement strategies in the PALOP-TL region .....	93
Figure 3.12. Requisites for effective key enablers .....	94
Figure 3.13. Digital skills for a digital government .....	95
Figure 4.1. Digital technologies for co-design and co-creation in PALOP-TL countries .....	103
Figure 4.2. Open government data strategies or policies in PALOP-TL countries .....	106
Figure 4.3. Open source software potential .....	107
Figure 4.4. Digital by default vs digital by design .....	110
Figure 4.5. Multichannel service delivery for development contexts .....	111

## Boxes

Box 1.1. Pathways to Government in PALOP-TL Countries .....	31
Box 1.2. Elections and political parties in PALOP-TL Countries .....	32
Box 2.1. Cabo Verde: Legislative and Parliamentary Information System (SILP) .....	55
Box 2.2. MCNET Single Electronic Window (Mozambique) .....	57
Box 2.3. State private network (Angola) .....	61
Box 2.4. IGRP - Integrated Government Resources Planning (Cabo Verde) .....	63
Box 2.5. IDE-CV Spatial Data Infrastructure (Cabo Verde) .....	66
Box 2.6. Digitisation of commercial registers: The case of RCCM-OHADA (Guinea-Bissau) .....	68
Box 2.7. The Liga Inan project (Timor-Leste) .....	70
Box 3.1. E-government strategies: What, why and how .....	77
Box 3.2. Mechanisms of leadership and co-ordination .....	82
Box 4.1. Openness and co-creation: The experience of the City Government of Sekondi Takoradi Metropolitan Assembly (Kenya) .....	102
Box 4.2. Transparency Portal in Timor-Leste .....	104
Box 4.3. The Monitoring System (MOPA) (Mozambique) .....	105
Box 4.4. The Mobile Citizen Houses (Casa do Cidadão Móvel) and the National Telemedicine Service in Cabo Verde .....	111
Box 4.5. Max Stahl Audiovisual Center (CAMSTL) in Timor-Leste .....	113
Box 4.6. Integrated School Management System in Sao Tome and Principe .....	114
Box 4.7. The six dimensions of digital government .....	115
Box 4.8. Facilitating cross-border services in Africa .....	116



## *Acronyms*

---

<b>AAAA</b>	Addis Ababa Action Agenda for financing development
<b>ACP</b>	African, Caribbean and Pacific Group of States
<b>ADI</b>	Independent Democratic Action (Acção Democrática Independente)
<b>AMA</b>	Administrative Modernization Agency, I.P. (Agência para a Modernização Administrativa), Presidency of the Council of Ministers, Portugal
<b>AMP</b>	Alliance for Change and Progress (Aliança para Mudança e Progresso)
<b>AMPETIC</b>	Mozambican Association of Information Technologies Companies and Professionals (Associação Moçambicana de Profissionais e Empresas de Tecnologias de Informação)
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>ASYCUDA</b>	Automated System for Customs Data
<b>BCEAO</b>	Central Bank of West African States
<b>CEVATEGE</b>	Centre for the Technological Valorisation and Electronic Governance (Centro de Valorização Tecnológica e Governação Electrónica), Government of Mozambique
<b>CICL</b>	Camões - Institute for Cooperation and Language, I.P. (Camões – Instituto da Cooperação e da Língua, I.P.), Ministry of Foreign Affairs, Portugal
<b>CCJA</b>	Common Court of Justice and Arbitration
<b>CMS</b>	Customs Management System
<b>CPLP</b>	Portuguese-Speaking Countries Community (Comunidade dos Países de Língua Portuguesa)

<b>CNRT</b>	National Congress for Timorese Reconstruction (Congresso Nacional para a Reconstrução de Timor-Leste)
<b>DAC</b>	Development Assistance Committee
<b>DCD</b>	Development Co-operation Directorate of the Organisation for Economic Co-operation and Development
<b>EU</b>	European Union
<b>eID</b>	Electronic Identity
<b>E-Leaders</b>	Working Party of Senior Digital Government Officials, Organisation for Economic Co-operation and Development
<b>e-SISTAFE</b>	Electronic State Financial Management System (Sistema Eletrónico de Administração Financeira do Estado)
<b>FRELIMO</b>	Front for the Liberation of Mozambique (Frente de Libertação de Moçambique)
<b>GDP</b>	Gross Domestic Product
<b>GNI</b>	Gross National Income
<b>GOV</b>	Directorate for Public Governance of the Organisation for Economic Co-operation and Development
<b>G2G</b>	Government to Government
<b>HDI</b>	Human Development Index
<b>ICT</b>	Information and Communication Technology
<b>IDE-CV</b>	Spatial Data Infrastructure of Cabo Verde
<b>IGRP</b>	Integrated Government Resources Planning
<b>IMF</b>	International Monetary Fund
<b>INAGE</b>	National Institute of Electronic Government (Instituto Nacional do Governo Electrónico), Government of Mozambique



<b>INFOSI</b>	National Institute for the Promotion of the Information Society (Instituto Nacional de Fomento da Sociedade da Informação), Government of Angola
<b>INIC</b>	Institute of Innovation and Knowledge (Instituto de Inovação e Conhecimento), Government of Sao Tome and Principe
<b>INTIC</b>	National Institute of Information and Communication Technologies (Instituto Nacional de Tecnologias de Informação e Comunicação), Government of Mozambique
<b>ITU</b>	International Telecommunication Union
<b>JUE</b>	Single Electronic Window (Janela Única Eletrónica)
<b>LDCs</b>	Least Developed Countries
<b>MCNet</b>	Mozambique Community Network
<b>MENA</b>	Middle East and North Africa
<b>MpD</b>	Movement for Democracy (Movimento para a Democracia)
<b>MPLA</b>	Popular Movement for the Liberation of Angola (Movimento Popular de Libertação de Angola)
<b>NAOSU</b>	National Authorizing Office Supporting Unit
<b>NDP</b>	National Development Plan
<b>NGO</b>	Non-Governmental Organisation
<b>NOSI</b>	Operational Unit for the Information Society (Núcleo Operacional da Sociedade de Informação)
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OGC</b>	Open Geospatial Consortium
<b>OHADA</b>	Organisation for the Harmonization of Business Law in Africa (Organisation pour l'Harmonization en Afrique du Droit des Affaires)
<b>PaaS</b>	Platform as a Service

<b>PAICV</b>	African Party for the Independence of Cabo Verde (Partido Africano para a Independência de Cabo Verde)
<b>PALOP-TL</b>	African Portuguese-Speaking countries and Timor-Leste (Países Africanos de Língua Oficial Portuguesa e Timor-Leste)
<b>PASP PALOP-TL</b>	Project to Support the Quality Improvement and Proximity of Public Services of the African Portuguese-Speaking Countries and Timor-Leste
<b>PEFA</b>	Public Expenditure and Financial Accountability
<b>PFM</b>	Public Financial Management
<b>PGC</b>	Public Governance Committee of the Organisation for Economic Co-operation and Development
<b>PREA</b>	Administrative Reform Program (Programa de Reforma Administrativa)
<b>PSRS</b>	Public Sector Reform Strategies
<b>RCCM</b>	Trade and Property Credit Register (Registre du Commerce et du Crédit Mobilier)
<b>SAFE-e</b>	Integrated State Finance Management System
<b>SDGs</b>	Sustainable Development Goals
<b>SIGFE</b>	Integrated State Financial Management System (Sistema Integrado de Gestão Financeira do Estado)
<b>SIGFIP</b>	Integrated Public Financial Management System (Sistema Integrado de Gestão das Finanças Públicas)
<b>SIGHRAP</b>	Integrated Human Resources Management System of the Public Administration (Sistema Integrado de Gestão de Recursos Humanos da Administração Pública)
<b>SIGOF</b>	Integrated Online Budget Management System (Sistema Integrado de Gestão Orçamental e Financeira)
<b>SIIGAT</b>	Integrated Territorial Administration Information and Management System (Sistema Integrado de Informação e Gestão de Administração do Território)
<b>SILP</b>	Legislative and Parliamentary Information System (Sistema de Informação Legislativa e Parlamentar)

<b>SIM</b>	Municipal Information System (Sistema de Informação Municipal)
<b>UGP</b>	Project Management Unit of PASP PALOP-TL – Project to Support the Quality Improvement and Proximity of Public Services of the African Portuguese-Speaking Countries and Timor-Leste (Unidade de Gestão de Projeto)
<b>UN</b>	United Nations
<b>UN/DESA</b>	United Nations Department of Economic and Social Affairs
<b>UNDP</b>	United Nations Development Programme
<b>UNICEF</b>	United Nations Children’s Fund
<b>WB</b>	World Bank



## *Executive summary*

Digital technologies can improve lives by boosting productivity and job creation, enhancing democratic governance and offering opportunities for more collaborative and participatory government. African Portuguese-Speaking Countries and Timor-Leste (PALOP-TL) governments, as elsewhere have made significant progress in recent years in using digital technologies to promote internal efficiency, simplify government procedures and improve public services. Nevertheless, in order to fully reap the benefits of technology and modernise their core administrative capabilities, such as collecting revenues, monitoring expenditure and managing the civil service, PALOP-TL countries must still make further progress in their digital government policies and practices. Specifically, PALOP-TL governments are encouraged to move beyond the digitisation of internal government processes to truly transform the public sector using citizen-driven approaches.

The experience of PALOP-TL countries has shown that digital transitions in developing countries are often disordered and subject to reversals. Nonetheless, they tend to towards three principal areas of investment: 1) digital solutions for the delivery of core government functions; 2) foundations for a digital government transformation; and 3) digital services for citizens and businesses.

Although PALOP-TL countries share common bonds of history, social and political change, and similarities in their structures of government, no two countries are at the same stage of digital government development. Progress is heavily influenced by the degree of political stability and institutional coherence found in each country. One set of countries (Guinea-Bissau, Sao Tome e Principe and Timor-Leste) are at an earlier stage of administrative development, and more heavily reliant on e-government approaches to enable the coherent functioning of government. Others (Angola, Cabo Verde and Mozambique) are more advanced and, in some cases poised to make a more comprehensive transition towards digital government. Despite this variation among countries, PALOP-TL face common constraints in realising digital government, ranging from problems of poor-quality infrastructure to institutional incoherence and low levels of digital literacy.

### **Using digital technology to enable core government functions**

The experiences of PALOP-TL in the use of digital solutions to enable the delivery core government functions, are widely varied. The governments of Guinea-Bissau, Sao Tome and Principe and Timor-Leste are using digital solutions to enable the execution of core tasks around revenue collection and management, human resource audits, and basic health and education services delivery. By contrast, the governments of Angola, Cabo Verde and Mozambique are continuing to work to address persisting gaps (for example, around inter-governmental communications), and tend to be more focused on enhancing administrative efficiency, namely by addressing problems of systems interoperability.

## Building the foundations for digital government

The use or adoption of information and communication technology (ICT) in public administration has occurred more rapidly and in more sustainable ways in countries where the digital transformation processes is led by or supported at the highest level of government with horizontal co-ordination and institutional arrangements, such as in Cabo Verde. However, even in countries where the digital transformation is more advanced, some of the key enablers and policy levers that are considered preconditions for ICT policy implementation and digital government have not yet been adopted.

## Delivering digital services in PALOP-TL countries

Finally, progress towards digital service delivery tends to be uneven and yet this is also an area in which some PALOP-TL countries are most clearly innovating. With the exception of Guinea-Bissau, all PALOP-TL countries have established public data centres and/or data rooms that are capable of hosting, storing and managing information from different government institutions and private organisations. At the same time, PALOP-TL governments are digitising their public records and working to establish a single identity system in the medium term. These efforts, along with significant investment in developing interoperability frameworks and legal and technological measures, have yielded further innovations, such as an online one-stop shop (Porton di nos Ilha in Cabo Verde) and transactional portals (Single Electronic Window in Mozambique).

## National and regional recommendations

The policy recommendations detailed in this report identify a set of priorities ranging from the formulation of digital government strategies where they do not yet exist (Guinea-Bissau) to more demanding measures, such as the development of online public services made accessible through digital authentication applications (Cabo Verde). They also set out medium to long term goals, including the development of interoperability platforms based on the state's private network (Angola), the adoption of multi-channel policies for service delivery (Mozambique), and strategies to encourage the uptake of the single identity card (Timor-Leste).

The co-operation among PALOP-TL national digital government agencies has led to a modest number of regional initiatives that could be further developed and expanded, for example, through the creation of regional digital government standards, or joint programmes for knowledge and skills development. This regional grouping should continue to serve as a source of mutual support and inspiration.

In the long term, a regional network of mutual learning and support for digital government, based on a common set of tools and actions, could not only enable and sustain effective digital government transitions, but also create the necessary conditions for the development and provision of regional services. Such services could include a PALOP-TL single digital window or cross-border services for business creation.

Given the close economic, social, cultural and institutional ties among the six countries, the development of PALOP-TL cross-border digital services could lead to further co-operation among the public sectors to support economic growth and social development in the region.

## Chapter 1. Background

*This chapter presents the situation of digital government in the context of developing countries, in particular, the African Portuguese-Speaking Countries and Timor-Leste (PALOP-TL) region. It assesses the major initiatives, programmes and principles on digital government that have been driving international organisations and multilateral donors in recent years. It maps the potential pathways that could help PALOP-TL countries shift from e-government to digital government systems, in light of the most recent body of learning on digital transformation (including the OECD Recommendation of the Council on Digital Government Strategies). Finally, it reviews the political stability, institutional quality and economic potential of each of the PALOP-TL countries, with reference to the most relevant digital economy, development and society indicators to better understand the potential for PALOP-TL countries to transform their digital and development capacities.*

## Challenges and opportunities in the digital era

In today's world, various technologies have completely transformed the way we live and work<sup>1</sup>. This transformation is not merely a prolongation of the third industrial revolution, characterised by the use of information technology and electronics to automate production<sup>2</sup>, but rather a distinct era, where the speed of current breakthroughs has no historical precedent as it is evolving at an exponential pace and heralding entire systems of production, management and government (Schwab, 2016). The reason for this is that we live in an increasingly interconnected and multifaceted world where new technological developments lead to continuously improving and newer technology.

However, the enthusiasm generated around the potential to raise global income levels and improve the quality of life of populations around the world through the enduring effects of digital transformation is often cooled by the recognition that digital solutions can also generate inequality and insecurity. Automation is likely to replace less qualified labour throughout the economy in the long term. In addition, the development and use of new digital technologies is also a challenge to governments' ability to protect citizens' data and safeguard their privacy. Cybersecurity is a major challenge to digital transformation, which fortunately has been countered by breakthrough approaches to governance that rely on cryptographic methods, such as blockchain.

Notwithstanding the above, it is recognised that new digital solutions will increasingly enable citizens to engage with governments, voice their opinions, co-ordinate their efforts and even circumvent the supervision of public authorities to such an extent that governments will progressively "face pressure to change their approach to public engagement and policy making, as their central role of conducting policy diminishes owing to new sources of competition and the redistribution and decentralisation of power that new technologies make possible" (Schwab, 2016).

## Digital transformation in the global context

The progressive integration of digital technologies (e.g. cloud computing, social media, mobile technology, and blockchain) into the everyday lives of citizens, businesses and public sectors is changing the administrative capabilities of government and augmenting its ability to create and deliver public goods and value. Countries at all levels of development are exploring the benefits of digital technologies to enable or improve public sector performance and the quality of services in progressively ambitious ways, contributing to an expansion of citizen trust in government. It is also raising citizen expectations of public services delivery, which brings attendant risks for countries with more limited administrative and institutional capabilities.

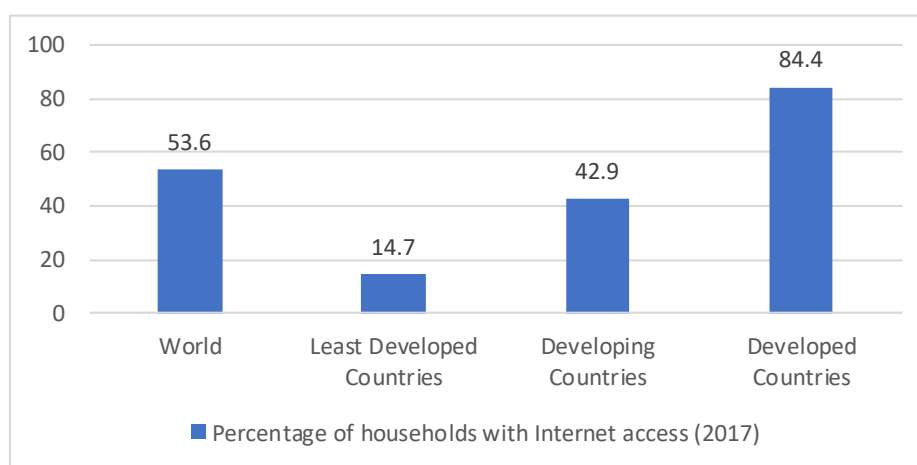
Digital technologies and services can enable inclusive<sup>3</sup> and sustainable growth, the responsive delivery of public services, and governance improvements. They can offer opportunities for more collaborative and participatory relationships that allow relevant stakeholders (i.e. citizens, business and non-governmental organisations) to actively shape political priorities, collaborate in the design of public services and participate in their delivery, which provides more coherent and integrated solutions to complex challenges (OECD, 2014). They can also provide a catalyst for improving lives, for example, by boosting productivity and job creation, empowering women and girls, and enhancing democratic governance and transparency (European Commission, 2017). Given this potential, enabling the digital transformation of the public sector through citizen-driven



approaches has fast become a leading objective of developed and developing country governments (World Bank, 2016a).

The World Bank’s “World Development Report 2016: Digital Dividends” shows that digital technologies, primarily mobile phones and the Internet, have contributed to considerable growth. In developing countries, it is estimated that a 10% increase in high-speed internet connections, for instance, produces an average 1.4% increase in economic growth. Despite this potential, many developing countries are yet to realise the full benefits of digital technologies in meeting their socio-economic priorities and are unable to progress their own digital transformation due to the development constraints that they face. These constraints are not readily “fixed” or circumvented through blueprint plans, one-off events or one-size-fits-all strategies (Hanna, 2016). Despite efforts made to render information and communication technology (ICT) widely available (more than half of the world’s population in 2017 had access to the Internet), the penetration rate in the least developed countries was only 14.7% (Figure 1.1).

**Figure 1.1. Percentage of households with Internet access (2017)**

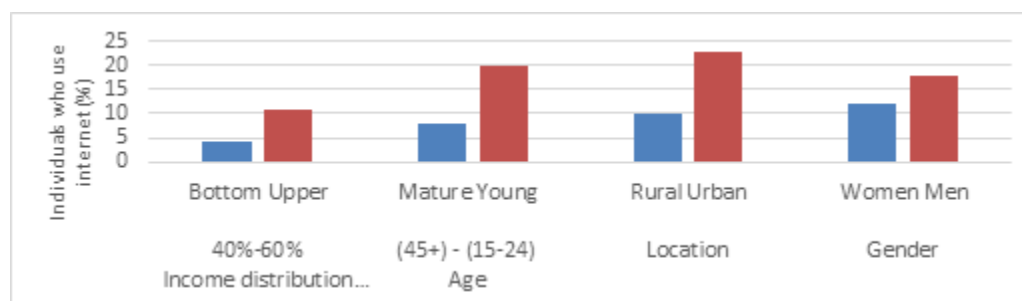


Source: ITU (2017), Facts and Figures 2017, Geneva, [www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf](http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf).

Internet access continues to be prohibitively expensive in many developing countries due to the lack of adequate ICT infrastructure or the absence of the regulatory frameworks needed to promote competitive broadband telecommunication services (ITU, 2017). In most developing countries, mobile broadband is more affordable than fixed broadband services. However, in 2017, despite high growth rates in developing countries and in least developed countries (LDCs), there were twice as many mobile broadband subscriptions per 100 inhabitants in developed countries than in developing countries, and four times as many in developed countries than in LDCs. Mobile broadband prices constitute more than 5% of gross national income (GNI) per capita in most LDCs and are therefore unaffordable for the majority of the population. Developing countries also have lower rates of high speed internet penetration than developed economies, with penetration rates at 6% (1.6% excluding China) and 24%, respectively (ITU, 2017).

The divide within countries is also wide, particularly for mobile broadband networks and internet use, which cover 84% of the global population but only 67% of the global rural population. The divide is also evident when considering other factors, such as income distribution, age, location (rural/urban) and gender (Figure 1.2).

**Figure 1.2. Internet use in Africa, by demographic and socio-economic characteristics, 2011-2012**



*Note:* Based on research ICT Africa surveys - various years; the chart shows a simple average for 12 countries.  
*Source:* World Bank (2016a), World Bank. 2016. World Development Report 2016: Digital Dividends. Washington, DC, [www.worldbank.org/en/publication/wdr2016](http://www.worldbank.org/en/publication/wdr2016).

Despite these constraints, the evidence points to the potential for a digital transformation in developing countries. For example, more households in developing countries (on average 8 out of 10) have mobile phones than have access to electricity or clean water (European Commission, 2017).

### *Sustainable development goals (SDGs) and digital government*

External actors – private sector investors, multilateral organisations, bilateral actors – play an important role in supporting the digital transformation in developing countries. The 2030 Agenda for Sustainable Development (including its 17 sustainable development goals) do not establish a separate target for digital government, but rather, envisage the use of ICT as both a lever and an accelerator in the promotion of the SDGs. Specific reference is also made to digital technologies in the context of several specific SDGs, as shown in Table 1.1.

**Table 1.1. Sustainable development goals and the use of ICT**

SDGs	Benefits of ICT
Health (SDG 3)	E-health applications quickly transmit data between medical units and also provide the opportunity for rural patients to benefit from remote diagnosis.
Education (SDG 4)	E-teaching and e-learning provide for flexibility and the opportunity to access teaching materials provided by leading education institutes.
Gender equality (SDG 5)	New communication channels enhance women's participation in the workforce and everyday life and provide access to education, finance and social networks.
Jobs and growth (SDG 8)	The generation of new online services contributes to job creation.
Environment and climate change (SDGs 13, 14 and 15)	Digital technologies provide global data on weather, water flows, forest reserves oceans, seas and climate.
Peace, justice and strong institutions (SDG 16)	Digital technologies can enable registration of children at birth, promote access to public information, and improve transparency of public institutions, thus improving access, inclusiveness and citizen's trust in authorities.

*Source:* United Nations (2015), Transforming our World: the 2030 Agenda for Sustainable Development, <https://sustainabledevelopment.un.org/post2015/transformingourworld>. European Commission (2017). Digital4Development: mainstreaming digital technologies and services into EU Development Policy, [https://ec.europa.eu/europeaid/sites/devco/files/swd-digital4development\\_part1\\_v3.pdf](https://ec.europa.eu/europeaid/sites/devco/files/swd-digital4development_part1_v3.pdf).

Besides the SDGs set by the 2030 Agenda for Sustainable Development, the United Nation's (UN) Addis Ababa Action Agenda for financing development (AAAA)<sup>4</sup>, launched in 2015, makes explicit reference to the promotion of ICT, access to technology for all, and social innovation, and recognises the role of ICT as a mechanism for innovation. To this end, the Addis Agenda commits to:

- Promote the development and use of ICT, particularly in LDCs, landlocked developing countries and small island developing states (including rapid universal and affordable access to the Internet).
- Facilitate accessible technology for persons with disabilities and promote access to technology and science for women, youth and children.
- Promote social innovation to support social well-being and sustainable livelihoods.

In addition, the Addis Agenda establishes four SDG indicators on ICT infrastructure as a basis to fulfil commitments on the development and use of ICT:

- Proportion of population covered by a mobile network, by technology (9.c).
- Proportion of individuals who own a mobile telephone, by sex (5.b).
- Fixed Internet broadband subscriptions per 100 inhabitants, by speed (17.6.2).
- Proportion of individuals using the Internet (17.8)<sup>5</sup>.

### *Multilateral strategies for digital transformation*

Notwithstanding a positive evolution in the access and affordability of Internet services, the ambitious target set by SGD 9 to "significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020" presents an enormous challenge for developing country governments. Collaborative action on the part of government, the entrepreneurial sector, and the development community will be required to reach this target and bridge the digital divide.

According to the World Development Report 2016: Digital Dividends, "digital technologies have boosted growth, expanded opportunities, and improved service delivery. Yet their aggregate impact has fallen short and is unevenly distributed. The remaining digital divide needs closing for digital technologies to benefit everyone everywhere, especially regarding internet access. (...) To get the most out of the digital revolution, countries also need to work on the "analogue complements" – by strengthening regulations that ensure competition among businesses, by adapting workers' skills to the demands of the new economy, and by ensuring that institutions are accountable".

Most multilateral agencies, such as the World Bank<sup>6</sup> and the European Union<sup>7</sup>, have been embracing this vision by adopting intervention strategies that simultaneously seek to expand digital connectivity in developing countries (for example, through financing broadband infrastructure and supporting information technology industries, or by enabling the right policy and regulatory frameworks for a competitive ICT environment) and to develop and mainstream the use of digital platforms and solutions through digitalisation in priority sectors (education, health, registers, etc.). Their final goal is to help partner countries harness the benefits of digital technologies and reduce the digital divide.

In addition, several OECD Member States (e.g. Belgium, Estonia, France, Germany, the United Kingdom, Finland, the Netherlands and Sweden) have recognised the potential of

digital solutions both in terms of achieving the sustainable development goals and connecting markets and industry in a win-win situation (European Commission, 2017). Accordingly, they have published, or are in the process of publishing, digital strategies for development. The US Department of State "Global Connect Initiative", launched in 2016, is pledging to connect 1.5 billion people to the Internet by 2020, as already agreed in the 2014 International Telecommunications Union Connect 2020 agenda. At the same time, digital strategies for development began to be addressed by the World Economic Forum's "Internet for all" initiative ([www.weforum.org/projects/internet-for-all](http://www.weforum.org/projects/internet-for-all)).

Despite the significant efforts of the donor community to tackle and accelerate the digital transformation of developing countries, their strategies have mainly been designed to foster the use of ICT by governments as a tool to achieving better government. Accordingly, most funding has been channelled towards the development of digital infrastructures (e.g. telecommunication networks) and introducing digital technologies into public administrations in order to support the digitalisation of public services (registries, schools, hospitals, etc.). In other words, multilateral organisations have been supporting the design and implementation of turnkey e-government strategies, rather than adopting "more strategic approaches for a use of technology that spurs more open, participatory and innovative governments" (OECD, 2014).

This excessive focus on the use of technology to support government processes is a missed opportunity to set up more open approaches to policy making and public service delivery and to support more collaborative relationships that allow relevant stakeholders within developing countries to actively participate in the development of political priorities.

However, it should be pointed out that in 2015, a large group of development organisations<sup>8</sup> endorsed the Principles for Digital Development – a set of nine guidelines established to promote effective practices in technology-enabled programmes for international development and co-operation<sup>9</sup>, and which are based on a vision that goes far beyond the use of technologies for better provision of public services. These principles are intended as neither static nor compulsory, but rather represent a set of organic guidance intended to help practitioners succeed in applying digital technologies in development programmes.

**Table 1.2. Principles for digital development**

Principles	Description
Design with the user	User-centred design starts with getting to know the people being designed for through conversation, observation and co-creation.
Understand the existing ecosystem	Well-designed initiatives and digital tools consider the particular structures and needs that exist in each country, region and community.
Design for scale	Achieving scale requires adoption beyond an initiative's pilot population, and often necessitates securing funding or partners that take the initiative to new communities or regions.
Build for sustainability	Building sustainable programmes, platforms and digital tools is essential to maintain user and stakeholder support, as well as to maximise long-term impact.
Be data driven	When an initiative is data driven, quality information is available to the right people when they need it, and they use the data to take action.
Use open standards, open data, open source, and open innovation	An open approach to digital development can help to increase collaboration in the digital development community and avoid duplicating work that has already been done.
Reuse and improve	Reusing and improving is about taking the work of the global development community further than any organisation or programme can do alone.
Address privacy and security	Addressing privacy and security in digital development involves careful consideration of which data are collected and how data are acquired, used, stored and shared.
Be collaborative	Being collaborative means sharing information, insights, strategies and resources across projects, organisations and sectors, leading to increased efficiency and impact.

*Source:* Principles for Digital Development (2018), Principles for Digital Development, <https://digitalprinciples.org/principles/>.

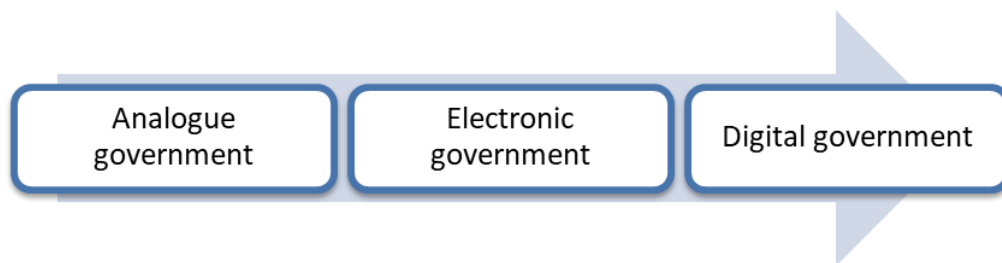
Waugaman, Adele (2016), From Principle to Practice: Implementing the Principles for Digital Development, The Principles for Digital Development Working Group, Washington, DC [https://digitalprinciples.org/wp-content/uploads/From\\_Principle\\_to\\_Practice\\_v5.pdf](https://digitalprinciples.org/wp-content/uploads/From_Principle_to_Practice_v5.pdf).

There lacks a common policy framework similar to the existing Council Recommendation for OECD countries to guide digital transformations in developing country contexts<sup>10</sup>. Although the range of programmes and countries benefiting from e-government or digital government is highly diverse, the body of existing lessons learned tends to be derived from a multiplicity of ad hoc digital government strategies, programmes and projects that show uneven results. Given this current policy gap, the OECD Council Recommendation and the findings of this report constitute an important contribution to this field of work.

### ***The OECD Recommendation on Digital Government Strategies***

In July 2014, OECD member countries, through the OECD Council, formally adopted a recommendation “that governments develop and implement digital government strategies” to assist and guide them to achieve digital transformation. The OECD Recommendation emphasises the crucial contribution of digital technologies as a strategic driver to create open, participatory and trustworthy public sectors, to improve social inclusiveness and government accountability, and to bring together government and non-government actors and develop innovative approaches to contribute to national development and long-term sustainable growth. The recommendation of the Council on Digital Government Strategies (OECD, 2014) is the first international legal instrument on digital government and has 44 Adherents, including 9 non-OECD countries. The purpose of the recommendation is to provide guidance to governments seeking to shift from analogue and e-government models to digital government.

**Figure 1.3. The path towards digital government**

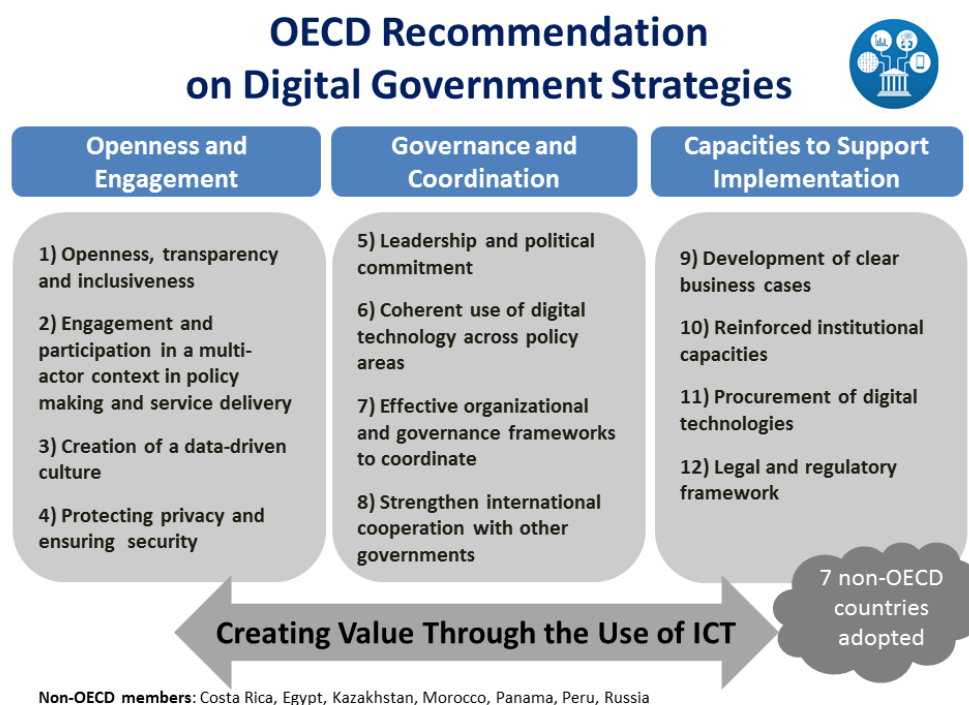


*Source:* Adapted by Authors, from OECD (2014), Recommendation on Digital Government Strategies, [www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm](http://www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm).

Governments using analogue systems focus more on internal systems and procedures than on the needs of the end user. Governments adopting e-government strategies focus on using ICT to digitise systems and procedures, and centre their service delivery on the end user. Digital government, the final stage of digital transformation, prioritises public value creation as the core of digital government strategies by adopting an open and user-driven approach.

In recent years, digital strategies for the public sector have been guiding governments to take more efficient and responsive administrative action and ensure accountability towards their citizens. However, digital technologies can also catalyse economic growth, innovation and social cohesion and development. It can enable collaborative and participatory engagement that allows citizens, businesses and non-governmental organisations “to actively shape political priorities, collaborate in the design of public services and participate in their delivery, providing more coherent and integrated solutions to complex challenges” (OECD, 2014). To facilitate this approach, the OECD Recommendation highlights the shift from “government’s anticipating citizens’ and business’s needs (citizen-centric approaches) to citizens and businesses determining their own needs and addressing them in partnership with governments (citizen-driven approaches)”. In simple terms, this constitutes a paradigm shift from the e-government to digital government. The recommendation creates a series of provisions or principles to: engage citizens and enable open government to secure and maintain public trust, improve governance and co-ordination for better collaboration and results, and strengthen capabilities to achieve a return on digital investments (Figure 1.4).

Figure 1.4. OECD Recommendation on Digital Government Strategies, 2014



Source: OECD elaboration based on OECD (2014), Recommendation on Digital Government Strategies, [www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm](http://www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm).

This report adopts the recommendation of the Council as a guiding frame of reference, and combines the learning or guidance established within the recommendation with the large body of recent learning on building core government functions in developing countries.

### *Ensuring the digital transformation of the PALOP-TL region*

Citizen-driven digital services delivery (i.e. the ability to provide digital services to users through a multichannel approach, combining face-to-face services with web portals, internet applications, mobile platforms, online banking services, etc.) driven by user needs and demands is a core element of the digital transformation. Such an outcome can only be achieved in contexts where non-governmental organisations, businesses, citizens' associations and individuals take part in the processes of co-production, co-delivery and co-value creation (OECD, 2014).

In line with the recommendation, a series of instruments or “enablers”, such as interoperability frameworks, data standards and digital identity systems, can be used to support coherent, efficient and sustainable digital transformation of the public sector. However, the digital transformation of public administration requires that governments are capable of exercising a minimum set of executive functions in administrative domains: public financial management; administration of the centre of government; management of the civil service; and local government and downstream public services delivery.

**Figure 1.5. The path towards digital transformation in the PALOP-TL region**



The ability of developing country governments to undertake core administrative functions (such as collecting revenues, monitoring expenditure, processing statistical data or managing the civil service) is an essential precondition for growth, development and change, and constitutes the foundations for a transition from analogue and e-government systems to the creation of a digital government. In the absence of these core government capabilities, an effective digital transformation could not be achieved or sustained, particularly in developing countries.

The theory of change adopted for this body of work asserts that the pathway of digital evolution or transition in developing or transition countries is messy, non-linear and subject to reversals. Although the pathways of digitisation or digital government reform may diverge across different developing country contexts, successful processes of digitisation tend to exhibit three common building blocks or elements: the use of digital solutions for the delivery of core government functions; establishing the foundations or key enablers for a digital government transition; and developing digital services for citizens and businesses.

This report examines each of these components in turn, looking at the role of digital technologies in the delivery of core government functions, the preconditions or foundations for digital government, and the level of development of digital services delivery in the PALOP-TL region. Recognising that each of these components is mutually complementary and need not happen in sequence (some elements could take place simultaneously), this report also seeks to identify the links or connections between these different elements, and any specific policy decisions or actions that may have led to particular results or outcomes.

### Characteristics of the PALOP-TL region

The size of a country's economic potential, together with its level of political stability<sup>11</sup> and institutional quality and capability<sup>12</sup>, constitute important parameters through which to filter analysis, as these will heavily influence, if not determine, the trajectory of a country's digital development. The physical, spatial and social attributes of a country are also important.

Despite geographical discontinuity and different levels of development, the PALOP-TL region shares a strong identity based on a common history and language. The region's longstanding co-operation, which started in the 1970s, covers a wide range of mutual interests across cultural, economic, social and political domains. Timor-Leste joined in 2007, rendering the new acronym for the group – PALOP-TL<sup>13</sup>.

PALOP-TL co-operation has also facilitated the integration as members of all these countries into the Community of Portuguese-Speaking Countries (CPLP), which was created in 1996. The permanent co-operation framework within the CPLP has contributed



to the PALOP-TL group evolving from a shared cultural heritage to a geopolitical and economic community.

Despite sharing the same language and having common cultural, legal and even institutional characteristics, PALOP-TL countries also widely differ. The size of their respective populations varies: from 200 000 citizens in Sao Tome and Principe to 28 million in Mozambique. There are 56.5 million citizens across the PALOP-TL community or region in total. Their geographical distinctions also stand out: three of these countries (Cabo Verde, Sao Tome and Principe and Timor-Leste) are island states, and one is not located in Africa (Timor-Leste); Angola and Mozambique are much larger in size than the other countries.

### *The political outlook of PALOP-TL countries*

All PALOP-TL countries have adopted multiparty political systems, but their political contexts widely differ. More than half have seen governments formed by different parties over time (Cabo Verde, Guinea Bissau, Sao Tome and Principe and Timor-Leste), whereas Angola and Mozambique have been governed by the same ruling parties (MPLA – Popular Movement for the Liberation of Angola and FRELIMO – Front for the Liberation of Mozambique) since the first multiparty elections held in 1994 and 2008, respectively. There is also relative political stability in each country, with the exception of Guinea-Bissau, where six different governments have successively been sworn into office since elections in 2014.

Moreover, all PALOP-TL countries share similar semi-presidential constitutional systems, although over the years they have undergone changes towards more parliamentary (Cabo Verde and Sao Tome and Principe) or presidential-centered models (Angola, Guinea-Bissau, Mozambique and Timor-Leste), depending on the political context of each country (Box 1.1).

#### **Box 1.1. Pathways to Government in PALOP-TL Countries**

In Angola, the 2010 Constitution established a new system, according to which the head of the party winning the most seats becomes the president. Conversely, in Mozambique, the head of state (the president of the republic) is elected by direct popular vote. However, in both countries, the president appoints the prime minister and remains the head of the executive. In contrast, in Cabo Verde, Guinea-Bissau and Sao Tome and Principe, the president of the republic does not have the power to appoint the head of government according to his will, but rather according to the results of the legislative elections. In addition, the president has no executive powers. Finally, in Timor-Leste, although the prime minister is appointed by the most voted party or by the alliance parties with parliamentary majority, the ministers are nominated by the president of the republic, following the proposal of the prime minister.

*Source:* Adapted by Authors, from Legis-Palop+TL (2018), Base de Dados Jurídica Oficial, [www.legis-palop.org](http://www.legis-palop.org).

Overall, experience has shown that, with the exception of Guinea-Bissau (where several governments have successively been dismissed by the head of state based on a “presidentialist” interpretation of the constitution), the formal constitutional models

adopted in PALOP-TL countries have not significantly impacted political stability given the divergent paths that such models have followed in each country.

In addition to the low frequency of incidents of serious political violence, the political stability of PALOP-TL countries can be assessed by the extent to which elections are generally considered free and fair by the international community (occasional allegations of electoral fraud by opposition parties in some countries are often dismissed due to a lack of evidence) (Box 1.2).

### **Box 1.2. Elections and political parties in PALOP-TL Countries**

In Angola, the 2017 elections brought President João Gonçalves Lourenço into office, Angola's first change of president in 38 years. The ruling party (MPLA), led by Lourenço, received 61% of the vote, thus helping to maintain political stability since the end of the 27-year civil war in 2002. In Cabo Verde, the latest round of parliamentary elections was held in March 2016, resulting in an orderly and constitutional change of government, following the victory of the opposition party Movement for Democracy (MpD), thus succeeding to an African Party for the Independence of Cabo Verde (PAICV) government which had been in power for 15 years. In Mozambique, despite occasional instances of civil unrest (associated with increases in the cost of staple foods and basic goods) and the growing demand for social accountability (boosted by the emergence of civil society interest groups), FRELIMO, the ruling party, has been in power since the first multi-election held in 1994. In Sao Tome and Principe, the Acção Democrática Independente party (ADI) currently controls both the legislature and the presidency (new legislative elections are scheduled to occur in October 2018). More recently, early parliamentary elections were held in Timor-Leste: the Alliance for Change and Progress (AMP), a coalition of three opposition parties led by Xanana Gusmão's National Congress for Timorese Reconstruction (CNRT), won an absolute majority of 34 of the 65 seats in Parliament. Guinea-Bissau can somehow be considered an outlier in the context of the PALOP-TL region: since independence, four successful coups have been recorded in Guinea-Bissau, with another 16 coups attempted, plotted, or alleged (World Bank, 2016b).

*Sources:*

World Bank (2017a), Country overview (Angola), Washington, DC  
 World Bank (2017b), Country overview (Cabo Verde), Washington, DC  
 World Bank (2017c), Country overview (Guinea-Bissau), Washington, DC  
 World Bank (2017d), Country overview (Mozambique), Washington, DC  
 World Bank (2017e), Country overview (Sao Tome and Principe), Washington, DC  
 World Bank (2017f), Country overview (Timor-Leste), Washington, DC  
[www.worldbank.org/en/](http://www.worldbank.org/en/)

All PALOP-TL countries are unitary, non-federal states. However, in some countries, municipalities have been created and play an important role in the central-local political dynamics (Cabo Verde, Mozambique and Sao Tome and Principe). In other countries, local authorities are designated by the executive (Angola, Guinea-Bissau and Timor-Leste), although democratic decentralisation is envisaged in the political agenda of the vast majority of PALOP-TL countries.

In general, the rights of minorities, freedom of the press and the rule of law vary greatly from country to country. According to the report "Freedom in the World 2018" (Freedom House, 2018), only Cabo Verde, Sao Tome and Principe and Timor-Leste are considered "free countries". Due to restrictions in political rights and civil liberties, Angola is still considered a "non-free country", while Guinea-Bissau and Mozambique are considered "partially free countries". It should be pointed out that Timor-Leste improved its status from "Partially Free" to "Free" in that report due to fair elections that led to a soft transfer of power and allowed new parties and candidates to enter the political system. In Angola there are high expectations about how the new president will stem corruption and ease restrictions on politics, the media, and civil society.

Following the end of single-party regimes, all PALOP-TL countries have adopted free-market economic systems, albeit in some cases the state still maintains land ownership and some limitations remain on foreign investment (a trend that has been easing).

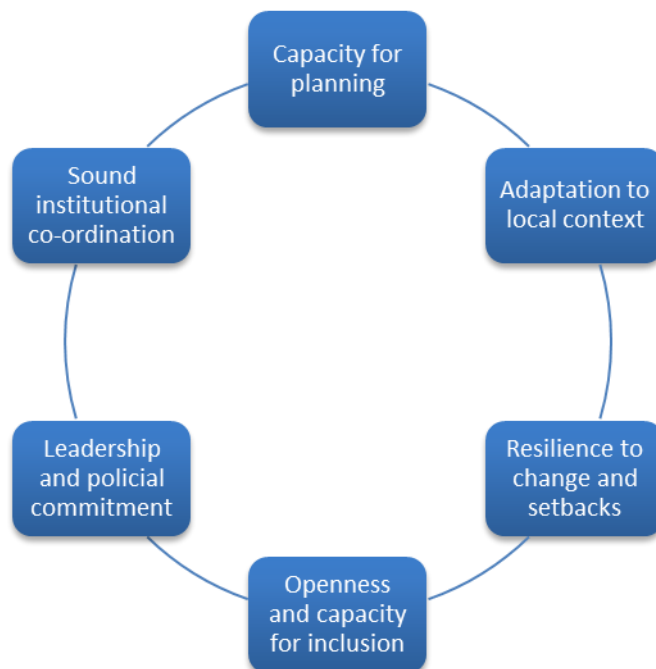
### *Institutional quality and capability in PALOP-TL countries*

According to Hanna (2016), digital transformation in developing countries should occur in continuous interaction with the national development strategy and as a crosscutting enabler of priority economic sectors. In addition, "attention to building local policy and planning capabilities is much needed: to provide strategic direction, to plan and implement digital transformation". The capacity of governments to implement digital transformation (and to adapt planning processes to diverse local contexts and stakeholders) is thus concomitant with a credible and durable transformative process. The more that institutions are strong and resilient to change, and the more stable and inclusive the political system, the more prepared countries will be able to successfully conduct their processes of digital transformation.

The OECD recommends that governments develop and implement digital government strategies which ensure greater transparency, openness and inclusiveness of government processes and operations (recommendation #1) and encourages engagement and participation of public, private and civil society stakeholders in policy making and public service design and delivery (#2), namely through the development of institutional capacities to help facilitate the engagement of all age groups and population segments (OECD, 2014). In addition, in developing their digital government strategies, governments should secure leadership and political commitment to the strategy (#5), ensure coherent use of digital technologies across policy areas and levels of government (#6) and establish effective organisational and governance frameworks to co-ordinate the implementation of the digital strategy within and across levels of government (#7).

The pre-requisites to ensure the success of long-term digital transformation processes (Figure 1.6) demand institutional quality and capability from the governments of PALOP-TL countries, but there is no standalone formula or established set of indicators to assess the institutional quality and capability of governments. However, among several dimensions of governance, one could be used as a proxy indicator for institutional quality and capability: government effectiveness. According to the World Bank's Worldwide Governance Indicators' definition, the "government effectiveness [indicator] captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies" (World Bank, 2018a).

**Figure 1.6. Pre-requisites for governments to ensure the success of long-term digital transformation processes (indicative list)**



*Sources:*

Adapted by Authors, Hanna (2016), *Mastering Digital Transformation – Towards a Smart Society, Economy, City, and Nation*, Emerald Publishing Limited.

OECD (2014), *Recommendation of the Council on Digital Government Strategies*, [www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm](http://www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm)

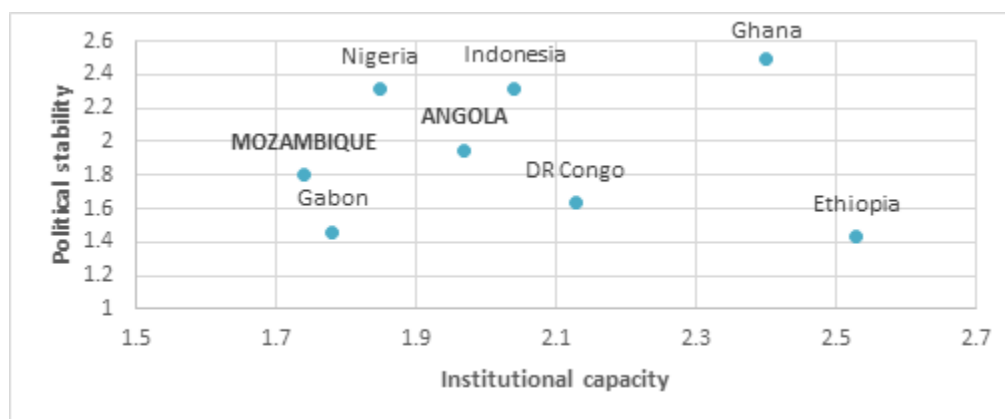
The perception-based assessment carried out as part of the World Governance Indicators Report (World Bank, 2018a) shows very different, and somewhat negative results, concerning government effectiveness in the PALOP-TL region, although Angola and Timor-Leste recorded a modest improvement over the last 10 years (from 6/100 and 9/100 in 2006, to 14/100 and 13/100 in 2016, respectively). In 2016, Cabo Verde achieved by far the best result of all PALOP-TL countries (57/100), distancing more than 30 points from the second best result (Sao Tome and Principe - 26/100) and 53 points from the worst (Guinea-Bissau – 4/100). One possible explanation for these results is that Cabo Verde is widely recognised (including by the international community) for its good governance, strong institutions and low corruption. Conversely, the frequent changes in government and the governments’ inability to present their political programmes to the National Assembly (which has not opened since 2014) severely impacts on government effectiveness in Guinea-Bissau.

The capacity to undertake the prospective reforms needed to ensure and accelerate digital transformation can also be assessed by two further indicators: political stability and institutional capacity. According to the Institutional Profiles Database 2016 (Directorate General of the Treasury/Government of France, 2018), political stability refers to the functioning of political institutions, the influential organisations in public life and the participation of the populations (or the extent to which diverse social, economic, and political viewpoints are incorporated into decision making). The institutional capacity of governments can be assessed by the functioning of public administrations; the co-

ordination of stakeholders; strategy, vision and innovation; and the security of transactions and contracts (or the degree to which policy stability and bargains over time can be enforced).

Angola and Mozambique, when compared to other developing countries in terms of political stability and institutional capacity, show the following results<sup>14</sup>:

**Figure 1.7. Assessing the political stability and institutional capacity to undertake prospective reforms (digital transformation)**

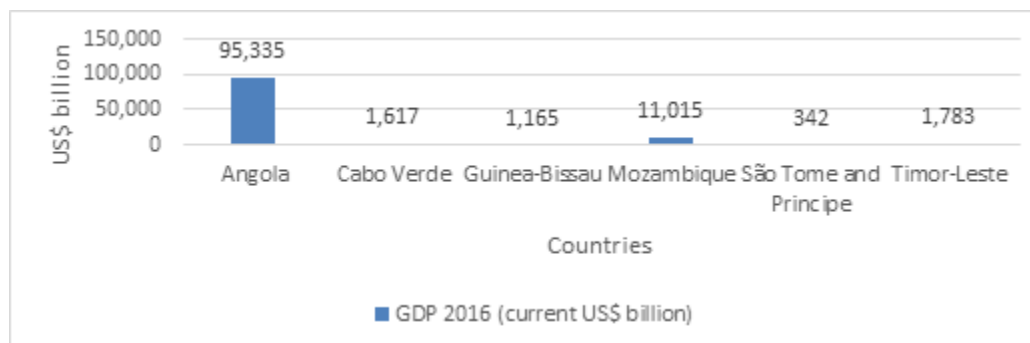


Source: Directorate General of the Treasury/Government of France, (2018), Institutional Profiles Database 2016, Paris, [www.cepii.fr/institutions/EN/download.asp](http://www.cepii.fr/institutions/EN/download.asp).

Based on the indicators used to assess the institutional quality and capability of PALOP-TL countries, it is possible to conclude that, globally, the governments show weaknesses, both in terms of governance effectiveness and in terms of political stability and institutional capacity. This may challenge their ability to ensure the success of digital transformation processes in the long term.

### *An economic perspective of PALOP-TL countries*

PALOP-TL countries comprise a mixture of heavily indebted countries (Guinea-Bissau, Mozambique and Sao Tome and Principe), small island developing states, and in at least one case, Cabo Verde, a country of lower middle income status. The size of their relative economies also widely varies, with the gross domestic product (GDP) of Angola and Mozambique at USD 95 335 and USD 11 015 billion respectively, vastly higher than that of the other PALOP-TL countries (check Figure 1.8 and Figure 1.9, respectively).

**Figure 1.8. GDP of PALOP-TL countries in 2016 (USD billion)**

Source: World Bank (2018b), World Bank Open Data (Angola), Washington DC

<https://data.worldbank.org/country/angola>

World Bank (2018c), World Bank Open Data (Cabo Verde), Washington DC

<https://data.worldbank.org/country/caboverde%20>

World Bank (2018d), World Bank Open Data (Guinea Bissau), Washington DC

<https://data.worldbank.org/country/guineabissau%20>

World Bank (2018e), World Bank Open Data (Mozambique), Washington DC

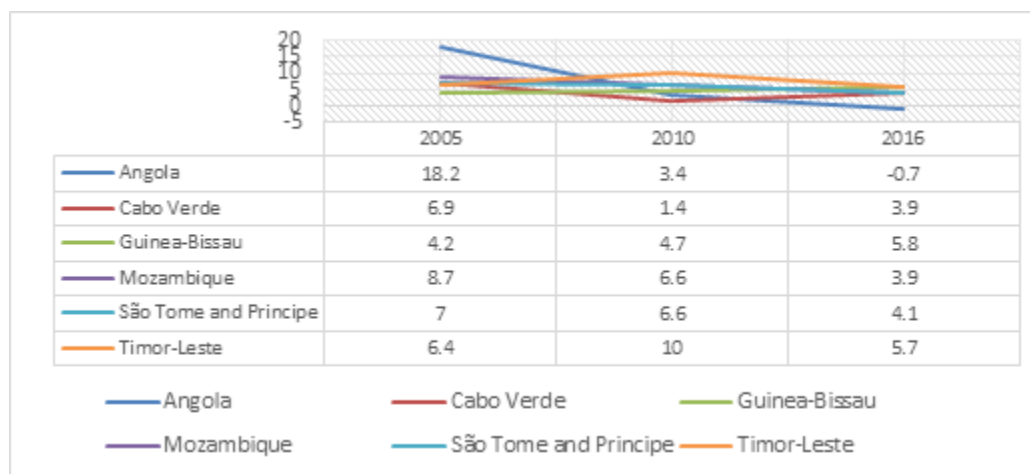
<https://data.worldbank.org/country/mozambique>

World Bank (2018f), World Bank Open Data (Sao Tome and Principe), Washington DC

<https://data.worldbank.org/country/saotome>

World Bank (2018g), World Bank Open Data (Timor-Leste), Washington DC

<https://data.worldbank.org/country/timor-leste>

**Figure 1.9. Annual GDP growth rate (%) in PALOP-TL countries (2005-2016)**

Source: World Bank (2018b), World Bank Open Data (Angola), Washington DC

<https://data.worldbank.org/country/angola>

World Bank (2018c), World Bank Open Data (Cabo Verde), Washington DC

<https://data.worldbank.org/country/caboverde>

World Bank (2018d), World Bank Open Data (Guinea Bissau), Washington DC

<https://data.worldbank.org/country/guineabissau>

World Bank (2018e), World Bank Open Data (Mozambique), Washington DC

<https://data.worldbank.org/country/mozambique>

World Bank (2018f), World Bank Open Data (Sao Tome and Principe), Washington DC

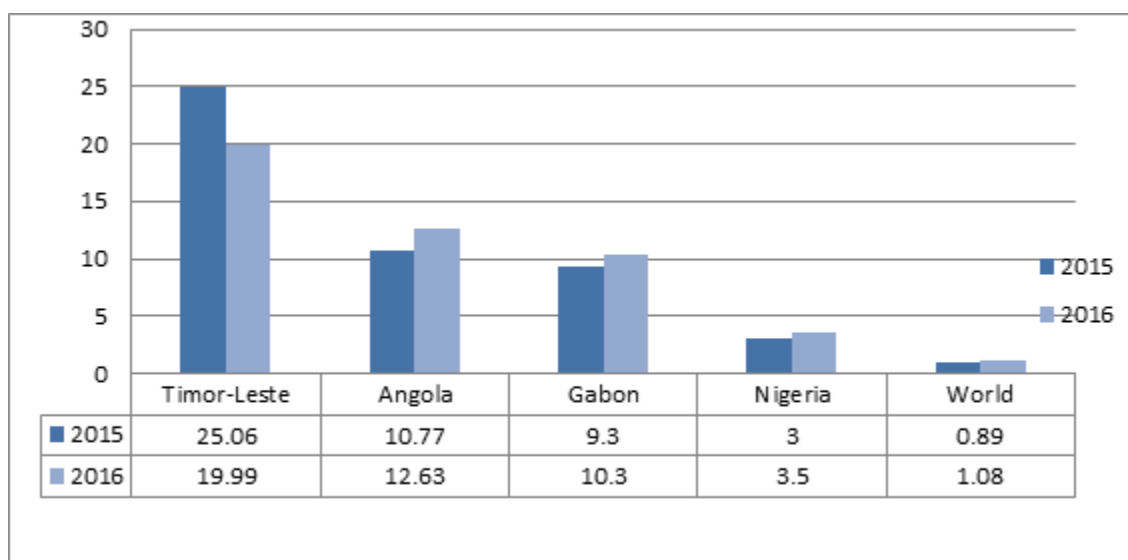
<https://data.worldbank.org/country/saotome>

World Bank (2018g), World Bank Open Data (Timor-Leste), Washington DC

<https://data.worldbank.org/country/timor-leste>

Both Timor-Leste and Angola (Africa's second largest oil producer) are resource rich developing countries with considerable economic potential. However, an over reliance on oil threatens their growth and development potential<sup>15</sup> (Figure 1.10).

**Figure 1.10. Oil rents in Angola and Timor-Leste (% of GDP)<sup>16</sup>**



Source: World Bank (2018b), World Bank Open Data (Angola), Washington DC

<https://data.worldbank.org/country/angola>

World Bank (2018g), World Bank Open Data (Timor-Leste), Washington DC

<https://data.worldbank.org/country/timor-leste>

World Bank (2018h), World Bank Open Data (Gabon), Washington DC

<https://data.worldbank.org/country/gabon>

World Bank (2018i), World Bank Open Data (Nigeria), Washington DC

<https://data.worldbank.org/country/nigeria>

Oil represents over 95% of Angola's exports, and the sharp and prolonged decline in its price since mid-2014 has had a significant impact on Angola's economy. Reduced revenues have caused GDP growth to decelerate from an annual average of 10.3% (from 2004 to 2014), to only 1.5% (since 2015). This has also negatively affected non-oil revenues (World Bank, 2017a).

With 95% of its current revenues derived from oil and gas exports, the government of Timor-Leste has been investing in the non-oil economy, and it is projected to grow at 5% on average in the period 2015 to 2020. However, immense challenges remain. Ensuring Timor-Leste's young people are educated, healthy, and productively employed are arguably the biggest development challenges the country faces over the next decade. With 60% of the population under 25 years of age, Timor-Leste is one of the youngest countries in the world (World Bank, 2017f).

Despite the lack of natural resources (foreign direct investment and tourism exports are its major sources of growth), Cabo Verde's successful socio-economic development during the last decade is widely recognised as among the most impressive socio-economic performance in Africa, with the country graduating from UN Least Developed Country (LDC) status in 2007. The country has also made impressive progress on social development indicators, including poverty reduction<sup>17</sup>, although progress remains uneven, particularly among the different islands and between rural and urban areas. The percentage

of the population living below the national poverty line still averaged 35% in 2015 (World Bank, 2017b).

Guinea-Bissau's economy also continues to expand despite political gridlock and the suspension of donor flows to the country. Real GDP growth is projected to average 5% in 2016–2018, although this acceleration in growth reflects the assumption that output from the agriculture sector will remain fairly robust (mostly cashew production), and that political stability is achieved to allow for a return of donor financing that would support a recovery in secondary sectors<sup>18</sup> (World Bank, 2017c).

In Mozambique, following a sustained increase in GDP between 1993 and 2013, at a rate of 7.4% per year on average, the country has recently experienced a decline in its rate of growth, largely on account of fiscal tightening and a slowdown in foreign direct investment<sup>19</sup>. The economy is led by mineral fuels, including oil (51.8% of total exports) and aluminium (26.6%). Critiques argue that growth has not been inclusive, with moderate to extreme poverty still heavily concentrated in rural areas and in the central and northern regions of the country. Currently, about half of Mozambicans live on less than USD 1 a day, and more than 60% of the population live in extreme poverty (World Bank, 2016c).

Sao Tome and Principe is a small island economy with no single source of economic activity that serves as a driver of growth. Tourism is an important and growing activity, but it has not been able to support growth on an economy-wide basis<sup>20</sup>. Historically, agriculture has been a strongly performing sector, with exports of cocoa, coffee, and palm oil increasing in recent years, but this has not compensated for the growth of imports. The country's robust GDP growth in recent years (propelled by rising world cocoa prices, bonus payments for petroleum exploration, and foreign direct investment in tourism<sup>21</sup>) has also not translated into commensurate poverty reduction (World Bank, 2017e).

Due to large differences in economic and income potential across PALOP-TL countries, their respective levels of financial autonomy are also reflected in their relative level of dependence on external aid (Table 1.3).

**Table 1.3. Net official development assistance received in 2016 (% of Gross National Income)**

Countries	Net official development assistance received
Angola	0.2
Cabo Verde	7.4
Guinea-Bissau	17.7
Mozambique	14.2
Sao Tome and Principe	13.7
Timor-Leste	8.1

Source: World Bank (2018b), World Bank Open Data (Angola), Washington DC

<https://data.worldbank.org/country/angola>

World Bank (2018c), World Bank Open Data (Cabo Verde), Washington DC

<https://data.worldbank.org/country/caboverde>

World Bank (2018d), World Bank Open Data (Guinea Bissau), Washington DC

<https://data.worldbank.org/country/guineabissau>

World Bank (2018e), World Bank Open Data (Mozambique), Washington DC

<https://data.worldbank.org/country/mozambique>

World Bank (2018f), World Bank Open Data (Sao Tome and Principe), Washington DC

<https://data.worldbank.org/country/saotome>

World Bank (2018g), World Bank Open Data (Timor-Leste), Washington DC

<https://data.worldbank.org/country/timor-leste>



### *PALOP-TL countries' development indicators*

According to the OECD, the International Monetary Fund (IMF) and United Nations country classifications, PALOP-TL countries can be classified as follows:

**Table 1.4. PALOP-TL and countries classification**

Country	Least developed country	Lower middle income country	Heavily indebted poor country	Small island developing state
Angola	X			
Cabo Verde		X		X
Guinea-Bissau	X		X	
Mozambique	X		X	
Sao Tome	X		X	X
Timor-Leste	X			X

*Source:*

OECD (2018), OECD-DAC list of ODA Recipients effective for reporting on 2018, 2019 and 2020 flows, [www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC\\_List\\_ODA\\_Recipients2018to2020\\_flows\\_En.pdf](http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC_List_ODA_Recipients2018to2020_flows_En.pdf)

International Monetary Fund (2018), Debt Relief Under the Heavily Indebted Poor Countries (HIPC) Initiative, Washington DC,

[www.imf.org/en/About/Factsheets/Sheets/2016/08/01/16/11/Debt-Relief-Under-the-Heavily-Indebted-Poor-Countries-Initiative](http://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/16/11/Debt-Relief-Under-the-Heavily-Indebted-Poor-Countries-Initiative).

United Nations - Department of Economic and Social Affairs (2018a), World Economic Situation and Prospects 2018, New York,

[www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018\\_Full\\_Web-1.pdf](http://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf).

The latest UN Human Development Index Report ranks Cabo Verde 122 out of 188 countries and territories, followed by Timor-Leste (133), Sao Tome and Principe (142), Angola (150), Guinea-Bissau (178) and Mozambique (181) (Table 1.5).

**Table 1.5. PALOP-TL and the UN Human Development Index Report (2016)**

Type the subtitle here. If you do not need a subtitle, please delete this line.

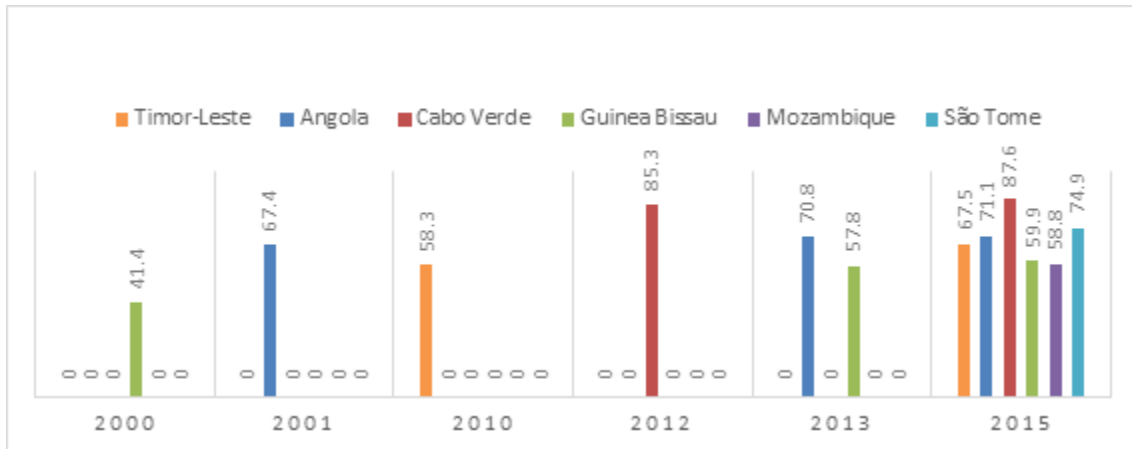
Country	Human Development Index Value	Human Development Index Ranking	Life expectancy at birth	Expected years of schooling	Mean years of schooling	GNI per capita (PPP US\$)
Angola	0.533	150	52.7	11.4	5.0	6 291
Cabo Verde	0.648	122	73.5	13.5	4.8	6 049
Guinea-Bissau	0.424	178	55.5	9.2	2.9	1 369
Mozambique	0.418	181	55.5	9.1	3.5	1 098
Sao Tome	0.574	142	66.6	12	5.3	3 070
Timor-Leste	0.605	133	68.5	12.5	4.4	5 371

*Source:* United Nations Development Programme (2016), Human Development Index Report 2016, [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf).

An important conclusion to be drawn from this data is that there is a large disparity in gross national income (GNI) per capita among PALOP-TL countries, ranging from a maximum of USD 6 291 in Angola, to a minimum of USD 1 098 in Mozambique. Income inequality in Guinea-Bissau and Mozambique (measured by the Gini coefficient<sup>22</sup>) is among the highest in the group (50.7 and 45.6 respectively)<sup>23</sup>.

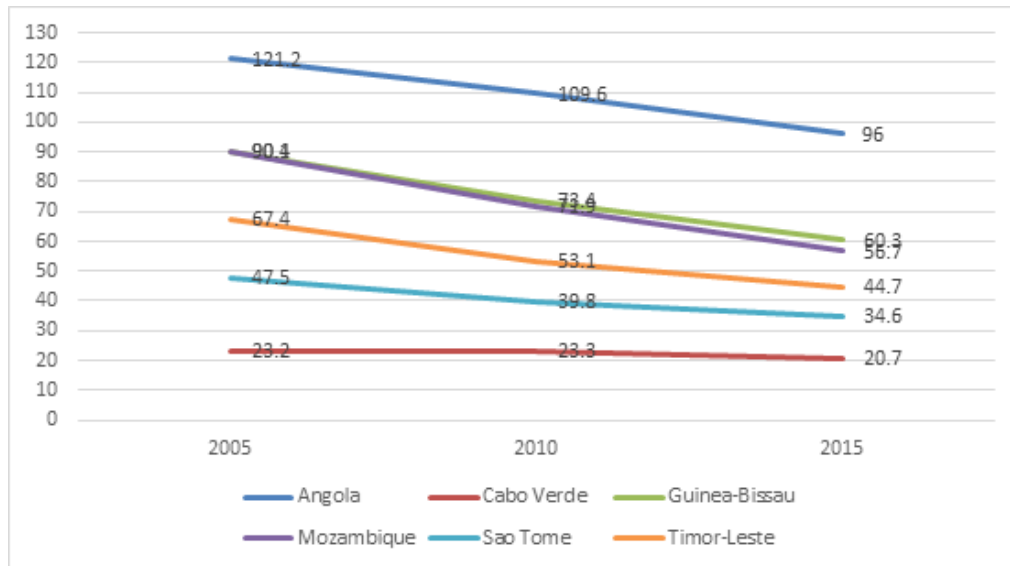
In terms of key human development indicators, including those most relevant for digital development, results are again uneven. In general, the adult literacy rate (above 15-years-old) is low. In 2015, Guinea-Bissau and Mozambique had literacy rates well below the 70% average for the PALOP-TL region (59.9% and 58.8% respectively), although Guinea-Bissau has made great progress since 2000 when the literacy rate was calculated as only 41.4% of the population aged over 15 years. Cabo Verde has the highest literacy rate of countries in the group at 87.6% when last measured in 2015 (Figure 1.11).

**Figure 1.11. Adult literacy rate (at 15 years and over) in the PALOP-TL group (2005-2015)**



Source: United Nations Development Programme (2016), Human Development Index Report 2016, [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf).

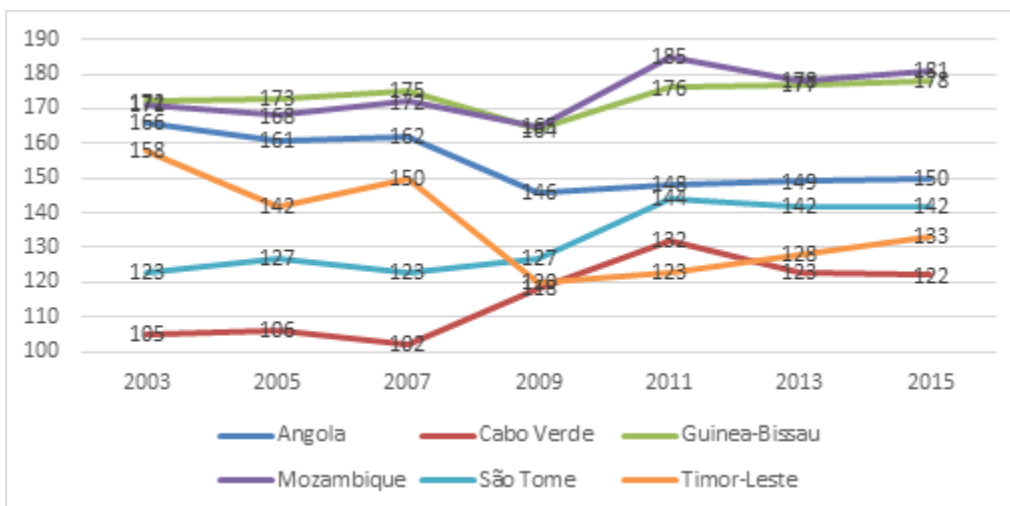
In 2015, the PALOP-TL group recorded an average of 321.33 maternal deaths per 100 000 births (from a maximum of 549 deaths in Guinea-Bissau to a minimum of 42 in Cabo Verde), below the average recorded in Africa (including several Sub-Saharan countries and Algeria), which was 542 deaths per 100 000 births (United Nations Development Programme, 2016). The data on child and infant mortality suggest that by these measures, PALOP-TL countries are also struggling. In Angola, the child mortality rate<sup>24</sup> is among the highest in the world, although the rates of infant mortality dropped from 121.2 to 96 deaths per 1 000 live births in 10 years. Similar efforts have been made by the other PALOP-TL countries (Figure 1.12).

**Figure 1.12. Infant mortality rate (per 1 000 live births) in the PALOP-TL group (2005-2015)**

Note: Mozambique (2005 = 90.4; 2010 = 71.9; 2015 = 56.7) / Guinea-Bissau (2005 = 90.1; 2010 = 73.4; 2015 = 60.3).

Source: United Nations Development Programme (2016), Human Development Index Report 2016, [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf).

Despite modest improvements in national development indicators compared with the 188 countries currently measured, only Angola and Timor-Leste have improved their Human Development Index ranking compared to the position reached in 2003, and Timor-Leste has the benefit of its considerable natural resources (Figure 1.13).

**Figure 1.13. Human Development Index trends in the PALOP-TL region (2003-2015)**

Source: United Nations Development Programme (2016), Human Development Index Report 2016, [http://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf).

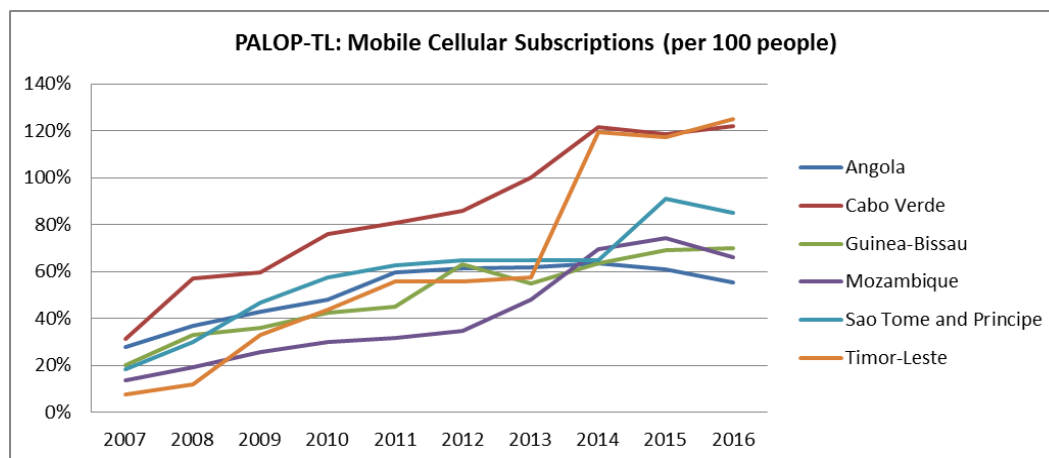
### *The digital economy and society indicators in PALOP-TL countries*

In the PALOP-TL region, as elsewhere, the digitalisation of public administration has progressed significantly in recent years, with digital technologies rapidly penetrating the daily lives of government, private sector/business, civil society and community. A number of countries, principally Mozambique and Angola, also exhibit the underlying preconditions necessary to transition from e-government to the creation of a digital ecosystem, and Cabo Verde has already taken important steps as part of this transition.

Common indicators can be identified as illustrating this trend. These measures also reflect the rapid, albeit uneven, adoption of digital technologies in the six countries. During the period of 2007-2016, for example, mobile cellular subscriptions per 100 people in the PALOP-TL region increased by more than 300%, from an average of 19.9% to 87.3% (Figure 1.14).

Mobile penetration has in some way compensated for the structural difficulties faced by PALOP-TL countries in providing fixed broadband connections throughout the territory.<sup>25</sup> When reviewed against fixed broadband subscriptions per 100 people during the same period of 2007-2016, mobile penetration increased in the region from 0.2% to 0.8% (ITU, 2017), illustrating the high potential of mobile technologies compared with fixed broadband communications.

**Figure 1.14. PALOP-TL: Mobile cellular subscriptions (per 100 people)**



Source:

World Bank (2018b), World Bank Open Data (Angola), Washington DC

<https://data.worldbank.org/country/angola>.

World Bank (2018c), World Bank Open Data (Cabo Verde), Washington DC

<https://data.worldbank.org/country/caboverde>.

World Bank (2018d), World Bank Open Data (Guinea Bissau), Washington DC

<https://data.worldbank.org/country/guineabissau>.

World Bank (2018e), World Bank Open Data (Mozambique), Washington DC

<https://data.worldbank.org/country/mozambique>.

World Bank (2018f), World Bank Open Data (Sao Tome and Principe), Washington DC

<https://data.worldbank.org/country/saotome>.

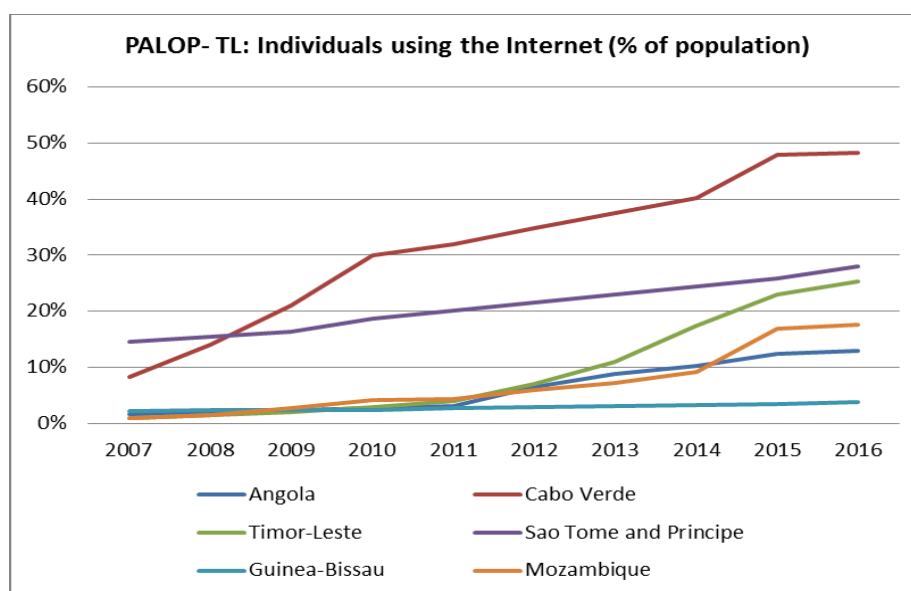
World Bank (2018g), World Bank Open Data (Timor-Leste), Washington DC

<https://data.worldbank.org/country/timor-leste>.

The levels of Internet use by individuals in PALOP-TL countries also increased between 2007-2016, from an average of 4.8% in 2007 to 22.6% in 2016 – slightly higher than the

average of 20% across the Sub-Saharan Africa Continent<sup>26</sup> (ITU, 2017). When measured at a country level, Internet use shows higher levels of variation (Figure 1.15). Cabo Verde experienced an impressive uptake of Internet usage in the population between 2006 and 2017 (from 8.3% to 48.2%); Sao Tome and Principe ranks second highest in the region; Timor-Leste and Mozambique demonstrated a spike in Internet uptake from 2013 and 2012, respectively; the pace of Internet penetration has been slower in Angola than among peers in the region; and Guinea-Bissau presents as an outlier, with limited to no Internet uptake during this period, largely due to contextual constraints (e.g. high political instability with negative effects on social and economic development).

**Figure 1.15. Internet usage in PALOP-TL countries**



Source:

World Bank (2018b), World Bank Open Data (Angola), Washington DC

<https://data.worldbank.org/country/angola>.

World Bank (2018c), World Bank Open Data (Cabo Verde), Washington DC

<https://data.worldbank.org/country/caboverde>.

World Bank (2018d), World Bank Open Data (Guinea Bissau), Washington DC

<https://data.worldbank.org/country/guineabissau>.

World Bank (2018e), World Bank Open Data (Mozambique), Washington DC

<https://data.worldbank.org/country/mozambique>.

World Bank (2018f), World Bank Open Data (Sao Tome and Principe), Washington DC

<https://data.worldbank.org/country/saotome>.

World Bank (2018g), World Bank Open Data (Timor-Leste), Washington DC

<https://data.worldbank.org/country/timor-leste>.

Seizing on the progressive integration of digital technologies in PALOP-TL countries, the governments of the six countries have worked to promote the digitalisation of public administration and the benefits of digital technologies in order to deliver core government functions, create the institutional foundations for a digital government ecosystem, and enhance citizen-driven approaches to public service development.

In terms of the levels of digital development among PALOP-TL countries, the United Nations E-Government Development Index (Table 1.6) shows some level of deviation between higher performing countries, such as Cabo Verde and Timor-Leste, and the other

countries. The results of the index clearly speak to the underlying development conditions that can constrain the digital development of a given country, with Sao Tome and Principe, Angola, Mozambique and Guinea-Bissau ranked 154th, 155th, 160th and 187th, respectively, among 193 countries.

**Table 1.6. E-Government Development Index: Positions of the PALOP-TL countries**

	United Nations E-Government Development Index				
	2010	2012	2014	2016	2018
Angola	132	142	140	142	155
Cabo Verde	108	118	127	103	112
Guinea-Bissau	179	182	182	181	187
Mozambique	161	158	164	172	160
Sao Tome and Principe	128	138	169	168	154
Timor-Leste	162	170	161	160	142

*Sources:*

United Nations - Department of Economic and Social Affairs (2018b), United Nations E-Government Survey 2018, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>.  
 United Nations - Department of Economic and Social Affairs (2016), United Nations E-Government Survey 2016, New York, <https://publicadministration.un.org/egovkb/en-us/reports/un-e-government-survey-2016>  
 United Nations - Department of Economic and Social Affairs (2014), United Nations E-Government Survey 2014, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2014>  
 United Nations - Department of Economic and Social Affairs (2012), United Nations E-Government Survey 2012, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2012>  
 United Nations - Department of Economic and Social Affairs (2010), United Nations E-Government Survey 2010, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2010>

With the PALOP-TL context laid out in brief above, the following chapters will focus on the potential for e-government to enable or reinforce the delivery of core government functions (Chapter 2), building on the institutional foundations of a sound digital government ecosystem (Chapter 3), and citizen-driven approaches for coherent and sustainable digital service delivery (Chapter 4).

## Notes

<sup>1</sup> Including, among others, artificial intelligence, unmanned systems, synthetic biology and 3D/4D printing technology.

<sup>2</sup> In the first technological revolution (industrial revolution), water and steam power were used to mechanise production, whereas in the second, the use of electric power was mainstreamed to create mass production.

<sup>3</sup> Inclusion is also felt by the economies of scale generated by the use of digital technologies. In effect, the more people and companies use digital services, the more useful and valuable they become (World Bank, 2016a). Digital payment systems like M-Pesa in Kenya and E-Kwanza in Angola are good examples.

<sup>4</sup> More than just a framework, the Addis Agenda embodies several hundred concrete actions that Member States of the United Nations pledged to undertake individually and collectively. As subsequently emphasised in the 2030 Agenda for Sustainable Development, adopted by the General Assembly in September 2015, full implementation of the Addis Agenda is critical for the realisation of the sustainable development goals (SDGs) and targets.

<sup>5</sup> Two additional indicators have been proposed to serve as proxies to measure advances in the level of skills in the use of ICT: proportion of youth/adults with ICT skills by type of skills (4.4.1), and proportion of schools with access to the Internet and computers for pedagogical purposes (4.a.1).

<sup>6</sup> To make digital solutions available to developing countries and operationalise the ambitious agenda outlined by the 2016 World Development Report, the World Bank launched the Digital Development Partnership (DDP), a platform for digital innovation and development finance. The DDP brings together public and private sector partners to foster the creation and implementation of digital development strategies, to facilitate global knowledge exchange on digital development, and to make digital solutions available to developing countries with an emphasis on data and indicators, digital economy enabling environment, cybersecurity, Internet access for all and digital government.

<sup>7</sup> The European Union has recently approved a working document called “Digital4Development: mainstreaming digital technologies and services into EU Development Policy” (European Commission, 2017). Digital4Development is a framework for mainstreaming digital technologies into development policy and details and operationalises the objectives set out in the “Commission Communication concerning a proposal for a new European Consensus on Development” (2016) on the usage of digital technologies in development. It covers four main priority areas: access to affordable and secure broadband connectivity and to digital infrastructure, including the necessary regulatory reforms; digital literacy and skills; digital entrepreneurship and job creation; and digital technologies as an enabler for sustainable development. As part of the Digital4Development initiative, the European Commission has prepared an indicative list of actions to be funded in the medium term (2018-2020), to be agreed in conformity with the rules and procedures regarding programming and implementation of the relevant financial instruments.

<sup>8</sup> Those development organisations included: Bill & Melinda Gates Foundation; Swedish International Development Cooperation Agency; UNICEF; United Nations Development Programme; United Nations Office for the Coordination of Humanitarian Affairs; United States Agency for International Development; World Health Organization; World Bank Group; World Food Programme; and World Vision International.

<sup>9</sup> Starting in the late 2000s, several large donors and multilateral organisations began talking about the use of technology in development. Sets of principles, lessons, and best practices began emerging, beginning with the UNICEF Innovation Principles in 2009. A year later, a group of health practitioners and donors met and independently developed a different set of guidance known as the Greentree Principles. These two sets of principles were organised and worded differently, but encompassed similar ideas. Other sets of similar principles soon followed, some focused at the national level, like the UK’s Government Design Services Digital Principles, and others related to internal, institutional procurement processes, such as the World Bank’s Open Development Principles. A “Principles for Digital Development Working Group” was launched in 2014, followed by an endorsement campaign in 2015.

<sup>10</sup> However, it is worth noting that the OECD has taken the lead in benchmarking digital government strategies in non-OECD countries using the OECD Recommendation of the Council on Digital Government Strategies as a frame of reference. For instance, “Benchmarking Digital Government Strategies in MENA Countries” (OECD, 2017).

<sup>11</sup> Political stability refers to the functioning of political institutions, the influential organisations in public life and the participation of the populations – or the extent to which diverse social, economic, and political viewpoints are incorporated into decision making.

<sup>12</sup> Institutional capacity refers to the functioning of public administrations, the co-ordination of stakeholders, strategy, vision and innovation, and the security of transactions and contracts – or the degree to which policy stability and bargains over time can be enforced.

<sup>13</sup> The European Union is supporting the group since 1992 through the EU-ACP (African, Caribbean and Pacific Group of States) co-operation framework and the European Development Fund financial instruments.

<sup>14</sup> The “Institutional Profile Database” does not yet provide data regarding the other PALOP-TL countries.

<sup>15</sup> Timor-Leste reached Peak Oil in 2012, and current reserves under production are expected to be depleted by 2021. Development of a major new field, “Greater Sunrise”, remains the subject of intense bilateral negotiations between the Government of Australia and Timor-Leste.

<sup>16</sup> Oil rents are the difference between the value of crude oil production at world prices and total costs of production.

<sup>17</sup> Cabo Verde’s average life expectancy is the highest in Sub-Saharan Africa. By 2011, 94% of children under one year of age were fully immunised, and the percentage of the total population living less than half an hour from a health centre reached 86%. Similarly, education outcomes put Cabo Verde at the top of Sub-Saharan Africa. The country also made considerable progress on increasing basic services, including in health and water and sanitation. (Human Development Report database - <http://hdr.undp.org/en/data>).

<sup>18</sup> Poverty in Guinea-Bissau is high and increased between 2002 and 2010. Nearly 1.2 million people (69.4%) were poor in 2010. One-third of the population (33.1%) lived in extreme poverty, surviving on under USD 1 per adult equivalent per day (national extreme poverty line) (World Bank, 2017g).

<sup>19</sup> Traditional export earnings dropped due to depressed global demand and the weak foreign currency inflows, as gas mega projects were interrupted and external partners suspended budget support (African Development Bank, 2017).

<sup>20</sup> Oil exploration has been taking place since 2012, however, production isn’t expected until after 2020.

<sup>21</sup> Real GDP is expected to average 4.9% in 2018-19, supported by public investment in infrastructure, and rising activity in the tourism and construction sector.

<sup>22</sup> Gini coefficient is a measure of statistical dispersion intended to represent the income or wealth distribution of a nation’s residents. It’s the most commonly used measurement of inequality.

<sup>23</sup> Cabo Verde scores 47.2, Angola 42.7, Timor-Leste 31.6 and Sao Tome and Principe 30.8.

<sup>24</sup> Regarding the healthcare sector, some of the indicators that best illustrate its state of development are the infant mortality rate and the maternal mortality ratio, as they highlight the discrepancies of countries in the delivery of basic health services.

<sup>25</sup> Mobile broadband is predominately the technology chosen to cover large territories, where low population density makes fixed broadband harder to deploy and sustain economically. Mobile broadband networks (3G and 4G) reach 84% of the global population but only 67% of the global rural population. 4G networks have spread quickly since 2013 and reach almost 4 billion people today (53% of the global population), enhancing the quality of Internet use. In particular, since 2006 the African continent has leaped from 12 mobile subscriptions per 100 inhabitants to 80 (European Commission, 2017).

<sup>26</sup> Compared against the global average of 45%, however, there is still room for considerable improvement in the PALOP-TL region.



## References

- African Development Bank (2017), *African Economic Outlook - Mozambique 2017*, Abidjan [www.africaneconomicoutlook.org/sites/default/.../MOZAMBIQUE\\_EN\\_2017\\_0.pdf](http://www.africaneconomicoutlook.org/sites/default/.../MOZAMBIQUE_EN_2017_0.pdf).
- Directorate General of the Treasury/Government of France (2018), *Institutional Profiles Database 2016*, Paris, [www.cepii.fr/institutions/EN/download.asp](http://www.cepii.fr/institutions/EN/download.asp).
- European Commission (2017), *Digital4Development: mainstreaming digital technologies and services into EU Development Policy*, European Commission, Brussels, [https://ec.europa.eu/europeaid/sites/devco/files/swd-digital4development\\_part1\\_v3.pdf](https://ec.europa.eu/europeaid/sites/devco/files/swd-digital4development_part1_v3.pdf).
- Freedom House (2018), *Freedom in the World 2018*, Washington, [www.freedomhouse.org](http://www.freedomhouse.org).
- Hanna, Nagy K. (2016), *Mastering Digital Transformation – Towards a Smart Society, Economy, City, and Nation*, Emerald Publishing Limited, United Kingdom.
- International Monetary Fund (2018), *Debt Relief Under the Heavily Indebted Poor Countries (HIPC) Initiative*, Washington DC, [www.imf.org/en/About/Factsheets/Sheets/2016/08/01/16/11/Debt-Relief-Under-the-Heavily-Indebted-Poor-Countries-Initiative](http://www.imf.org/en/About/Factsheets/Sheets/2016/08/01/16/11/Debt-Relief-Under-the-Heavily-Indebted-Poor-Countries-Initiative).
- ITU (2017), *ICT Facts and Figures 2017*, Geneva, [www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx](http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx).
- Legis-Palop+TL (2018), *Base de Dados Jurídica Oficial*, Lisbon, [www.legis-palop.org](http://www.legis-palop.org).
- OECD (2018), *OECD-DAC list of ODA Recipients effective for reporting on 2018, 2019 and 2020 flows*, Paris, [www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC\\_List\\_ODA\\_Recipients2018to2020\\_flows\\_En.pdf](http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC_List_ODA_Recipients2018to2020_flows_En.pdf).
- OECD (2017), *Benchmarking Digital Government Strategies in MENA Countries*, Paris, [www.oecd.org/mena/governance/digital-governance-mena.pdf](http://www.oecd.org/mena/governance/digital-governance-mena.pdf).
- OECD (2014), *Recommendation of the Council on Digital Government Strategies*, Paris, [www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm](http://www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm).
- Schwab, Klaus (2016), *The Fourth Industrial Revolution*, World Economic Forum, Geneva
- The Principles for Digital Development Working Group (2018), *Principles for Digital Development*, Washington DC, <https://digitalprinciples.org/principles/>.
- United Nations (2015), *Transforming our World: the 2030 Agenda for Sustainable Development*, New York, <https://sustainabledevelopment.un.org/post2015/transformingourworld>.
- United Nations - Department of Economic and Social Affairs (2018a), *World Economic Situation and Prospects 2018*, New York, [www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018\\_Full\\_Web-1.pdf](http://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WESP2018_Full_Web-1.pdf).
- United Nations - Department of Economic and Social Affairs (2018b), *United Nations E-Government Survey 2018*, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>.
- United Nations - Department of Economic and Social Affairs (2016), *United Nations E-Government Survey 2016*, New York, <https://publicadministration.un.org/egovkb/en-us/reports/un-e-government-survey-2016>.
- United Nations - Department of Economic and Social Affairs (2014), *United Nations E-Government Survey 2014*, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2014>.

- United Nations - Department of Economic and Social Affairs (2012), *United Nations E-Government Survey 2012*, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2012>.
- United Nations - Department of Economic and Social Affairs (2010), *United Nations E-Government Survey 2010*, New York, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2010>.
- United Nations Development Programme (2016), *Human Development Index Report 2016*, New York, [https://hdr.undp.org/sites/default/files/2016\\_human\\_development\\_report.pdf](https://hdr.undp.org/sites/default/files/2016_human_development_report.pdf).
- Waugaman, Adele (2016), From Principle to Practice: Implementing the Principles for Digital Development, *The Principles for Digital Development Working Group*, Washington, DC., [https://digitalprinciples.org/wp-content/uploads/From\\_Principle\\_to\\_Practice\\_v5.pdf](https://digitalprinciples.org/wp-content/uploads/From_Principle_to_Practice_v5.pdf).
- World Bank (2018a), *Worldwide Governance Indicators 2018*, Washington, DC., <http://info.worldbank.org/governance/wgi>.
- World Bank (2018b), *World Bank Open Data (Angola)*, Washington DC., <https://data.worldbank.org/country/angola>.
- World Bank (2018c), *World Bank Open Data (Cabo Verde)*, Washington DC., <https://data.worldbank.org/country/caboverde>.
- World Bank (2018d), *World Bank Open Data (Guinea-Bissau)*, Washington DC., <https://data.worldbank.org/country/guineabissau>.
- World Bank (2018e), *World Bank Open Data (Mozambique)*, Washington DC., <https://data.worldbank.org/country/mozambique>.
- World Bank (2018f), *World Bank Open Data (Sao Tome and Principe)*, Washington DC. <https://data.worldbank.org/country/saotome>.
- World Bank (2018g), *World Bank Open Data (Timor-Leste)*, Washington DC. <https://data.worldbank.org/country/timor-leste>.
- World Bank (2018h), *World Bank Open Data (Gabon)*, Washington DC., <https://data.worldbank.org/country/gabon>.
- World Bank (2018i), *World Bank Open Data (Nigeria)*, Washington DC. <https://data.worldbank.org/country/nigeria>.
- World Bank (2017a), *Country overview (Angola)*, Washington, DC., [www.worldbank.org/en/country/angola/overview](http://www.worldbank.org/en/country/angola/overview).
- World Bank (2017b), *Country overview (Cabo Verde)*, Washington, DC., [www.worldbank.org/en/country/caboverde/overview](http://www.worldbank.org/en/country/caboverde/overview).
- World Bank (2017c), *Country overview (Guinea-Bissau)*, Washington, DC., [www.worldbank.org/en/country/guineabissau/overview](http://www.worldbank.org/en/country/guineabissau/overview).
- World Bank (2017d), *Country overview (Mozambique)*, Washington, DC., [www.worldbank.org/en/country/mozambique/overview](http://www.worldbank.org/en/country/mozambique/overview).
- World Bank (2017e), *Country overview (Sao Tome and Principe)*, Washington, DC., [www.worldbank.org/en/country/saotome/overview](http://www.worldbank.org/en/country/saotome/overview).
- World Bank (2017f), *Country overview (Timor-Leste)*, Washington, DC., [www.worldbank.org/en/country/timor-leste/overview](http://www.worldbank.org/en/country/timor-leste/overview).

- World Bank (2017g), *Guinea Bissau - Country Partnership Framework*, Washington, DC., <http://documents.worldbank.org/curated/en/905591497578455518/pdf/Guinea-Bissau-CPF-Board-version-May-15-gt-ks-05192017.pdf>.
- World Bank (2016a), *World Development Report 2016: Digital Dividends*, Washington, DC., [www.worldbank.org/en/publication/wdr2016](http://www.worldbank.org/en/publication/wdr2016).
- World Bank (2016b), *Combined Project Information Documents/West Africa Regional Communications Infrastructure Project*, Washington, DC., <http://documents.worldbank.org/curated/en/520851468010205314/pdf/PIDISDS-APR-Print-P155876-06-17-2016-1466175071298.pdf>.
- World Bank (2016c), *Accelerating Poverty Reduction in Mozambique: Challenges and Opportunities*, Washington, DC., [www.worldbank.org/en/country/mozambique/publication/accelerating-poverty-reduction-in-mozambique-challenges-and-opportunities](http://www.worldbank.org/en/country/mozambique/publication/accelerating-poverty-reduction-in-mozambique-challenges-and-opportunities).



## Chapter 2. Core government functions and digital solutions

*The delivery of public services presupposes that governments are primarily capable to ensure and exercise a set of basic functions, such as collecting revenues, monitoring expenditure, managing the civil service or ensuring communication through public bodies and with citizens and businesses. Accordingly, the design and implementation of digital government strategies in African Portuguese-Speaking Countries and Timor-Leste (PALOP-TL) must take into account the ability of their respective governments to carry out a minimum set of core functions, which are deemed as an essential building block to ensure the foundations of a digitally transformed public sector. This chapter assesses how such upstream and downstream core government functions are currently being ensured by the governments of the PALOP-TL countries, as well as how digital solutions are being used to drive, support and improve the delivery of public services.*

## Ensuring core government functions

The digital transformation of public administrations requires that governments are capable of ensuring the exercise of a minimum set of executive functions, which are essential and preliminary to the delivery of digital or non-digital public services.

Capabilities to leverage digital technologies and government data for the full and effective exercise of these core government functions are considered a fundamental requisite for administrations to move from analogue and e-government systems towards the digital government paradigm. Without these basic government capabilities, a digital transformation simply will not be feasible.

In recent years, multilateral development organisations have identified a common trajectory of institutional and administrative development for countries in the process of transition and development. This trajectory begins with the need to build or re-establish core administrative capacities in key domains of government, both upstream in the areas of public financial management, administration of government, management of the civil service and local government (where applicable); but also downstream, in the delivery of public services. Among important lessons learned in this body of work is the relevance of adopting both a problem-orientation approach by using digital solutions to assist the government to solve problems in the core administration of the public sector; and a political economy perspective, which entails understanding the political interests and priorities of decision makers in government, the need for flexibility and adaptation to changing political circumstances, and the importance of staying the course in the face of temporary reversals. As opposed to adopting comprehensive government reforms, or entirely new business processes (or digital technologies), this initial phase is about building on existing institutional legacies, tailoring to fit or adapting existing systems to the relevant policy and institutional priorities of government, learning by doing, and building on incremental capabilities so as to not overwhelm nascent systems (UNDP, 2014; United Nations/World Bank, 2017).

Taking into account this established body of learning, this chapter identifies the role of digital solutions as a tool to assist governments of PALOP-TL countries to build on or strengthen their core government functions in order to assess how digital solutions are being used - or could be used - to ensure or improve government performance. In undertaking this work of analysis, this review of the six PALOP-TL countries has shown that during the initial phase of administrative development, digital solutions are important tools not only in themselves, but also as a means to achieve basic government functionality. With basic functionality established, digital solutions can then serve to enhance the efficiency and effectiveness of administrative capacities, which in turn can create the necessary preconditions for a shift or transition towards the creation of a digital government.

## Mapping the needs: From upstream to downstream functions

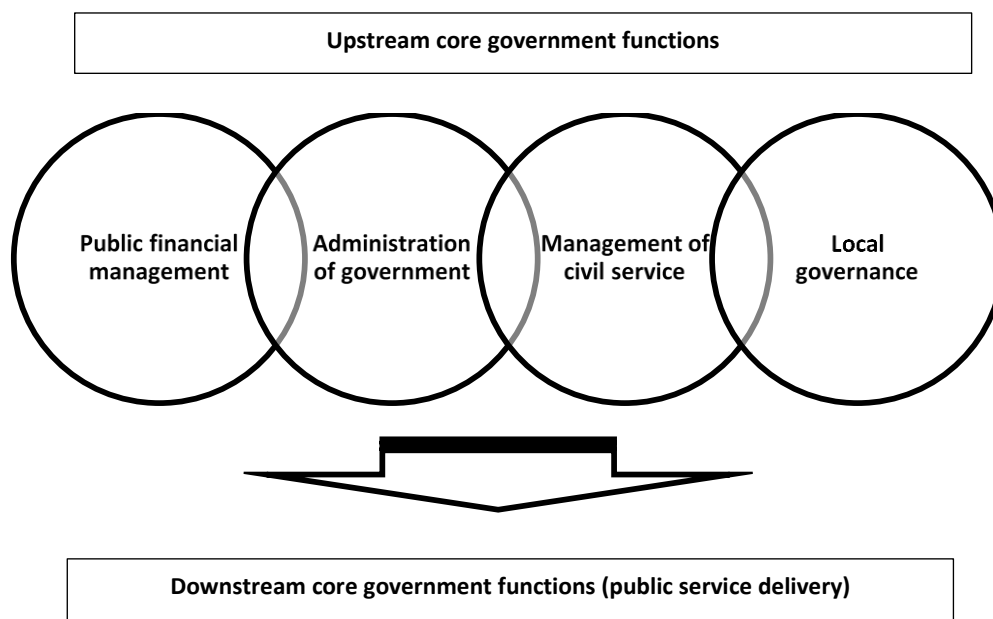
The core government functions or administrative challenges around which governments in the PALOP-TL region have been adopting the use of digital solutions can be divided into two principal areas:

- **Upstream functions**, which comprise the public financial management systems (i.e. collection of revenue and public expenditure), the administration of

government (i.e. the executive co-ordination between the government agencies), the management of civil service and the local governance.

- **Downstream functions**, which comprise all types of public services borne by the state, both at the central and local levels.

**Figure 2.1. Upstream and downstream core government functions**



*Source:* Adapted from United Nations/World Bank (2017), (Re)Building Core Government Functions in Fragile and Conflict Affected Settings, [www.undp.org/content/undp/en/home/librarypage/crisis-prevention-and-recovery/Executive\\_Summary\\_Public\\_Administration.html](http://www.undp.org/content/undp/en/home/librarypage/crisis-prevention-and-recovery/Executive_Summary_Public_Administration.html).

## Using digital solutions to enable the basic functioning of government and to improve government performance

There is considerable variation across the PALOP-TL region in the performance of basic government functions, with some countries demonstrating the necessary preconditions conducive to a digital transformation, while others require more work to ensure administrative systems coherence and functioning.

On the one hand, the experiences of Angola, Cabo Verde and Mozambique demonstrate the door-step conditions for the creation of a digital government, with extant institutional systems and varying efforts being taken towards administrative simplification and efficiency. However, both Angola and Mozambique continue to grapple with persistent challenges, often linked to problems resulting from the lack of interoperability between government digital platforms, despite consistent efforts undertaken by governments to address this problem. On the positive side, all of these countries are working to improve their existing public financial management IT systems to enable greater and better supervision and interaction of central government with provinces, districts and/or municipalities, with the ultimate goal of improving the consolidation, oversight and monitoring of budget planning and execution and, in some cases, ensuring effective financial and fiscal decentralisation (Mozambique and Cabo Verde).

On the other hand, the experiences of Sao Tome and Principe and Timor-Leste reveal more moderate levels of administrative and institutional capacity, with the need for further strengthening basic requirements for the strategic use of digital technologies and information and communication technology (ICT) solutions, including, for example, the improvement of government communication networks, consistent use of email accounts, and data collection and management (including sharing and reuse).

Finally, and somewhat of an outlier, is the current experience in Guinea-Bissau, where government performance remains challenged with poor to limited functioning of key digital systems of government, including those for revenue generation (tax and customs) or human resources management.

### Looking forward: National development plans and public administration reform strategies

Understanding government strategies for improving public services delivery in the medium- and long-term is a necessary step for understanding the potential of digital government strategies to shape public policies and administrative procedures (digital by design) for digital public services delivery and for the uptake of digital technologies. Such a forward-looking vision must necessarily take into account national development plans and public administration reforms under implementation in the PALOP-TL region.

In general, the national development plans of all countries in the PALOP-TL region refer to the importance of developing and promoting the simplification of administrative and bureaucratic systems, making public services more responsive to citizens and businesses' needs, improving the business environment, promoting the transparency and accountability of the administration, and improving the capacity and effectiveness of government institutions at the central and local level (see Table 2.1). However, only Angola, Cabo Verde, Guinea-Bissau and Sao Tome and Principe explicitly consider digital government policies and programmes a strategic priority for the attainment of these objectives.

Priorities also vary according to the needs of each country, including the use of digital technologies as core features of public administration. For example, the government of Sao Tome and Principe has decided to prioritise the modernisation of the justice sector, namely through the digitisation of procedures and registers and the creation of a database for better case management (Ministério da Justiça, Administração Pública e Direitos Humanos, 2017). Similarly, Timor-Leste's "Guidelines for Public Administration Reform" (Governo de Timor-Leste, 2016) highlight the need to create a specialised unit to support the implementation of government-wide digital transformation strategies (under the supervision of the Prime Minister's Office) (see Section 3.2).<sup>1</sup>

The approach in other countries is quite different. For instance, in Mozambique, ICT responses to better manage the civil service are embedded in the "Strategic Plan for the State Administration and Civil Service Sector 2016-2019" (Ministério da Administração Estatal e Função Pública, 2016). In Angola, Reform and Modernization of Public Administration, one of the pillars of political and institutional development in Agenda 2025<sup>2</sup> (Ministério do Planeamento e do Desenvolvimento Territorial, 2008), refers to administrative de-bureaucratisation and simplification as a lever for improving the efficiency and effectiveness of public service delivery, leaving the more concrete measures of technological modernisation to the government's digital government strategic plans (see Section 3.1). A working group has recently been set up to draft a proposal for the new state reform<sup>3</sup>, which could provide a good opportunity to embed measurable results and



objectives to support the implementation of digital government policies and programmes in the reform proposal that will be submitted for approval.

In Cabo Verde, digital transformation is regarded as a cross-cutting vision shared among all government agencies, academia, businesses and civil society, and has a prominent place in the "Strategic Plan for Sustainable Development 2017-2021". This highlights the simplification of administrative procedures in all public services and the mainstreaming of ICT across government as catalysts to accelerate modernisation of the public sector (Governo de Cabo Verde, 2017). This strategy calls on the government to develop a new public sector reform strategy that takes this vision into account. The case of Cabo Verde is particularly interesting, because the impact of the use of digital technologies throughout the administration is not exclusive to the executive, as it also serves to promote the efficiency and transparency of the judiciary and the legislative branches of the state (see Box 2.1).

**Box 2.1. Cabo Verde: Legislative and Parliamentary Information System (SILP)**

The Parliament of Cabo Verde has been using SILP, Legislative and Parliamentary Information System (Sistema de Informação Legislativa e Parlamentar), to enable the digital processing of parliamentary activity.

SILP is inspired by BUNGENI, an application developed by UN/DESA (United Nations Department of Economic and Social Affairs) technicians. SILP allows, among others, the digital processing of parliamentary activity, automation of processes and electronic voting, as well as the management and publication of information produced by parliamentary activity.

More information available at [www.parlamento.cv/e-cidadao/](http://www.parlamento.cv/e-cidadao/).

Guinea-Bissau does not yet have an approved strategy for public administration reform, although the national development plan, known as "*Terra Ranka 2015-2020*", speaks to the "reform and strengthening of public administration" and is constituted of two pillars: "implementation and modernisation capacities" (Governo da Guiné-Bissau, 2015). As part of this strategy to enhance the efficient and effective management of civil, land and business records, the *Terra Ranka* proposes the creation of a multifunctional biometric national identity card, the development of geo-referential data through national territory cartography, and the improvement of legal entities registry services (RCCM and Tax Identity). In the area of public financial management, *Terra Ranka* aims to strengthen the capacities of the National Statistical Institute and to consolidate SIGFIP (*Sistema Integrado de Gestão das Finanças Públicas* - Integrated Public Financial Management System), the national public financial management system, as a means to reform local authorities and territorial administration and to decentralise the promotion of participatory development.

**Table 2.1. References to digital government in national development plans and public sector reform strategies**

Country	National development plan (NDP)	Public sector reform strategies (PSRS)	References to ICT and digital government
Angola	Angola 2025 and National Development Plan 2018-2022	Administrative Reform Program (PREA)	NDP and PSRS
Cabo Verde	Sustainable Development Strategic Plan 2017-2021	State Reform Agenda of Cabo Verde	NDP and PSRS
Guinea-Bissau	Strategic and Operational Plan 2015-2020 (Terra Ranka)	N.A.	NDP
Mozambique	Five-Year Government Plan 2015-2019	Strategic Plan for the State Administration and Civil Service Sector 2016-2019	PSRS
Sao Tome and Principe	Transformation Agenda for Sao Tome and Principe 2015-2030	Strategic Plan of the Ministry of Justice, Public Administration and Human Rights 2017-2021	NDP and PSRS
Timor-Leste	Strategic Development Plan 2011-2030	Public Administration Reform Guidelines	PSRS

## Government upstream functions and digital solutions

### *Public financial management*

Public financial management (PFM), defined as the ability to mobilise revenue, allocate resources, undertake public spending, and account for results and spending<sup>4</sup>, is a core government function – without the ability to collect and manage revenues, the state becomes unviable. Tasks such as the collection of taxes and customs revenues and fees, budget planning and expenditure management (including recording of disbursements and commitments) are often carried out by the competent services through the use of PFM IT systems. It is often also the case that PFM IT systems are donor funded and modular in their construction, with very different levels of access, use and automation according to the system adopted.

All countries in the PALOP-TL region have developed computerised PFM systems, although their respective levels of development and the use of IT applications widely vary. In Guinea-Bissau, although SIGFIP has all the necessary functionalities to support budget preparation, execution and accounting, the accounting module is only partially used, the general ledger is not complete, and the resulting quality of accounts is poor (IMF, 2014). Similarly, in Timor-Leste, FreeBalance, the government’s accounting system, is only partially used and ill-equipped for programme-based budgeting, which the government has sought to begin now. As a result, the government continues to rely on excel spreadsheets and manual adjustments to reflect the outcome of budgetary negotiations, which is inefficient and prone to errors (OECD, 2017). Among the more advanced of the PALOP-TL countries, Cabo Verde stands out as the only country to have adopted results-based and gender-sensitive budgeting (Governo de Cabo Verde, 2018).

In the area of revenue management, the experiences of the six PALOP-TL countries are highly uneven. For instance, while in Guinea-Bissau and Sao Tome and Principe, the settlement and payment of tax revenues is made manually in paper format (OECD, 2018), in Angola, Cabo Verde, Mozambique and Timor-Leste, the tax administration has made electronic forms available which, in some cases, can be submitted online (cf.

[www.portalsigt.minfin.gov.ao](http://www.portalsigt.minfin.gov.ao), [www.dnre.gov.cv](http://www.dnre.gov.cv), [www.at.gov.mz](http://www.at.gov.mz) and [www.mof.gov.tl](http://www.mof.gov.tl)). In addition, taxes can be paid electronically and/or in person at the bank in these countries.

In Guinea-Bissau, the settlement, collection and taxes/fees payment system is not interconnected to the central bank, nor to the sectoral ministries, nor is there yet a single treasury account. Timor-Leste is still working on the creation of a reliable fiscal identity through a process of data collection, registration and enrolment of natural and legal persons (OECD, 2018).

On the positive side, all countries in the PALOP-TL region use automated systems for the settlement, collection and payment of customs duties and other taxes (customs electronic data interchange systems), as well as customs clearance (all countries are using the “Automated System for Customs Data – ASYCUDA ++/ASYCUDA World”, with the exception of Mozambique, which is using the “Tradenet” online platform<sup>5</sup> – cf. [www.asycuda.org](http://www.asycuda.org) and [www.tradenet.mcnet.co.mz](http://www.tradenet.mcnet.co.mz)) (Box 2.2).

### Box 2.2. MCNET Single Electronic Window (Mozambique)

MCNet (Mozambique Community Network) is a public-private partnership that manages the "Single Electronic Window" (*Janela Única Eletrónica* - JUE) technology application. JUE is a complete trade facilitation solution that includes all the infrastructure and resources needed to establish an efficient, effective and sustainable operation and continuous growth for the customs clearance and monitoring of merchandise.

The JUE system is made up of two distinct IT subsystems which interact with each other: CMS and Tradenet. The CMS (customs management system) is a customs management platform used to process the customs clearance of goods. It provides the customs of Mozambique with information for processing and managing customs declarations and related activities. Tradenet is a computer platform that enables the interconnection and exchange of information with all users of the customs process, such as customs brokers, shipping companies, port operators, freight terminals, commercial banks, and other entities involved in customs clearance processes.

More information available at [www.mcnet.co.mz](http://www.mcnet.co.mz)

Experiences vary regarding the management of treasury balances, with countries experiencing delays and difficulties in calculating treasury balances (Guinea-Bissau and Sao Tome and Principe) and others being able to ensure the predictability of cash flow forecasts in the short and medium term (cf. PEFA reports “Cabo Verde 2015”, “Guinea-Bissau 2014”, “Mozambique 2015”, “São Tome and Principe 2013” and “Timor-Leste 2014” – cf. [www.pefa.org](http://www.pefa.org)).

In terms of government spending, experiences also vary, for example: Guinea-Bissau and Timor-Leste continue to utilise paper-based procurement procedures, although Timor-Leste has an eProcurement Portal ([www.eprocurement.gov.tl](http://www.eprocurement.gov.tl)), which is presented as a dashboard with information on all open tenders grouped by type of business. All awarded tenders can also be reviewed here. Looking forward, the portal can be systematised and more widely communicated across the public administration to support a transition to a full e-procurement portal, whereby service providers can submit tender proposals directly on line (OECD, 2017a). Similarly to Timor-Leste, Angola has recently launched two portals

through which several tools are made available to enable potential applicants to access the information and procedures required for participation in public tenders (cf. [www.contratacaopublica.minfin.gov.ao](http://www.contratacaopublica.minfin.gov.ao) and [www.fornecedores.minfin.gov.ao](http://www.fornecedores.minfin.gov.ao)). The new e-procurement system will be implemented in steps, with paper and electronic forms coexisting until full implementation. Cabo Verde and Mozambique are gradually introducing the necessary conditions (i.e. legislative and technology) for the use of electronic means for the procurement of goods and services.

Intergovernmental fiscal management and fiscal decentralisation, including linking PFM IT systems across institutions of government and connecting PFM in the districts or municipalities to central PFM terminals, are persisting constraints across PALOP-TL countries. This weakens revenue and budgetary coherence, as well as the consolidation and monitoring of budgetary execution across institutions and levels of government. Again, the particular challenges or priorities experienced across PALOP-TL countries differ, and some countries have made greater inroads than others. For example:

- SIM (*Sistema de Informação Municipal* - Municipal Information System) was created in 2002 and later implemented in all municipalities of Cabo Verde (cf. [www.nosi.cv](http://www.nosi.cv)). SIM makes available various management tools to municipal administrations, including modules on financial management, human resources, tax management, licensing and land management, property rights management and management accounting. In addition, SIM enables the integration of municipal administrations into the state communications network and the provision of the basic services of this network, such as access to email and the Internet. SIM is also used as a management and communication tool between the central administration and the municipalities, and among the municipalities themselves. SIM has enabled municipal administrations to improve the timeliness of their audits, and could thus be a model for other PALOP-TL governments. However, Cabo Verde still needs to take the necessary steps to consolidate the information provided by SIM on the municipal budgets within the government national accounts.
- Mozambique is about to connect all local governments and districts to the e-SISTAFE central terminal through the development and roll out of PFM modules to local administrations. E-SISTAFE does the following: makes all accounting records of all activities at the time they are carried out; makes it possible to pay most expenditure directly, i.e. by direct transfer to the beneficiaries' accounts, increasing security of payments; ensures timely extraction of reports; and provides essential information for the management (cf. [www.cedsif.gov.mz](http://www.cedsif.gov.mz)).

Progress in each or any of these areas is based on digital technologies and would benefit substantially from dedicated efforts to establish a digital PFM ecosystem (Table 2.2).

**Table 2.2. PFM electronic systems**

Country	Central	Local	Customs
Angola	SIGFE (Integrated Financial Management System)	N/A	ASYCUDA World (Automated System for Customs Data)
Cabo Verde	SIGOF (Integrated Online Budget Management System)	SIM (Municipal Information System)	ASYCUDA World (Automated System for Customs Data)
Guinea-Bissau	SIGFIP (Integrated Public Financial Management System)	N/A	ASYCUDA ++ (Automated System for Customs Data)
Mozambique	e-SISTAFE (Electronic State Financial Management System)	e-SISTAFE (Electronic State Financial Management System)	Tradenet
Sao Tome and Principe	SAFE-e (Integrated State Finance Management System)	N/A	ASYCUDA World (Automated System for Customs Data)
Timor-Leste	FreeBalance (Government Accountability Software)	N/A	ASYCUDA World (Automated System for Customs Data)

Given its importance in most least developed countries (LDC), the management of external aid financial resources (in the form of loans or grants) is often regarded as a government function that deserves a separate analysis. In the case of PALOP-TL countries, perhaps with the exception of Angola, development aid is particularly important in the broader context of public financial management. In this respect, it is worth highlighting two examples where the use of digital technologies has served to support and make more efficient and transparent the management of development aid resources<sup>6</sup>:

- The Aid Transparency Portal of Timor-Leste is the central repository for all aid information in Timor-Leste. It aims to improve aid transparency, accuracy and predictability and to ensure that the assistance provided is efficient and effective - [www.aidtransparency.gov.tl](http://www.aidtransparency.gov.tl).
- In Guinea-Bissau, the National Authorizing Office Supporting Unit (NAOSU) is the technical unit of the Ministry of Finance responsible for managing the funds awarded to the country by the European Union external assistance services. In 2010, NAOSU started the development of an unprecedented computerised document management system for processes and procedures in accordance with the ISO 20000 standard in order to facilitate the management of documentation flow. Currently, the system is still in the prototype phase. The document management system not only ensures the security and reliability of records, but also compliance with the procedures and deadlines for contractual and financial management imposed by the European Union.

### *Administration of government*

Effective and efficient administration of government implies a capacity to make and co-ordinate policy at the centre of government, manage government records, and communicate both across the administration and with the population (cf. United Nations/World Bank, 2017). The development of a digital government approach can be instrumental to achieving this goal.

Making policy at the centre of government requires, among other tasks, the ability to collect, process and cross-reference data and statistics to inform the formulation of public policies. However, data and statistical data collection present particular challenges for PALOP-TL countries, as they do for developing countries elsewhere, as low and often unpredictable funding, combined with limited technical capacities, have resulted in irregular and low-quality data collection, weak systems and capacities for data analysis, and thus poor monitoring and evaluation of the effectiveness of public sector policies.

Based on the assessment undertaken, several recommendations can be made, for instance, Cabo Verde could develop applications and systems to archive, disseminate and grant access to statistical products and indicators by citizens and companies, available on an open, free and machine readable format; whereas Mozambique could implement similar initiatives in the context of the National Institute of Statistics, including the production of vital statistics.

In Timor-Leste, unlike the other countries of the PALOP-TL region, statistical data collection and management is the responsibility of Directorates General on Statistics and Policy and Research, which have enabled statistical data collection to benefit from the capabilities of the Ministry of Finance – one of the more capable ministries in government.

Managing government records and communicating both across the administration and with the population are tasks which can be accomplished more effectively and efficiently through the use of government digital communication mechanisms<sup>7</sup>, including telecommunication networks, government portals and email services, videoconferencing systems and database management systems, among other ICT, which can support varying public administrative functions.

However, in the PALOP-TL region, government telecommunication networks are largely non-existent (Guinea-Bissau and Sao Tome and Principe), or they function only at the level of central government (Angola<sup>8</sup> and Mozambique<sup>9</sup>) (see Box 2.3). More recently, the Government of Timor-Leste has signed a contract with Timor Telecom (the largest telecommunications company operating in the country) for the supply, installation and configuration of the main domestic fibre optic network. The project will allow the interconnection between the administration of 12 municipalities and the data centre hosted at the prime minister's office, which, in the long run, will allow the government to have its own private communications network. Currently, Cabo Verde is the only country where such mechanisms are accessible at all levels of government (central and local)<sup>10</sup>.

**Box 2.3. State private network (Angola)**

In Angola, communication between various central government departments (G2G) is carried out through the state's private network (*Rede Privativa do Estado*), an intranet service that aims to reduce communication costs, ensure the security and privacy of communications and, in general, improve the efficiency of procedures.

To this end, the state's private network is based on a standard system of email addresses, video-conferencing and data and service sharing between government departments. It already interconnects 25 ministerial departments and is intended to be used in the future as a platform for citizens to access publicly available information via the Internet.

Source: Governo de Angola (2014). More information at [www.governo.gov.ao](http://www.governo.gov.ao).

Every PALOP-TL country has a government portal<sup>11</sup>, and in Angola, Cabo Verde, Mozambique and Timor-Leste these exist in an integrated format, providing a single access point to the portals of the other ministries or agencies (see Section 4.3). Conversely, in Guinea-Bissau, Mozambique and Sao Tome and Principe, government email services are not widely used, and civil servants rely on their own private email accounts, which raises security and integrity risks.

The fact-finding mission observed a common trend in the general resistance to sharing government data between public departments, making it difficult to cross check government data or to create and maintain shared government databases (for example, between tax and social security services). Government departments also often demonstrated a resistance to hosting data in the government data centre (non-existent in Guinea-Bissau). These trends threaten or undermine the viability of strategic digital projects, such as the creation of a single identification number and the promotion of a data-driven public sector (see Section 4.2).

One of the persisting challenges developed and developing countries face when implementing digital government strategies is overcoming such atomised agency-centric approaches, and ensuring that the process is managed in an integrated and coherent way. In line with recommendation #6 of the OECD Recommendation on Digital Government Strategies (OECD, 2014), commonly agreed interoperability frameworks, data standards and the use and sharing of data centres act as important levers to support a coherent, efficient and sustainable digital transformation of the public sector.

Interoperability frameworks that are built upon common architecture and data standards enable ICT platforms to communicate among themselves and governments to better know and understand the needs of citizens and business, which can result in the simplification and tailoring of digital public services delivery.

Almost across the board, PALOP-TL countries are faced with the challenges of enabling the interoperability of their public platforms (Table 2.3).

**Table 2.3. Interoperability framework in PALOP-TL countries**

Country	Initiatives undertaken
Angola	The government's private network ( <i>Rede Privativa do Estado</i> ) connects government agencies and provides a common infrastructure for shared digital services across the public sector (see Box 2.3). The network is considered an important first step for the development of an interoperability platform, which is a top priority of INFOSI, the national digital government agency. After a major investment in the government's private network, the development of interoperable services and solutions would enhance the efficiency and connectivity of public administration and enable more integrated services delivery to business and citizens.
Cabo Verde	Common standards allowing information and data exchange are already adopted by several public platforms in the country. In addition, and with the objective of improving the confidentiality and security of communications between state services, Cabo Verde created a state-owned technology network that connects virtually all public sector entities, allowing them to access a range of services including email and government and municipal management applications. The Information Society Operational Unit (NOSI) has also developed and currently manages the IGRP (Integrated Government Resources Planning), a platform for the creation and management of electronic government solutions in a simple, safe, integrated, and sustainable way (see see Box 2.4).
Guinea-Bissau	The country hasn't made much progress in the area of interoperability compared to other PALOP-TL countries. However, interoperability is a priority for the government and could begin with the audit of existing digital systems, and subsequent design and inter-agency negotiation of an interoperability roadmap.
Mozambique	The Interoperability Project ( <i>Projeto de Interoperabilidade</i> ) started in 2013 connecting different IT platforms with the central government. Nevertheless, further efforts are still needed in order to increase information and data exchange, including the adoption of interoperability standards and the development of a system-thinking culture across the different sectors and levels of government.
Sao Tome and Principe	The country hasn't made much progress in the area of interoperability compared to other PALOP-TL countries. However, as in Guinea-Bissau, interoperability is a priority for the government and could begin with the audit of existing digital systems, and subsequent design and inter-agency negotiation of an interoperability roadmap.
Timor-Leste	The Ministry of Development and Institutional Reform, headed by the Prime Minister, provides and maintains an intranet service for the central administration, which includes data sharing, digital archive and database management. However, the maintenance of the network is inefficient and these services are not yet available to support communications between the central government and municipal administrations. In order to solve these problems, the National Connectivity Project aims to establish a separate Internet gateway for the government, improving the connectivity between Dili and the local administration offices and developing a root information system between the central government and municipal administrations.

Given the current situation, it is possible to conclude that while in Guinea-Bissau, Sao Tome and Principe and Timor-Leste, the interoperability framework still does not exist (although, in Timor-Leste, steps have been taken towards creating a state communications network, which will sooner or later lead to the creation of an interoperability framework), an interoperability plan is underway in Angola and Mozambique. In Cabo Verde, common standards allowing information and data exchange have been adopted by several public platforms in the country.

The progressive integration of digital technologies into the public sector generates several common needs (e.g. hardware, software, services). The existence of shared services to respond to these common needs and generate economies of scale across the public sector is a helpful trend across the OECD member and partner countries. The most basic shared services adopted by PALOP-TL countries, except Guinea Bissau, are public data centres or data rooms capable of hosting, storing and managing information from different government institutions.



**Box 2.4. IGRP - Integrated Government Resources Planning (Cabo Verde)**

In response to the needs of citizens and businesses, NOSI (Information Society Operational Unit) developed the IGRP (Integrated Government Resources Planning) system. The IGRP system is an innovative model, created from scratch by NOSI, which is based on a unique, client-oriented technology platform that provides integrated packages of governance solutions with efficiency gains in the public sector, and improved transparency and accountability in government functions, as well as reducing costs in public administration. The IGRP bases its entire logic on the principle of "write once, read many", i.e. information (in particular for citizens and businesses) is not duplicated within the administration and can be accessed in an uninterrupted manner between departments.

Being delivered as a service model (PaaS), the platform allows public sector entities to use its services without having to deal with necessary ICT infrastructure. The progressive adoption of this platform by the public sector institutions of Cabo Verde allows an important integration of efforts, enabling the information systems from different sectors of government to better communicate and share information in an optimised way. Interoperability is, in this sense, one of the key benefits of IGRP.

Source: NOSI (2018), Framework IGRP – Integrated Government Resources Planning, Praia, <https://www.nosi.cv/index.php/pt/servicos1/desenvolvimento-aplicacoes>.

In Angola and Mozambique, the proliferation of data centres and data rooms is one of the key challenges identified to guarantee the security of public sector information, to optimise public digital infrastructures, and to secure an efficient use of the citizen and business data managed by the public administration. Responding to this scenario, both countries inaugurated public data centres (Angola in 2014 and Mozambique in 2015) but face now the challenge of developing services aligned with policy levers (see Section 3.4) that can better enforce the use of the data centre across the administrations.

Cabo Verde also faces this problem, however, the public data centre (available since 2015) has a very central role in the digital government policy of the country, and the services and applications managed by NOSI are totally integrated or aligned with this infrastructure. The IGRP solution (see Box 2.4) is based in the data centre and contributes to a strategic integration of digital government projects and initiatives in the country. The Government of Cabo Verde should continue improving its public data infrastructure, namely through the data centre, providing more and better services to public sector institutions<sup>12</sup>.

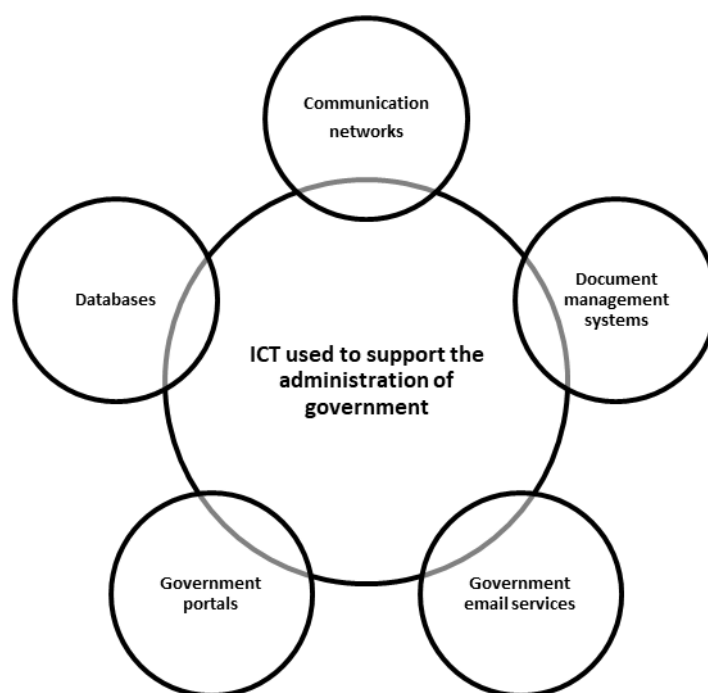
In Sao Tome and Principe and Timor-Leste, public data rooms are available and distributed across the public administration. Due to the lack of policies, initiatives and resources clearly allocated to improve this area, both countries also face the problem of public institutions using private national or international service providers to store public sector information. The sensitivity of public information, or even of citizens' personal data, is strongly at risk due to the mentioned inexistence of a clear policy and mandate. Even basic services, such as email accounts used by public servants with professional purposes, are based on private and non-professionally oriented systems (e.g. Gmail). The absence of a national data centre is critical and identified by public stakeholders as a priority.

In Guinea-Bissau, there is an urgent need for a data centre to enable the sustainable digitalisation of the public sector and optimise the interoperability of the government's information systems. Due to the very early stage of digitalisation of the country's public administration, the digitalisation of public registers and processes is being made using frequently basic computer hard drives or external drives. The absence of a data centre compromises the efforts underway.

Although the six countries have significantly diverse situations, the need for shared, coherent and safe data infrastructure is recognised as a central requisite for the coherent and sustainable development digitalisation of the public sector<sup>13</sup>.

Based on the analysis undertaken in this section, it is possible to conclude that some digital solutions (indicative list) are currently being used in some PALOP-TL countries to support the administration of government (Figure 2.2).

**Figure 2.2. Indicative list of ICT used to support the administration of government in PALOP-TL countries**



### *Management of the civil service*

Civil service management is a core function of government, and yet it is an immensely difficult area to reform, and an area where overambitious politics and poor sequencing have often hindered development efforts. The first task for a developing country government, particularly those countries at an earlier stage of development, is to account for the size and professional profile of civil servants (including their current professional category, remuneration and seniority, as well as their biographical record). This implies conducting civil service censuses, identification processes and professional skills audits – all of which are best achieved using digital technology<sup>14</sup>.

In Guinea-Bissau, the lack of knowledge about the number and designation of public workers has created considerable instability in payroll and pensions in recent years, and

there are regular reports of workers, pensioners and their families receiving either undue or excessive payments for terminated contracts or even deceased workers. Despite the country having developed SIGHRAP (the Integrated Human Resources Management System of the Public Administration), this management system still lacks the necessary IT support tools, which means that it is therefore necessary and urgent to create a government database to enable a single payroll management system. The Government of Guinea-Bissau should give priority to digitising the public service registry in order to immediately stabilise the payroll and ensure government oversight and management of human resources. According to government officials, priority should be given to the rationalisation of security personnel (police and military), teachers and health professionals.

In order to tackle similar challenges, the governments of Angola and Mozambique have undertaken a process of collecting and storing biometric data on public administration workers to reduce the number of "ghost workers" and better manage the civil service payroll<sup>15</sup>. The challenge now is to keep the biometric database of civil servants updated and to avoid the need for constant identity checks. To this end, the Government of Angola could consider taking advantage of the new identity card features to store and automatically update the information on the life cycle of public administration employees.

Several PALOP-TL countries face problems of data sharing and management due to the poor integration and interoperability of human resource management information systems, or inconsistencies between them, although some countries have taken commendable steps to solve these challenges. In Cabo Verde, the Public Administration Human Resources Database allows for the sharing of information on civil servants. In Timor-Leste, the Personnel Management Information System combines an employee and manager portal, both of which are connected to a central database that provides managers with direct access to human resources data. These could both be experiences or models that other countries could learn from. Mozambique is currently developing a human resources management system that will integrate information on the entire life cycle of public administration employees. In Sao Tome and Principe, setting up a similar system is particularly important, notably to automate the process of authorising the payment of salaries of administration officials.

As countries begin to make the transition from e-government to digital government, there will also be a need to create a career path for ICT specialists (e.g. data analysts and scientists) to recognise this professional cadre and to provide adequate remuneration to ensure talent retention (see Section 3.6).

### ***Local governance***

Local governance can take many different forms, with varying degrees of administrative, fiscal and political autonomy. The steps for decentralisation often depend on the political and socio-economic context of the country and its level of development. Across PALOP-TL countries, different levels of political decentralisation (from democratic decentralisation in Cabo Verde, Mozambique and Sao Tome and Principe to administrative de-concentration in Angola, Guinea-Bissau and Timor-Leste) have directly influenced the variable needs and capacities for local government in the areas of planning, implementation, monitoring and evaluation of public policies, programmes or projects, and their impacts, at the local level.

Irrespective of the model of decentralisation adopted, across the board in PALOP-TL countries there is a general need to use digital technologies to improve the links between central government and local administrations in order to facilitate the flow of information

between different levels of government – which ultimately serves to ensure the better definition of public policies and to ensure that the government is more responsive to the needs of its citizens.

Based on a common technological base, the government of Angola is using SIIGAT (*Sistema Integrado de Informação e Gestão de Administração do Território* - Integrated Territorial Administration Information and Management System) for the collection, data processing and information management of local government bodies, which is part of a strategy, led by the Ministry of Territorial Administration, towards the modernisation and technical, technological and organisational capacity building of the provincial governments and the municipal administrations ([www.siigat.com](http://www.siigat.com)). Currently, the Government of Angola aims to improve the performance of SIIGAT in order to collect indicators of public policy performance at the local level.

As mentioned above, Cabo Verde is making use of SIM (*Sistema de Informação Municipal* – Municipal Information System) to facilitate information flows between the central administration and the municipalities, and among the municipalities themselves.

In Mozambique, effective decentralisation of land-use management instruments is limited to some districts, municipalities and provincial geographical and cadastral services (*Serviços Provinciais de Geografia e Cadastro*). This constraint affects the public services capability of districts in land-use planning, land management and cadastral services. However, experience from other countries (e.g. Cabo Verde) shows that the delivery and management of cadastral services (including geo-referencing capabilities and technologies – see Box 2.5) is a crucial factor in attracting national and foreign investment projects into regional and local levels, particularly in the area of agriculture and tourism (OECD, 2018).

#### **Box 2.5. IDE-CV Spatial Data Infrastructure (Cabo Verde)**

The Spatial Data Infrastructure of Cabo Verde (IDE-CV) is a technological platform created with the objective of making available (for publication or consultation) resources on the existing geo-referenced geo-spatial data for the public and the private sectors. The IDE-CV follows the standards defined by the Open Geospatial Consortium (OGC).

Among others, IDE-CV's objectives are to promote the production and updating of geo-spatial data by the various public agencies, municipalities and private entities, and to enable rapid identification and free access to the geospatial data services.

*More information available at [www.idecv.gov.cv](http://www.idecv.gov.cv).*

Notwithstanding these exceptional cases, in the PALOP-TL region, local governments still find it difficult to ensure administrative public tasks are completed efficiently and effectively because they lack adequate human, financial and technical capacities, and in many cases, because they have not yet developed an appreciable sense of the potential for data and digital technologies.

## Using digital technologies to deliver government downstream functions

Enabling effective and efficient public service delivery is a challenge for all PALOP-TL countries, even among the more advanced economies of the cluster. A review of the six PALOP TL countries has shown that there are at least three key areas in which the use of digital technologies could help: 1) through the digitisation of public records (civil, criminal); 2) in the development of identification and registration systems for service users; and 3) in the delivery of public services where otherwise the government would not have the administrative capabilities.

The use of digital solutions to improve the provision of services to populations and businesses in the PALOP-TL region has perhaps been most visible in the physical preservation of public records (civil and criminal) – as evidenced in Guinea-Bissau, Sao Tome and Principe and Timor-Leste – and in their gradual digitisation, creating the basis for the civil, legal and proprietary rights of citizens and companies, and securing these rights or interests against all others.

The maintenance and digitisation of registries is often seen as the bedrock of effective public services delivery, and a foundation for digital transformation. It is not possible to develop an integrated strategy for improved public services delivery without first collecting, digitising, processing, sharing and cross-referencing the data available on citizens and companies in the civil and business registries. To this end, the World Bank launched the Identification for Development (ID4D) initiative, aimed at helping countries design solutions and implement new systems to increase the number of people with official identification (World Bank, 2018).

In line with the above, in Cabo Verde, the computerisation and digitisation of registries and notaries – a process started in 2005 – is a central component for digital government in the country. Currently, the full digitalisation of commercial and vehicle records is still ongoing under the Project of Support to Improvement in Quality and Proximity of Public Services of PALOP and Timor-Leste (PASP/PALOP-TL), an intervention co-financed by the European Union and Portugal, and implemented by the Portuguese Development Agency, Camões, I.P. PASP is also present in Guinea-Bissau where priority has been given to the organisation of the physical archives, followed by the digitisation of civil, land and vehicle registration documents, since registration processes are still manual. In Sao Tome and Principe, several digital registers are currently under development (citizen registry, business registry, property registry, land registry, vehicle registry, and others). The government, also aligned with PASP, has begun the computerisation of the civil and notary registry, which includes the digitisation and cataloguing of 360 000 birth, marriage and death registers, and the development of an integrated file management system. This project will greatly facilitate citizen interaction with public administration services, such as social security, health services or educational establishments. In Timor-Leste, a Demography Information Management System has been established through the same Project, in which the Ministry of Justice intends to store and manage the information related to civil registries, passports, identity cards, criminal records and electoral cards (OECD, 2018).

Alongside efforts undertaken to digitalise records, many PALOP-TL countries are also taking steps to ensure the further provision of registration services. This is the case in Guinea-Bissau, where commercial registers have been computerised (see Box 2.6).

In Timor-Leste, the biggest challenge is in the register of land and property (currently non-existent). To this end, geographic cadaster is a priority, since without this data it is not possible to set up a public register of land and property. The Spatial Data Infrastructure of

Cabo Verde (see Box 2.5) could serve as a model for the geographic cadaster in Timor-Leste.

Full digitalisation of civil registries has created the necessary conditions to cross-reference and interconnect citizen identification systems (civil and electoral identification, taxpayer numbers, etc.), but also to simplify procedures and enhance service delivery efficiencies. In most PALOP-TL countries, the ultimate goal is to create a single citizen identification card (which already exist in Angola and Cabo Verde) and a digital identity framework to support the delivery of public services transactions (see Section 4.2). Both initiatives could decrease operational costs, expedite procedures and improve data sharing among public service departments.

**Box 2.6. Digitisation of commercial registers: The case of RCCM-OHADA  
(Guinea-Bissau)**

RCCM (Registre du Commerce et du Crédit Mobilier) is an integrated system that enables Guinea-Bissau to have reliable information and real statistics on business creation and activity. The RCCM-OHADA is constructed as a pyramid: at the base, local registers are kept in the registry of the competent jurisdiction, or by a body designated by the state; information from the different registers is centralised in a national file; and at the top of the pyramid, the regional file, kept with the CCJA (Common Court of Justice and Arbitration), ensures the centralisation of information recorded in the national files. Complete digitisation enables the preservation and disclosure of reliable and up-to-date information, in real time and in electronic format, for all stakeholders and companies. The purpose of this information sharing is to promote the transparency of business environment in the OHADA member states.

More information available at [www.ohada.org/rd/fr/rccm-ohada](http://www.ohada.org/rd/fr/rccm-ohada).

In Angola, improved public services delivery has been supported by the standardisation of citizen identification numbers. The new identity card (*bilhete de identidade*), launched in 2017, represents a significant legal and technical step forward as it stores information on the civil identification number, taxpayer number, social security number, birth certificate, and voter card number. In the medium term, the government's plan is to merge the taxpayer number and the identity card number (OECD, 2018). Adopting a digital identity framework will allow for the sharing of information and data between various entities, facilitating the provision of services to citizens (see Section 4.2).

In Cabo Verde, the new *Cartão Nacional de Identificação* (National Identification Card), which was launched in 2018, is an initiative of the National System of Identification and Civil Authentication (the central and transversal management system of identification and civil authentication). Following the launch of the new *Cartão Nacional de Identificação* (which integrates data on civil, tax, social security and electoral identification of the cardholder) (see Section 4.2) and the electronic passport, the Cabo Verdean authorities now envisage the progressive development of an integrated database as a platform for the development of an automatic voting registration system (potentially conducive to the creation of an electronic voting system).

In Guinea-Bissau and Sao Tome and Principe, the administration has made some progress in the identification systems and registries, adopting minimum conditions for the issuing of biometric passports, driving licenses and identity cards.

Regarding Mozambique and Timor-Leste, one of the major problems in the provision of public services lies in the deficiencies of the citizen identification system. While in Mozambique, the proliferation of parallel and non-interoperable identifier numbers have been hampering government capacity to develop a sound identification system, in Timor-Leste, the majority of the population does not yet have an identity card (although the EU-funded PASP PALOP-TL project has created conditions for a substantial extension of the identity card network), and citizens are using voter cards as an alternative. In addition, several Timorese public services have recently developed their own identification systems in a non-interoperable way (electoral commission, civil registry, tax administration, social security, etc.), thus missing the opportunity of building from the start integrated public base registers.

Digital technologies have also been playing a crucial role in the delivery of public services where otherwise the government would not have the capabilities to do so. This is namely the case of the provision of healthcare services, especially at the local level, where there are often no medical specialists or equipment available to meet the needs of the population.

In Angola, the Ministry of Health decided to develop a national telemedicine network through the creation of telemedicine units in strategic locations to enable distance education and tele-expertise activities, using software adapted to local conditions. Cabo Verde has also been investing in training and telemedicine equipment to mitigate the constraints caused by the limited number of doctors and medical diagnostic equipment. The national telemedicine service has enabled medical consultations by videoconference, namely in the areas of medicine where there are no specialists, except in the main hospitals (see Section 4.3).

In Sao Tome and Principe, an important telemedicine project was developed, based on an interface that can be connected to any laptop and medical equipment, allowing images, as well as the patient's summary to be transferred to an online environment. This information can be shared with doctors in different geographies, enabling the exams to be analyzed by specific medical specialists. In practice, setting medical appointments, uploading clinical files and exams and manipulating them directly, as well as direct patient-doctor contact, are possible with a regular computer with a simple internet connection (1 MB). The project was developed by Marquês de Valle Flôr Institute and funded by Camões –Institute for Cooperation and Language, I.P. Portuguese Ministry of Foreign Affairs, within the broader Program “Health for all”, in partnership with the Ministry of Health of Sao Tome and Principe.

In Timor-Leste, the provision of healthcare services relies exclusively on non-digital solutions, especially in rural areas where ICT use is infrequent. For this reason, the government has established partnerships with international and non-governmental organisations (NGOs) to support the computerisation of services, promoting the proximity, quality and efficiency of service delivery. One such organisation is Catalpa, an NGO that has been developing applications aimed at improving the quality and speed at which rural communities access health services. This is the case of the *Liga Inan* project, which is using mobile phones to connect expectant mothers with health providers to improve the likelihood of a healthy pregnancy, birth and post-natal period (see Box 2.7).

**Box 2.7. The Liga Inan project (Timor-Leste)**

Officially launched in March 2013, *Liga Inan* is implemented by Health Alliance International (HAI) and Catalpa International, in partnership with the Ministry of Health.

*Liga Inan* cuts across geographic barriers to directly connect women to better health care in a country with high maternal and neonatal mortality. Health providers use a mobile phone to register expectant mothers, track their progress, know when they go into labour and make arrangements for attending the delivery. Mothers continue to receive support through the first six weeks of the newborn's life.

*Liga Inan* also sends automated promotional health information via SMS to all registered pregnant mothers throughout their pregnancy and for six months after delivery to help them make better decisions about their pregnancy and link them with regular pre and post-natal care.

More information available at [www.ligainan.org](http://www.ligainan.org).

The education sector also faces several challenges, which sometimes can only be circumvented through the use of digital solutions. In Angola, the Ministry of Education has been implementing an ambitious project called "Meu Kamba", which consists of the installation and usage of technological tools in classrooms through access to interactive content, videos, exercises and other tools available on computers. The project intends to benefit schools countrywide and is targeted at teachers and students from the fifth and sixth grades (cf. [www.cnti.gov.ao](http://www.cnti.gov.ao)). Cabo Verde has been implementing a similar project called "Mundo Novu" ([www.mundunovu.gov.cv](http://www.mundunovu.gov.cv)). Both projects intend to ensure the access and usage of pedagogical content by teachers and students that could otherwise not be used. In Sao Tome and Principe, the Solar Schools' project (Escolas Solares), implemented by TESE (an NGO working in the areas of energy and water supply), used standardised photovoltaic solutions for lighting classrooms and delivering power supply for school management activities in over 30 public primary schools countrywide, thus allowing the delivery of adult literacy courses after working hours and the use of computers and other ICT. In Timor-Leste, Catalpa developed an online communication chat system called "Conversa", through which school principals working in the most remote areas can present their claims to the Ministry of Education on the schools' physical condition and other logistical problems.

***Diagnosing results***

The particular added value in the use of digital technologies to administer or fill gaps in the delivery of core functions of government across PALOP-TL countries can be seen in their ability to help governments leapfrog particular stages of development, for example, in the quality and coverage of public services delivery.

Overall, the adoption of digital technologies provides immediate and much needed help to raise taxes and revenues and manage human resources, and serves to build trust between citizens and the state by rendering the government more accessible.

In spite of the efforts undertaken by the PALOP-TL countries to install and develop digital PFM systems, its usage has shown uneven results. Frequently, highly sophisticated



applications coexist with manual, paper-based procedures, especially at the level of budgeting, revenue collection and procurement procedures.

Some countries have already begun to develop electronic public procurement systems, thus ensuring the necessary efficiency and transparency in the awarding procedures. Others have created doorstep conditions for the settlement and payment of taxes by electronic means, alongside analogue mechanisms, thus enabling a greater capacity to collect fees and tax revenues. All countries in the PALOP-TL region are using automated systems for the settlement, collection and payment of customs duties and other taxes, as well as customs clearance. This is an exceptional situation that may be explained by the need (often imposed by multilateral organisations) for countries to use standardised customs management systems to ensure and expedite international transactions.

The diagnosis also presents uneven, if not paradoxical, results concerning governmental communication systems and networks, as it was possible to testify within the same country the coexistence of complex state owned telecommunication networks and the usage of private email accounts by state officials, raising security and integrity risks.

There appears to be widespread recognition of the enormous usefulness of using digital solutions to collect, store and cross reference data on the human resources of public administration, with the aim of quantifying the number of workers and pensioners, and thus avoiding the risk of paying undue wages and pensions. In some countries, the collection of biometric data is essential for ensuring the accurate identification and quantification of public officers, generating considerable savings.

Much more needs to be done to bridge the distance between the local and central levels of governments, although some countries have developed very efficient communication systems to facilitate information flows between the central administration and the local authorities.

There <sup>16</sup>is a common ground of understanding shared by all PALOP-TL governments around the need to preserve and digitise public records (civil, criminal, commercial, etc.) as a basic precondition to further process, share and cross reference data on citizens and companies. This is deemed as essential for creating credible identification systems and supporting the efficient delivery of public services transactions.

Health and education sectors have also been using ICT to ensure the provision of a service that the government would otherwise not be able to provide. The combination of the appropriate IT solutions (from telemedicine units and video conference systems, to computers and mobile phones) and training programmes involving doctors, patients, teachers and students, together with the establishment of partnerships with international organisations and NGOs to support service delivery, especially in the most remote areas, have shown an enormous flexibility and capacity to assist governments to deliver basic services and leapfrog particular stages of development.

## Notes

<sup>1</sup> Measure already implemented through the creation of TIC Timor, the Timorese digital government agency.

<sup>2</sup> The National Long-Term Development Plan. The new National Development Plan (2018-2022) has recently been approved (Ministério da Economia e Planeamento/Governo de Angola, 2018). It is the National Mid-Term Development Plan and it aims to implement the long-term strategic development options contained in the Angola 2025 Long-Term Strategy (which, in turn, should be reviewed and extended by 2050).

<sup>3</sup> The former Administrative Reform Program (PREA) has been implemented from 2000 to 2016.

<sup>4</sup> According to the OECD (2003), Public Financial Management (hereinafter PFM) can be defined as the set of laws, rules, systems and processes which cover “all phases of the budget cycle, including the preparation of the budget, internal control and audit, procurement, monitoring and reporting arrangements, and external audit”. Strong PFM systems are essential for effective and sustainable economic management and public service delivery. It is a lever to broader country development, to raising revenues effectively, planning and executing budget decisions reliably and transparently, and to building trust for donors and investors (CIPFA, 2009). In fact, states are effective and accountable when they are underpinned by good PFM institutions and systems. PFM is at the core of the government's administrative performance – without it, the state becomes unviable.

<sup>5</sup> The design of Tradenet was based on the Singapore model, also deployed in Ghana and Madagascar. The system has two main components: Customs Management System (CMS), and TradeNet electronic data interchange.

<sup>6</sup> In the broader context of budgetary transparency, see the "Recommendation of the Council on Budgetary Governance" (OECD, 2015), accessible at [www.oecd.org/gov/budgeting/principles-budgetary-governance.htm](http://www.oecd.org/gov/budgeting/principles-budgetary-governance.htm) and the “OECD Budget Transparency Toolkit” (OECD, 2017b), accessible at [www.oecd-ilibrary.org/governance/oecd-budget-transparency-toolkit\\_9789264282070-en](http://www.oecd-ilibrary.org/governance/oecd-budget-transparency-toolkit_9789264282070-en).

<sup>7</sup> Telecommunications (e.g. satellite and fibre optic networks, document management systems, email services, portals) are important tools for enabling communications and document management in government departments which, in turn, can facilitate better co-ordination and collaboration with the public.

<sup>8</sup> *Rede Privativa do Estado* (State Private Network).

<sup>9</sup> GovNet.

<sup>10</sup> *Rede Tecnológica Privativa do Estado* (State Private Technological Network).

<sup>11</sup> During the drafting of the current report, the Government portal of Guinea-Bissau was offline.

<sup>12</sup> According to the feedback received from several stakeholders during the fact-finding mission undertaken in Cabo Verde, NOSI should continue its efforts to reduce the fees that institutions are required to pay to benefit from this infrastructure and assure that it constitutes a stimulus, not an obstacle through unbalanced competition, to digital private service providers in the country.

<sup>13</sup> The governments of the region should prioritise the development of these infrastructures, enabling its use as a shared service for the administrations. Based also on the experience of the most advanced countries of the region in this specific domain (Angola, Cabo Verde and Mozambique), the construction of public data centres should be assumed as the first step towards more sustainable data management. Attractive business models and effective policy levers (see Section 3.4) are required to secure their effective use.

<sup>14</sup> For a more advanced phase of the core government functions development process, see the following OECD reports on strategic human resources management, merit-based recruitment and promotion, performance management, capable leadership, gender and inclusiveness: “Skills for a High Performing Civil Service” (OECD, 2017), accessible at [www.oecd.org/gov/skills-for-a-high-performing-civil-service-9789264280724-en.htm](http://www.oecd.org/gov/skills-for-a-high-performing-civil-service-9789264280724-en.htm), “Government at a Glance 2017” (OECD, 2017), accessible at [www.oecd-ilibrary.org/governance/government-at-a-glance\\_22214399](http://www.oecd-ilibrary.org/governance/government-at-a-glance_22214399), and “Public Servants as Partners for Growth” (OECD, 2011), accessible at [www.oecd.org/gov/pem/publicservantsaspartnersforgrowth.htm](http://www.oecd.org/gov/pem/publicservantsaspartnersforgrowth.htm).

<sup>15</sup> “Governo reduz custos com salários de trabalhadores da função pública”, in “Mercado” (29/07/2016), [www.mercado.co.ao/uncategorized/governo-reduz-custos-com-salarios-de-trabalhadores-da-funcao-publica/](http://www.mercado.co.ao/uncategorized/governo-reduz-custos-com-salarios-de-trabalhadores-da-funcao-publica/). “They missed proof of life: 31 000 workers at risk of losing salaries in Mozambique”, in “Club of Mozambique” (04/07/2016), <http://clubofmozambique.com/news/they-missed-proof-of-life-31000-workers-at-risk-of-losing-salaries-in-mozambique/>.

## References

- CIPFA (2009), Public Financial Management and the PFM International Architecture – A Whole System Approach, The Chartered Institute of Public Finance and Accountancy, London.
- Governo da Guiné-Bissau (2015), Plano Estratégico e Operacional 2015-2020 (Terra Ranka), Praia, <http://documents.worldbank.org/curated/en/843231468250507098/pdf/582960PORTUGES0CEM0final010Feb150PT.pdf>.
- Governo de Angola (2014), Plano Estratégico de Governação Electrónica 2013-2017, Luanda, [www.governo.gov.ao/VerPublicacao.aspx?id=1192](http://www.governo.gov.ao/VerPublicacao.aspx?id=1192).
- Governo de Cabo Verde (2018), Orçamento do Estado para 2018, Praia, [www.mf.gov.cv/index.php/legislacao-new/cat\\_view/167-orcamento-do-estado/172-orcamento-estado-2018/188-orcamento-do-estado-2018](http://www.mf.gov.cv/index.php/legislacao-new/cat_view/167-orcamento-do-estado/172-orcamento-estado-2018/188-orcamento-do-estado-2018).
- Governo de Cabo Verde (2017), Plano Estratégico de Desenvolvimento Sustentável 2017-2021, Praia, [www.governo.cv/index.php/rss/8763-plano-estrategico-de-desenvolvimento-sustentavel-2017-2021](http://www.governo.cv/index.php/rss/8763-plano-estrategico-de-desenvolvimento-sustentavel-2017-2021).
- Governo de Moçambique (2015), Plano quinquenal do Governo 2015-2019, Maputo, [www.portaldogoverno.gov.mz/por/Governo/Documents/Planos-e-Programas-de-Governacao/Plano-Quinquenal](http://www.portaldogoverno.gov.mz/por/Governo/Documents/Planos-e-Programas-de-Governacao/Plano-Quinquenal).
- Governo de São Tomé e Príncipe (2015), Transformation Agenda for São Tomé and Príncipe 2015-2030, São Tomé, [www.st.undp.org/content/dam/sao\\_tome\\_and\\_principe/.../undp\\_st\\_GLAagenda\\_En.pdf](http://www.st.undp.org/content/dam/sao_tome_and_principe/.../undp_st_GLAagenda_En.pdf).
- Governo de Timor-Leste (2016), Resolução do Governo n.º 11/2016 de 23 de março (Cria a Comissão Nacional para a Reforma da Administração Pública e aprova o Guia de Reforma da Administração Pública), Díli, [http://mj.gov.tl/jornal/public/docs/2016/serie\\_1/SERIE\\_I\\_NO\\_12.pdf](http://mj.gov.tl/jornal/public/docs/2016/serie_1/SERIE_I_NO_12.pdf).
- Governo de Timor-Leste (2011), Plano Estratégico de Desenvolvimento 2011-2030, Díli, [http://timor-leste.gov.tl/wp-content/uploads/2012/02/Plano-Estrategico-de-Desenvolvimento\\_PT1.pdf](http://timor-leste.gov.tl/wp-content/uploads/2012/02/Plano-Estrategico-de-Desenvolvimento_PT1.pdf).
- IMF (2014), IMF Country Report No. 14/318 (Guinea-Bissau), International Monetary Fund, Washington DC., [www.imf.org/external/pubs/ft/scr/2014/cr14318.pdf](http://www.imf.org/external/pubs/ft/scr/2014/cr14318.pdf).
- Ministério da Administração Estatal e Função Pública (2016), Plano Estratégico do Sector da Administração Estatal e Função Pública (PESAEFP) 2016-2019, Maputo, [www.maefp.gov.mz/wp-content/uploads/2017/04/PESAEFP.pdf](http://www.maefp.gov.mz/wp-content/uploads/2017/04/PESAEFP.pdf).

Ministério da Administração Pública, Trabalho e Segurança Social (2000), Programa de Reforma da Administrativa “PREA”, Luanda, <http://unpan1.un.org/intradoc/groups/public/documents/CAFRAD/UNPAN029231.pdf>.

Ministério da Economia e Planeamento/Governo de Angola (2018), Plano de Desenvolvimento Nacional 2018-2022, Luanda, [www.info-angola.com/attachments/article/4867/PDN%202018-2022\\_MASTER\\_vf\\_Volume%201\\_13052018.pdf](http://www.info-angola.com/attachments/article/4867/PDN%202018-2022_MASTER_vf_Volume%201_13052018.pdf).

Ministério da Justiça, Administração Pública e Direitos Humanos (2017), Plano Estratégico do Ministério da Justiça, Administração Pública e Direitos Humanos 2017-2021, São Tomé, [www.dgpj.mj.pt/sections/relacoes-internacionais/cooperacao/anexos5943/plano-estrategico-stp/downloadFile/file/PlanoEstrategico\\_STP.pdf?nocache=1506697198.13](http://www.dgpj.mj.pt/sections/relacoes-internacionais/cooperacao/anexos5943/plano-estrategico-stp/downloadFile/file/PlanoEstrategico_STP.pdf?nocache=1506697198.13).

Ministério do Planeamento e do Desenvolvimento Territorial (2012), Plano Nacional de Desenvolvimento 2013-2017, Luanda, [www.info-angola.com/attachments/article/4736/130101%20-%20MPDT%20-%20Plano%20Nacional%20de%20Desenvolvimento%202013%20-%202017.pdf](http://www.info-angola.com/attachments/article/4736/130101%20-%20MPDT%20-%20Plano%20Nacional%20de%20Desenvolvimento%202013%20-%202017.pdf).

Ministério do Planeamento e do Desenvolvimento Territorial (2008), Estratégia de Desenvolvimento de longo prazo (Angola 2025), Luanda, [www.minfin.gov.ao/PortalMinfin/faces/home/informacoeseconomicas/documentosdogoverno?\\_afdf.curl-state=e3bofvkqk\\_4](http://www.minfin.gov.ao/PortalMinfin/faces/home/informacoeseconomicas/documentosdogoverno?_afdf.curl-state=e3bofvkqk_4).

NOSi (2018), Framework IGRP – Integrated Government Resources Planning, Praia, [www.nosi.cv/index.php/pt/servicos1/desenvolvimento-aplicacoes](http://www.nosi.cv/index.php/pt/servicos1/desenvolvimento-aplicacoes).

OECD (2018), Promoting Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste - Fact-finding mission report, OECD Paris.

OECD (2017), Budgeting for a sustainable future: Towards a Roadmap of Budgetary Governance Reform in Timor-Leste, OECD, Paris, [www.oecd-ilibrary.org/governance/budgeting-for-a-sustainable-future-towards-a-roadmap-of-budgetary-governance-reform-in-timor-leste\\_budget-17-5j8mznzvd2rmm](http://www.oecd-ilibrary.org/governance/budgeting-for-a-sustainable-future-towards-a-roadmap-of-budgetary-governance-reform-in-timor-leste_budget-17-5j8mznzvd2rmm).

OECD (2014), OECD Recommendation of the Council on Digital Government Strategies, OECD, Paris, [www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm](http://www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm).

OECD (2003), Harmonizing Donor Practices for Effective Aid Delivery – Good Practice Papers – A DAC Reference Document, OECD, Paris.

UNDP (2014), Restore or Reform? UN Support to Core Government Functions in the Aftermath of Conflict, United Nations Development Program, New York, [www.undp.org/content/undp/en/home/librarypage/crisis-prevention-and-recovery/Executive\\_Summary\\_Public\\_Administration.html](http://www.undp.org/content/undp/en/home/librarypage/crisis-prevention-and-recovery/Executive_Summary_Public_Administration.html).

United Nations/World Bank (2017), (Re)Building Core Government Functions in Fragile and Conflict Affected Settings, New York, [www.undp.org/content/undp/en/home/librarypage/democratic-governance/core-government-functions/-re-building-core-government-functions-in-fragile-and-conflict-a.html](http://www.undp.org/content/undp/en/home/librarypage/democratic-governance/core-government-functions/-re-building-core-government-functions-in-fragile-and-conflict-a.html).

World Bank (2018), Identification for Development (ID4D) initiative, Washington, <http://id4d.worldbank.org/>.

### Chapter 3. Institutional foundations for a sound digital government ecosystem

*This chapter identifies and analyses the progress of African Portuguese-Speaking Countries and Timor-Leste (PALOP-TL) countries in establishing the institutional foundations needed to support digital government. Using the OECD Council Recommendation on Digital Government Strategies as a frame of reference, and taking into account the constraints and opportunities of employing digital technologies to enable core government functions, this chapter begins by considering the nature and quality of the policy frameworks adopted for digital government, before reviewing the mechanisms for institutional leadership and co-ordination, policy levers, and the key enablers that could strengthen policy implementation. The last section is dedicated to the digital skills panorama in the public sector of PALOP-TL countries. The chapter makes several concluding observations and recommendations on next steps for PALOP-TL countries.*

## Policy frameworks for digital government

The diverse experiences of PALOP-TL countries show that different pathways can be followed to govern the digital transformation of the public sector. There is no one-size fits all approach. From the institutional framework that supports digital government to stakeholder engagement, co-ordination and policy levers, the ability of each country to lead the digital transformation of the public sector will depend on the specificities of its institutional and governance ecosystem. In line with the OECD Recommendation on Digital Government Strategies (OECD, 2014), Figure 3.1 illustrates several dimensions that contribute to the analytical framework underlying this report.

**Figure 3.1. Governing the digital transformation of the public sector: Dimensions of analysis**



*Source:* OECD elaboration based on OECD (2016), OECD Digital Government Review in Chile, <http://dx.doi.org/10.1787/9789264258013-en>.

This section looks at what is often considered the starting point for the digital transformation of the public sector: the design and implementation of a digital government strategy.

Digital government strategies constitute the blueprints for a country's pathway to digital government. These strategies serve to harmonise and align policy objectives across different sectors of government to define a coherent, sequenced set of policy and operational actions, and to mobilise resources for inter-governmental policy implementation (see Box 3.1). Strategies can also serve to define the necessary governance mechanisms to support coherent and sustainable policy actions, in a manner that can be effectively supported by digital government stakeholders.

### Box 3.1. E-government strategies: What, why and how

E-government strategies should answer at least three questions:

- **What?** Objective of the strategy
- **Why?** Social and economic impact of the strategy
- **How?** Principals and strategic action of e-Government

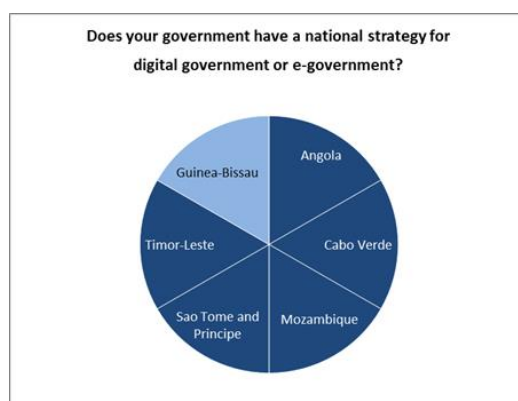
It could also answer other questions:

- **When?** Timeframe
- **Who?** Organisations/responsibilities
- **How much?** Fund needed for the implementation

Source: Ibledi (2017), Guidelines for the formulation of e-government strategies, ESCWA, Beirut, <http://unpan1.un.org/intradoc/groups/public/documents/unpan/unpan032960.pdf>.

In the PALOP-TL region, five out of the six countries have adopted a digital government strategy (see Figure 3.2), reflecting both a government commitment to drive the digitalisation of their public sectors, and the tailor-made digital government ambitions of each country.

**Figure 3.2. Availability of digital government strategies in the PALOP-TL region**



Source: OECD (2018a), Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste, OECD, Paris.

However, while virtually all PALOP-TL countries have developed digital government strategies, the nature and content of these strategies in terms of strategic focus, policy priorities, tasks or activities and monitoring mechanisms vary considerably from country to country (see Table 3.1). These varying strategies have yielded different dividends in terms of policy coherence, co-ordination, resourcing and action. The implementation period initially envisaged by the vast majority of these strategic instruments has already come to an end (Cabo Verde and Mozambique, 2010; Sao Tome and Principe, 2013; Angola, 2017), with an extension or update of these strategies now required, and already envisaged in many cases.

**Table 3.1. Digital government strategies in the PALOP-TL region: Overview**

Country	Strategy/action plan	Strategic focus/axis	Initiatives foreseen
Angola	National Plan for the Information Society (Plano Nacional para a Sociedade de Informação) and Strategic Plan for Electronic Governance (Plano Estratégico para a Governação Eletrónica), both launched in 2005 and updated for the time period of 2013-2017.	Focus service delivery on the common citizen. Improve the efficiency and effectiveness of the state. Develop capacities for public servants and public institutions. Secure the interoperability and security of digital technologies in the public sector.	For the mentioned lines of intervention, several programmes are highlighted, such as the centralisation of services, shared services and interoperability in the public administration. The programmes aggregate projects of different ministries, to be updated on an annual basis (e.g. Citizen Portal, Government Portal, the Company Unique Counter, Shared Services of Human Resources, Citizen and Companies Kiosks).
Cabo Verde	Strategic Program for the Information Society (Plano Estratégico para a Sociedade de Informação) and the Action Plan for Electronic Governance (Plano de Acção para a Governação Eletrónica), both approved in November 2005.	Interactive Public Services. Electronic Democracy. Efficient Public Administration. Health for All. Quality of Human Resources of the Public Administration. Technological Capacity.	Several projects are foreseen on each one of the axes, such as the Citizen Portal, the Unique Citizen's Number, the Health Portal, the tele-medicine networks, the e-Procurement framework, the State Network, the training programme for public officers and the software optimisation of the public administration.
Guinea-Bissau	N/A (short-term priority)	N/A	N/A
Mozambique	E-government Strategy (Estratégia de Governo Electrónico), which includes an action plan, approved in 2006.	Improve the efficiency and effectiveness in delivering public services. Ensure the transparency and accountability of public servants. Provide access to information to improve private sector activities and increase the convenience for citizens.	Common Communication Platform and Interoperability Framework. System of Financial and Fiscal Management of the State. System of Registry of Civil Identity. Business Registration System. Land and Property Sector. Horizontal Integration System of Local Governments.
Sao Tome and Principe	STP Connected (STP em Rede) approved in 2010.	Boost electronic governance. Integrate ICT into the school curriculum and the learning teaching process. Bring small and medium-sized enterprises (SMEs) into the information society era. Democratise access to information and knowledge. Provide the Institute of Innovation and Knowledge (INIC) with skills and abilities.	Strengthen the infrastructures of communication. Training and awareness activities of users for the Collaborative Environment Platform. Elaboration of legislation (e.g. IT acquisition, standardisation of processes and resources). Improve the online presence of the government (Government Portal and sectorial portals).
Timor-Leste	National Policy for ICT (Política Nacional para as Tecnologias de Informação e Comunicações), approved in February 2017 and in force until 2019.	Facilitate the use of Information and Communication Technologies (ICT) in the provision of government services (E-Government), focusing on the involvement of citizens. Use ICT to stimulate and diversify the domestic economy and fully integrate Timor-Leste into the regional and global economy. Create a safe and quality ICT ecosystem in the country to secure citizens' trust.	Digital inclusion of the population. Improvement of the digital connectivity in the country's territory. Coherent and integrated legal and regulatory regime. Development of electronic government through the consolidation of the planning, budgeting and security of governmental IT systems. Development of partnerships with the private sector for the provision of connectivity and electronic government platforms.



The design and development of a strategy and/or an action plan is an opportunity to involve public, private and civil society stakeholders, and to crowd source the objectives to be achieved and policy actions to be undertaken by the government. The inclusive design and development of these policies can serve to generate consensus among different policy agents, promoting co-ownership and a sense of shared responsibility for the projects and initiatives envisaged. It also enables synergies to be identified and adopted between existing strategies or actions (see Section 4.1).

### ***Digital government strategies in the broader framework of information society policies***

Experience has shown that designing strategic plans within the broader context of information society strategies (and national development plans) can enhance coherence with relevant government policy priorities, such as telecommunication infrastructure, Internet accessibility, digital literacy and digital inclusion. In light of this body of learning, e-government strategies can be grouped into two main types in the PALOP-TL region: 1) those created under the umbrella of broader information society policies; and 2) those that only establish a vision and lines of action in the area of digital government.

Angola and Cabo Verde have followed the first model, and both countries have developed e-government strategies<sup>1</sup> within the broader context of their information society strategies, enabling the alignment of their e-government priorities – including interoperability, shared services and electronic democracy – with relevant sectoral plans.

Contrasting with Angola and Cape Verde, the Government of Mozambique has decided to adopt an Electronic Government Strategy (*Estratégia de Governo Eletrónico*) (Governo de Moçambique, 2006) that is fully aligned with the national development plan and national public sector reform strategies (although not an information society policy), thus ensuring the coherence and alignment of several sectoral policies (e.g. energy, telecommunications, transport and urban planning) and institutional players, and facilitating the attraction of international donor funding. In addition, the strategy explicitly aims to ensure coherence with the ICT Policy (from 2000) and the IT policy implementation strategy (*Estratégia de Implementação da Política de Informática*), approved in 2002<sup>23</sup>.

In Sao Tome and Principe, the national e-government strategy was drafted in 2010, with the ambition of creating and implementing an information society in the country. It was designed in the form of a "project" with clearly defined objectives, results and activities, and a detailed implementation schedule and budget. In Timor-Leste, the digital government strategy is an integral part of the National Policy for ICT (*Política Nacional para as Tecnologias de Informação e Comunicações*), approved in February 2017 (and in force until 2019), with the strategic focus outlined in Table 3.1.

As indicated in Table 3.1 above, there is still no digital government strategy in place in Guinea-Bissau. However, during the fact-finding mission that preceded this review, the government representatives of Guinea-Bissau underlined that the development of a strategy for digital government was a short-term priority. In fact, during the drafting of the current review, the National Regulatory Authority for ICT (ARN) (Autoridade Reguladora Nacional), supervised by the Ministry of Telecommunications, was working on the formulation of a digital government strategy<sup>4</sup>. A consensus could not be reached on the legitimacy of the process of strategy formulation, considering that the responsibility for the co-ordination of the digital government policy has been legally attributed to CEVATEGE – Center for the Technological Valorization and Electronic Governance (*Centro de Valorização Tecnológica e Governação Electrónica*) (see Section 3.2)<sup>5</sup>.

### *Assessing digital government strategies in PALOP-TL countries*

The alignment of the digital government strategies with the broader framework of the national development plans, public sector reforms and/or information society policies plays a significant role in PALOP-TL countries. Some digital government strategies pay particular attention to investment in telecommunication networks (Timor-Leste) as a measure to promote digital inclusion. In other countries, actions have been specifically planned and targeted to promote digital literacy and to provide public Internet access points, especially for the most disadvantaged groups and regions (Angola and Cabo Verde). The thematic areas covered by each strategy, and how actions are monitored, evaluated and budgeted, also significantly vary. Nevertheless, the evident ingredients of success across these digital government strategies are feasible with measurable action plans that are tied to carefully managed targets, budgets and investments, and that are also aligned with national level ICT sectoral investments (see Table 3.2).

**Table 3.2. Digital Government Strategies in the PALOP-TL region: General assessment**

Country	Strategy/action plan	General assessment
Angola	National Plan for the Information Society and Strategic Plan for Electronic Governance, both launched in 2005 and updated for the time period of 2013-2017.	Angola's National Plan for the Information Society (implemented namely through the Strategic Plan for Electronic Governance) set ambitious targets to be reached by the end of 2017 (e.g. use of digital public services by a minimum of 10% of the population), as well as follow-up indicators, prepared in accordance with the Integrated ICT Monitoring System. Although there is no data available on the results achieved, the number of digital public services has increased significantly. Overall, and although both are arguably in need of updating, the National Plan for the Information Society and the Strategic Plan for Electronic Governance seem balanced in their scope and structure, combining ambitious and broad lines of actions with concrete objectives, programmes and projects to achieve them.
Cabo Verde	Strategic Programme for the Information Society and the Action Plan for Electronic Governance ( <i>Plano de Acção para a Governação Eletrónica</i> ), both approved in November 2005.	In Cabo Verde, the Strategic Plan established several objective and measurable indicators to determine the success rate of the results to be achieved under each pillar of action. Virtually all the initiatives outlined in Table 3.1 have been implemented, suggesting that both the Strategic Plan and the Action Plan have proven effective. In fact, the strong commitment of the Government of Cabo Verde to the digitalisation of the public sector was critical to the overall modernisation of the public administration and positively influenced the digitalisation of the country's economy. Cabo Verde is well equipped to update these strategic planning tools, building on current technological trends (e.g. social media, mobile technologies, artificial intelligence, blockchain) to achieve still more complex digital government ambitions such as open by default, digital by design and a data-driven public sector (OECD, forthcoming c).
Guinea-Bissau	N/A Short-term priority	
Mozambique	Strategy of Electronic Government ( <i>Estratégia de Governo Electrónico</i> ), that includes an action plan approved in 2006.	Mozambique's Strategy of Electronic Government set goals that were clear and readily measurable, and which produced visible results, such as the creation and management of a secure government electronic network (GovNet), but also some disappointments resulting from some ambitious objectives (e.g. creation of community ICT centres in all districts of the country). Among the ingredients of Mozambique's success were the detailed budget laid out in the Strategy's Action Plan, which was annually reviewed or updated, and the alignment with public infrastructure investment plans (e.g. energy, telecommunications, transports and urban planning), as well as the initiatives to implement public centres to access the Internet.

Sao Tome and Principe	STP Connected ( <i>STP em Rede</i> ) approved in 2010 and with foreseen applicability until 2013.	Although a final evaluation of the results STP Connected (Instituto de Inovação e Conhecimento, 2010) achieved has not been carried out, it is possible to conclude that significant steps have been taken in all the areas mentioned (see Chapter 4). One of the advantages of the strategy designed by Sao Tome and Principe is based on the feasibility of its recommendations, its adaptation to the needs and size of the country, and, like Mozambique, the definition of a clear implementation plan and a detailed budget, which is aligned with other sectoral policies (namely in the areas of justice, education and the economy). Nevertheless, the lack of political support and co-ordination for its implementation has undermined implementation progress.
Timor-Leste	National Policy for ICT ( <i>Política Nacional para as Tecnologias de Informação e Comunicações</i> ), approved in February 2017 and with a scope until 2019.	Timor-Leste's National Policy for ICT has been created to facilitate the use of Information and Communication Technologies (ICT) in the provision of government services (e-government), with the strategic focus mentioned in Table 3.1. Given the very recent status of the National Policy for ICT, and a latent change in government, it is too early to gauge the strategy's efficacy or results.

Digital government is not a new policy for PALOP-TL countries. With the exception of Guinea-Bissau, which has not yet approved a strategy for this policy area, and Timor-Leste, which only recently adopted one, each of the four other PALOP-TL countries have had e-government/digital government strategies in place for a decade or more<sup>6</sup>. Accordingly, the opportunity exists to create second generation strategies that are better aligned with, and serve to enhance, the countries' current achievements on digital government. These strategies could serve several headline objectives, such as tackling the inequalities produced by the digital divide or enabling countries to leapfrog stages of development (through enhanced public services delivery, digital innovation etc.), by more effectively seizing the opportunities of the digital transformation and leveraging current technological trends (e.g. social media, blockchain, cloud computing etc.).

### Institutional leadership and co-ordination

In developing countries, including PALOP-TL countries, leadership and institutional capabilities can serve to “engender a shared vision, mobilise long-term commitment, integrate ICT opportunities and investments into development strategies, align complementary policies concerning competition and skills, and pursue partnerships with civil society and the private sector” (Hanna, 2017). In PALOP-TL countries, the choices made about the institutional frameworks to support the execution of digital government strategies have proven to be essential for ensuring political coherence and driving relevant stakeholders towards the achievement of common goals around the digital transformation of the public sector. To this end, there is no one-size fits all standard institutional model to be adopted or followed, as such decisions depend on the context of each country. Nevertheless, some main trends can be identified in the PALOP-TL region.

The OECD Recommendation on Digital Government Strategies (OECD, 2014) highlights several particular attributes of institutional leadership and co-ordination as important for sustained and coherent digital government, including: clearly established institutional roles and responsibilities, cross-cutting mechanisms of co-ordination, and oversight and management.

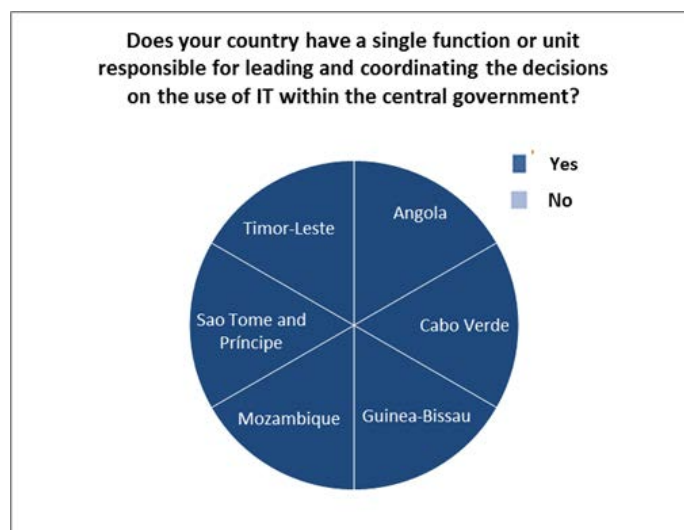
### Box 3.2. Mechanisms of leadership and co-ordination

The OECD Recommendation on Digital Government Strategies suggests that high level articulation and leadership is needed that brings together ministers or senior officials and assures broad co-ordination and oversight of the digital government strategy. Alongside high-level political engagement, operational and technical co-ordination is needed to deal with implementation challenges and bottlenecks. Taken together, these two levels of co-ordination can assure the coherence and sustainability of the decisions, initiatives and projects to be executed.

Source: OECD (2016), Digital Government in Chile: Strengthening the Institutional and Governance Framework, OECD Digital Government Studies, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264258013-en>.

Each PALOP-TL country has designated an institution responsible for the leadership and co-ordination of the actions and decisions taken on the use of ICT in central government (see Figure 3.3).

Figure 3.3. Leadership and institutional set ups in the PALOP-TL region



Source: OECD (2018a) Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste, OECD, Paris.

The role of a leading institution is particularly important in guiding and co-ordinating transformation efforts, particularly between sectors and levels of government, and in promoting a shift from agency thinking and government-centered approaches to systemic thinking and citizen-led implementation policies and approaches. In PALOP-TL countries there is a great deal of variation in the institutional models adopted. Differences are readily seen in the positioning of the agencies responsible for ICT within the hierarchy of government, as well as in their mandate (see Table 3.3). For example, in Angola and Mozambique, sectoral ministries take the lead in the co-ordination of digital government strategies. By contrast, in other PALOP-TL countries, the co-ordinating agencies are

subject to the tutelage of the Office of the Prime Minister or to the Ministry of the Presidency of the Council of Ministers.

For countries in the early stages of a development transition process, there is no “best practice” approach to institutional leadership and co-ordination. To be effective, these models should be tailored to fit the given political and institutional context. In PALOP-TL countries, different models are adopted. In more stable political contexts, strong sector ministries are taking the lead (e.g. Mozambique and Angola). Elsewhere, in contexts where political dynamics are less stable or fragmented and institutional capabilities remain in the early stages of development (such as Guinea Bissau or Timor-Leste), digital government is led by the highest levels of government. Both models bring opportunities and constraints.

**Table 3.3. PALOP-TL co-ordination of digital government**

Country	Ministry	Co-ordinating unit	Mandate
Angola	Minister of Telecommunications and Information Technologies	INFOSI – National Institute for the Promotion of the Information Society (Instituto Nacional de Fomento da Sociedade da Informação)	INFOSI is responsible for several emblematic digital government projects and initiatives, namely the State Private Network (see Section 4.2) and the definition of standards and guidelines (e.g. interoperability) that can allow a more coherent digital government development across sectors and levels of government (PASP PALOP-TL (2018)).
Cabo Verde	Prime Minister	NOSI - Operational Unit for the Information Society (Núcleo Operacional da Sociedade de Informação)	NOSI leads the digital economy, digital society and digital government policies of Cabo Verde. As the major service provider of digital solutions for public institutions in Cabo Verde, NOSI makes available a wide variety of digital services and products: consultancy, web design and development of platforms and application, multimedia products, housing and hosting of information, etc.
Guinea-Bissau	Presidency of the Council of Ministers	CEVATEGE – Center for the Technological Valorisation and Electronic Governance (Centro de Valorização Tecnológica e Governação Electrónica)	CEVATEGE aims to “create digital platforms for the dissemination of all acts of governance and properly involve the civil society and the population at large. The entity also has the mission of planning and implementing digital governance between public-private-civil society stakeholders” (CEVATEGE, 2018). CEVATEGE is responsible namely for the Portal of the Government and for managing the national public domain (gov.gw).
Mozambique	Ministry of Science and Technology, Higher and Technical Professional Education	INAGE - National Institute of Electronic Government (Instituto Nacional para o Governo Electrónico)	INAGE is responsible for: a) the creation of an electronic communication platform of the government for all entities of the state; b) the approval mechanism for the development of projects, purchase of information systems, applications, database and ICT equipment to provide electronic government services; and c) to ensure the management of the government’s electronic network (Secretariado do Conselho de Ministros, 2017).
Sao Tome and Principe	Prime Minister	INIC - Institute of Innovation and Knowledge (Instituto de Inovacão e Conhecimento)	INIC has the cross-cutting mandate of “formulating and implementing strategies for the integration of new information and communication technologies into human activities” across the different sectors of the government. (Decreto-Lei 19/2008, de 16 de Junho).

Timor-Leste	Prime Minister	TIC Timor – Institute of Information and Communication Technologies (TIC Timor - Instituto de Tecnologias de Informação e Comunicação)	TIC Timor reflects the government's commitment to promote an information society and the digital transformation of the public sector in Timor-Leste through the establishment of a central co-ordinating unit that can address the existing fragmentation on digital technologies' management across the public sector (Resolução do Governo N.º 9/2017 de 15 de Fevereiro).
-------------	----------------	--	--

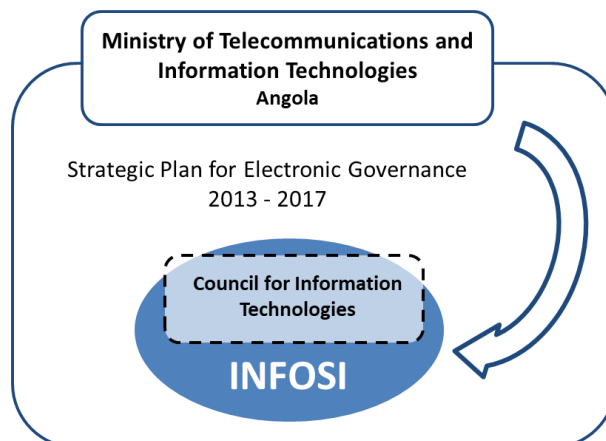
Note: In Mozambique, INTIC - National Institute of Information and Communication Technologies (Instituto Nacional de Tecnologias de Informação e Comunicação), also under the Ministry of Science and Technology, Higher and Technical Professional Education, has a policy definition and regulatory role. In Timor-Leste, besides TIC Timor, the Directorate of IT (*Direcção de Tecnologias da Informação*), responding to the Ministry of Development and Administrative Reform, and the Authority for the Regulation of Communications (*Autoridade Reguladora das Comunicações*) also have an important role in digital government development in the country.

### *Mapping the institutional framework in PALOP-TL countries*

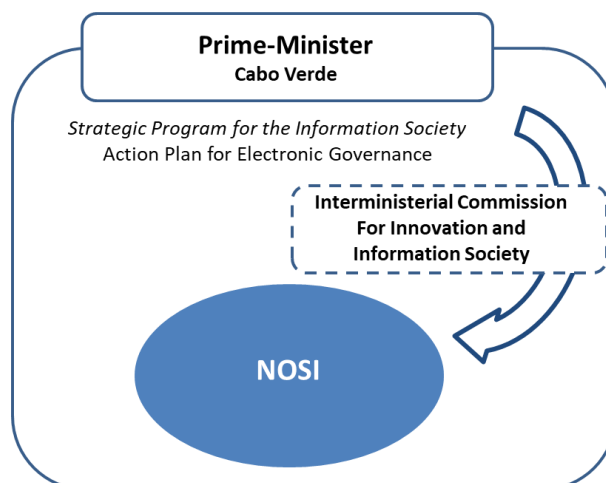
In PALOP-TL countries, the institutional framework for digital government agencies vary widely and can be analysed around four domains or parameters:

1. Leadership (centralised in the Office of the Prime Minister or Presidency of the Council of Ministers or led by a sectoral agency) and reporting models (guidance and oversight).
2. Mandate (ranging from standard setting, supervision and co-ordination to service provision, as in Cabo Verde).
3. Human, logistical and financial resources.
4. Agency tasks or functions (for example, the aggregation of implementation and regulatory functions in a single agency, or delegation of those functions across different agencies, as in the case of Mozambique).

In Angola, INFOSI is a product of the integration of the former National Center for Information Technologies (CNTI) and the Institute of Administrative Telecommunications (INATEL) in 2016. With an estimated 230 employees in central and provincial services, INFOSI leads several iconic digital government projects and initiatives: the State Private Network (see Section 4.2); the national public data centre; and Walking with ICT (Andando com as TIC), which makes wifi and digital training freely available, through a mobile rotating service, in remote areas of the country. INFOSI is also responsible for the definition of standards and guidelines (e.g. interoperability), which allows for more coherent digital government development across sectors and levels of government. To galvanise this function, INFOSI would benefit from developing model policy levers, such as budget thresholds and co-ordinated investments or business cases that could be used across the public sector (see Section 3.4).

**Figure 3.4. Digital government in Angola: Governance snapshot**

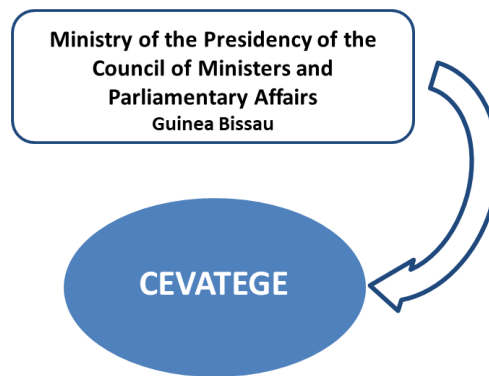
In Cabo Verde, NOSI was created in 2003 as an operational and executive institution under the auspices of an Interministerial Commission for Innovation and Information Society (*Comissão Interministerial para a Inovação e Sociedade de Informação*) (Resolução n. 15/2003, de 7 de Julho) (see Section 3.3). NOSI is also the principal provider of digital services and products across public sector institutions, providing web design and platform development services, multimedia products, backup and software services and information storage. Today, NOSI has more than 200 employees dedicated to support the digitalisation of society, economy and public sector of Cabo Verde, and is widely considered a leading driver of strong digital government performance in Cabo Verde (see Chapter 1<sup>7</sup>).

**Figure 3.5. Digital government in Cabo Verde: Governance snapshot**

In 2014, NOSI became a public company (*entidade pública empresarial*) with administrative and financial autonomy (Decreto-Lei n. 13/2014). Under the supervision of the Prime Minister, NOSI is now under the economic and financial guidance of members of the government responsible for finance, ICT and public sector reform. Given the institution's current role as regulator, co-ordinator of the digital government policy, and digital services provider, the OECD fact-finding mission concluded that a redefinition of its mandate and competencies might be prudent, in line with the "Cluster TIC- C@bo Verde Digital initiative", approved by the Government of Cabo Verde in 2014 (see Section 3.4).

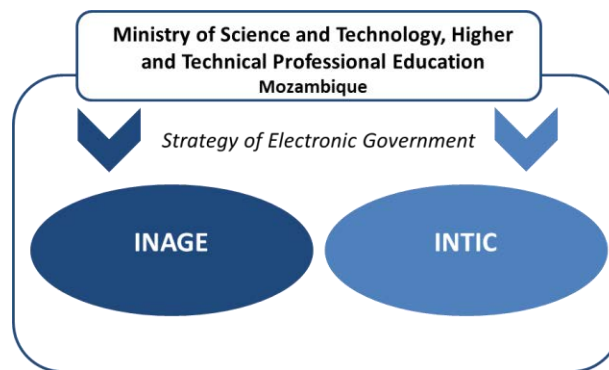
In Guinea Bissau, CEVATEGE was created in 2014 to co-ordinate digital government development efforts in the country. The institution is responsible for the government portal and for managing the national public domain (gov.gw). Although CEVATEGE has aggregated some level of digital government skill and expertise in-house, it has limited political or policy leverage regarding other public sector organisations, and has significant human, logistical and financial resource constraints, with no direct budget allocation. Reinforcement of CEVTEGE leadership and resources (both human and financial), and some level of investment in the development of policy levers for digital government (e.g. model business cases, procurement templates etc.), might enable the agency to better co-ordinate the country's efforts towards digital government (see Section 3.4).

**Figure 3.6. Digital government in Guinea-Bissau: Governance snapshot**



Created in November 2017 (Decreto 61/2017, de 6 de Novembro), INAGE in Mozambique leads digital government projects and initiatives, such as the management of the government's electronic network (GovNET), government data centres and the interoperability system<sup>8</sup>. Under this new policy framework (see Figure 3.7), the National Institute of Information and Communication Technologies (INTIC or *Instituto Nacional de Tecnologias de Informação e Comunicação*), also under the Ministry of Science and Technology, Higher and Technical Professional Education, has a role in defining digital government policy and in supervising and regulating its implementation<sup>9</sup>. INTIC plays the role of the regulator, and INAGE is the national implementing agency for digital government. Given the recent creation of this new institutional framework, it is too early to gauge the success or failure of this strategic option.

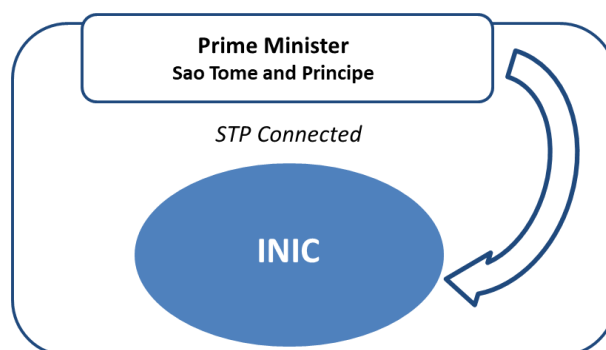
**Figure 3.7. Institutions for digital government in Mozambique**





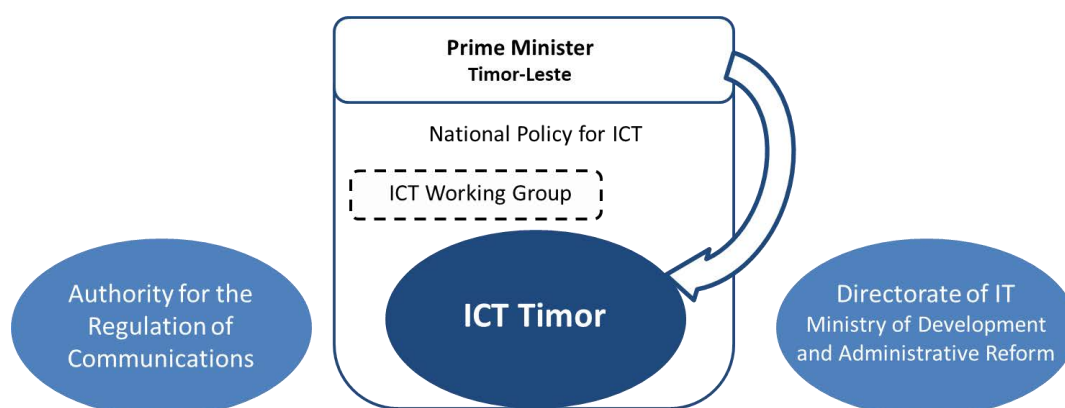
In Sao Tome and Principe, INIC (created in 2008) has varying responsibilities, including the management of the data centre, support for digital technologies management among different institutions of government, and the development of a fibre optic backbone to enable efficient communication infrastructure across the public sector. The lack of resources does, however, constitute an obstacle for the development of INIC's mission and its mandate or authority, and the allocation of human and financial resource allocation to INIC would need to be significantly strengthened for it to play a meaningful role in digital government. INIC could also be responsible for overseeing ICT investment in the public sector, thus improving the coherence and sustainability of ICT projects across the different sectors of the government.

**Figure 3.8. Digital government in Sao Tome and Principe: Governance snapshot**



In Timor-Leste, besides the newly created public entity for digital government development - TIC Timor<sup>10</sup> - the Directorate of IT (*Direcção de Tecnologias da Informação*)<sup>11</sup> and the Authority for the Regulation of Communications (*Autoridade Reguladora das Comunicações*) have important functions, including the procurement and installation of a fibre optic network, and maintenance of a communication system between the government and the municipalities. It would be important for the Government of Timor-Leste to clarify the different roles performed by TIC Timor, by the Directorate of IT and by the Authority for the Regulation of Communications, to ensure that the current model of institutional governance does not cause further fragmentation of the sector.

**Figure 3.9. Digital government in Timor-Leste: Governance snapshot**



### *Assessing the effectiveness of governance models in the PALOP-TL region*

The presence of hybrid institutional arrangements for digital government development in each of the six PALOP-TL countries signals that there is no single model or approach for driving the digitalisation of the public sector. What works well in one country may not work well elsewhere. Nevertheless, it is possible to identify some common elements – including the mandate assigned to e-government agencies and the models of leadership and learning – that have contributed to improved digital government outcomes for PALOP-TL countries.

### *Appraising the mandates assigned to digital government agencies*

The hybrid mandates of NOSI in Cabo Verde and INFOSI in Angola have enabled robust operational capacities, in large part due to political, human and financial benefits that have subsequently accrued to the relevant development agency. Both agencies are responsible for a diverse set of functions, ranging from the design and execution of digital government policies, to the provision of services and, to a certain extent, the definition of the technical standards and guidelines on ICT investment across the administration of government. Although ambitious, the exercise of such a mandate has the advantage of rapidly accelerating government efforts towards digital government, helping to disseminate the vision of political leadership in a clear and focused way. It is also the case, however, particularly in Cabo Verde, that the broad scope of NOSI's mandate has generated some resistance from the private sector. NOSI is in a clearly dominant market position as it provides digital services across the public sector and limits the access of private companies to the ICT domestic market unless they participate in the public tenders launched and managed by NOSI itself. Despite this, the hybrid institutional models of Angola and Cabo Verde stand out as potential examples for other PALOP-TL countries, particularly those in the early stages of implementing their digital government strategies, such as Timor-Leste and Guinea-Bissau. This approach has demonstrated that the concentration of policy decision making, standard setting, financial resources and the development of ICT skills in a single government agency can boost digital transformation across the public sector.

It is too early to gauge the relative potential for INAGE in Mozambique and TIC Timor in Timor-Leste to effectively lead digital government activities across government. In Mozambique, the two public agencies recently created (INAGE and INTIC) could provide valuable lessons on how best to avoid any potential conflicts of interest between digital government agencies, ICT regulators and national telecommunications regulators in PALOP-TL countries. By contrast, the newly created digital government agency in Timor-Leste will be dependent on the government's commitment to the digital agenda and to its efforts to avoid the fragmentation of institutional responsibilities in this sector.

Neither INIC in Sao Tome and Principe or CEVATEGE in Guinea-Bissau are operating at desirable levels of efficiency and effectiveness, partly due to the lack of human and financial resources allocated to them.

### *Setting the models of leadership and tutelage*

In terms of leadership and supervision, two approaches are evident: either the government creates specialised agencies (such as INFOSI or INAGE), which report to the sectoral ministries (Ministry of Telecommunications and Information Technologies in Angola, and Ministry of Science and Technology, Higher and Professional Technical Education in Mozambique); or e-government agencies retain some level of autonomy (NOSI, CEVATEGE, INIC and TIC Timor) but remain subject to the direct oversight of the Office

of the Prime Minister, or the Minister for the Presidency of the Council of Ministers. In Cabo Verde, NOSI functions under the auspices of an Inter-ministerial Commission, which ensures political coherence around the digital agenda.

In theory, the second model of leadership and supervision should more readily overcome institutional silos. In the case of Cabo Verde, the proximity of NOSI to the Prime Minister's office was particularly important in the years following its creation as it allowed the digital transformation to be adopted as a whole of government mission and enabled NOSI to overcome diverse political, legislative and technical constraints. By contrast, in Angola and Mozambique the dissemination and co-ordinated implementation of digital government strategies by all government ministries and agencies depends to a large extent on the technical capacity and political weight that the sectoral minister carries regarding other members of the government. The extent to which the government interprets the digital agenda as a national imperative is also relevant. However, even in countries where the government intends to lead the digital agenda at the highest level, there are cases in which the leadership and authority appears fragmented and is challenged by political silos. In Timor-Leste, for instance, the recent TIC Timor, as a lead agency in the Office of the Prime Minister, now operates in parallel to the Directorate of IT, which continues to play a leading role on digital government strategy through the Ministry of Development and Administrative Reform.

In some PALOP-TL countries, sectoral ministries, although limited in number, develop and lead their own action plans, often outside the formal leadership of the agencies co-ordinating digital government. Both Ministries of Finance in Angola and Mozambique, for example, procure their own ICT equipment (e.g. data centres), which contradicts centralised interoperability standards and procurement policies. Nevertheless, the adoption of these measures, although potentially divergent and uncoordinated, can allow for a rapid evolution in the provision of digital services to citizens and companies, and could serve as good practice examples for other sectors of government.

### *Identifying additional constraints*

Based on the assessment above, the following policy issues emerged as potential constraints to the foundations for effective digital government:

- **Leadership *de jure* vs *de facto*** – Guinea-Bissau and Timor-Leste demonstrate the risks of proliferating government institutions with competing responsibilities for digital government<sup>12</sup>, as this can serve to undermine the leadership, authority and coherence among responsible agencies. In the absence of powerful leading and co-ordinating institutions, digital silos replicate the institutional silos, and pilots and digital platforms proliferate without sharing (Hanna, 2016).
- **Regulation vs implementation** – Cabo Verde reflects the potential tension that exists when co-ordinating units assume different and incompatible functions (e.g. acting both as regulator and service provider). In the case of Cabo Verde, the effective implementation of the “Cluster TIC - C@bo Verde Digital initiative” should bring some clarity to the institutional framework in the country (but this is not a problem unique to Cabo Verde, and often arises or has the potential to arise elsewhere).
- **Shared services vs siloed efforts** – the proliferation of ICT units in the line ministries (e.g. Ministry of Finance, Ministry of Justice) can undermine a coherent and co-ordinated approach to digital government. Strong leading institutions, with

the authority and resources needed, can minimise this effect, promoting synergies and shared services to support collaborative approaches to digital government in partnership with other public sector organisations.

### **Mechanisms of co-ordination and culture of co-operation**

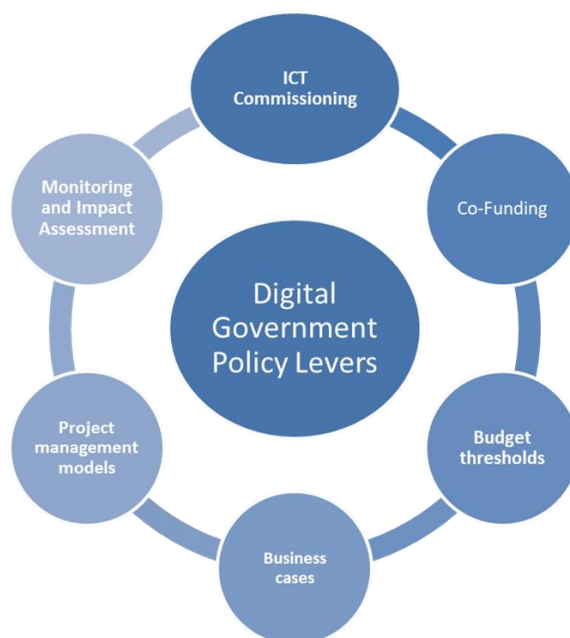
Effective institutional co-ordination is central to promoting consensus and inter-agency linkages for digital government. It also enables the shared definition of standards and corporate acceptance of policy levers to secure coherent digital government policies (OECD, 2017a). Given the complex, cross-cutting and rapidly evolving nature of digital trends, appropriate mechanisms of co-ordination are productive means by which to secure multi-stakeholder engagement, alignment of sectoral decisions with the overarching objectives of digital government policies, and coherence and sustainability of strategic initiatives. Policy co-ordination mechanisms, including, for example, regular information and data exchange or inter-agency monitoring and reporting, also enable better monitoring and serve to inform policy and decision makers about the progress and impact of digital government projects across different sectors and levels of government. The promotion of a coherent and sustainable digital transformation of PALOP-TL public sectors, which is a phenomenon horizontal by nature, will require prioritising the effective use of policy co-ordination mechanisms to sustain the necessary shift from an agency-thinking to a system-thinking approach across the countries.

The extent to which this has begun to occur varies across PALOP-TL countries, with Cabo Verde, and to a lesser extent Mozambique and Angola, making more progress than others. Several potentially useful mechanisms of co-ordination exist on paper but are not yet operating in practice, including, for example: the Council for Information Technologies (Conselho para as Tecnologias da Informação) in Angola, the Strategic Council of the ICT cluster in Cabo Verde and the ICT Working Group in Timor-Leste. These lacunae suggest that either these institutions were overreached and not yet needed, or that they do not have the authority, legitimacy and resources to function as intended.

### **Policy levers to streamline digital technology investment**

The existence of a national digital government strategy (Section 3.1), a lead institution (Section 3.2) and institutional mechanisms of co-ordination (Section 3.3) are important building blocks for effective digital government. However, governments are also encouraged to adopt policy levers, such as business cases, project management models, protocols or standards for commissioning ICT, and budget thresholds, to drive coherent policy implementation across sectors and levels of government (see Figure 3.10). The development of institutional tools or policy levers to plan and prepare digital initiatives or projects can assist governments to prioritise policy actions, and make cost-benefit analyses of public investments effective<sup>13</sup>. It is also an effective means to ensure the efficiency, effectiveness and alignment of procurement activities, avoiding gaps and overlaps that can result from agency-driven approaches<sup>14</sup>.

**Figure 3.10. Policy levers for coherent and sustainable digital government policies**



In line with the OECD Recommendation on Digital Government Strategies (OECD, 2014) and the work developed by the OECD Working Party of Senior Digital Government Officials (E-Leaders), the six policy levers outlined in Table 3.4 are recommended as constructive tools for smarter and more sustainable digital government policies.

**Table 3.4. Digital government: Policy levers**

<p>1. ICT commissioning</p>	<p>The key recommendation 11 of the OECD Recommendation on Digital Government Strategies (OECD, 2014) underlines the existence of a specific ICT procurement framework as a critical element for the effective and agile development of digital government. Strategic and co-ordinated ICT procurement allows governments to:</p> <ul style="list-style-type: none"> <li>• Aggregate demand across the administration products and services and generate savings.</li> <li>• Secure the accomplishment of technical standards and guidelines on ICT investment.</li> <li>• Reinforce the monitoring capacity of the investments being made across the government.</li> <li>• Improve transparency through the public availability of information on public tenders.</li> </ul> <p>The digital technologies procurement framework should also enable governments to embrace more agile techniques to acquire services and goods, involving providers and stakeholders earlier in the commissioning process and iteratively throughout delivery, in order to better understand user needs and context, potential institutional and financial benefits and barriers, and to develop better and more dynamic solutions (shift from a strict procurement approach to a commissioning imperative).</p>
<p>2. Co-funding mechanisms</p>	<p>The existence and strategic management of funding or co-funding mechanisms to promote digital government development is also an important lever to promote a coherent and sustainable digital government development (e.g. Norway, Portugal). It can play an important role in the mobilisation of the ecosystem of public, private and civil society stakeholders. A calculated and smart definition of the requisites to access to the mentioned funding, including the accomplishment of technical guidelines and standards (see Section 4.2), allows agency-thinking cultures to be overcome and a system-thinking approach focused on benefits for the citizens, businesses and the public sector to be embraced.</p>
<p>3. Budget thresholds</p>	<p>Budget thresholds for digital technology projects and initiatives above a certain budgetary value can reinforce coherence to digital government efforts and support the leadership role of the national co-ordination unit (e.g. Denmark, Portugal, Spain). Above the defined budgetary value, projects and initiatives should meet administrative, financial, management or technical requirements to ensure rational public expenditure and investment, avoiding gaps and overlaps on ICT investments and</p>

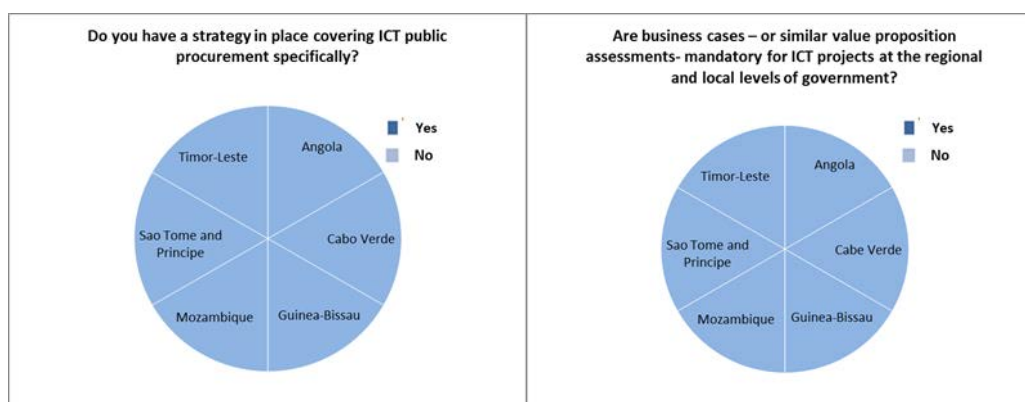
	promote synergies among public sector institutions (e.g. demand aggregation, shared services culture).
4. Business cases	The key recommendation 9 of the OECD Recommendation on Digital Government Strategies (OECD, 2014) highlights that the preparation of mandatory or recommended business cases for investments in digital technologies is an important tool to ensure that proper planning exists regarding the expected outputs, outcomes and impacts of digital technologies investments (e.g. Denmark).
5. Project management models	The key recommendation 10 of the OECD Recommendation on Digital Government Strategies (OECD, 2014) underlines the importance of standardised models of ICT project management to enable public institutions to ensure the technical, financial, legal and institutional requisites for the quality and sustainability of a project's results. These models complement the business case methodologies presented above and also contribute to secure better alignment, performance and comparability of digital technologies projects and initiatives (e.g. Denmark, Norway).
6. Monitoring and impact assessment mechanisms	Clearly defined monitoring and impact assessment mechanisms applicable to digital technologies investments are able to provide the public sector with an important instrument of management, enabling a dynamic control of the efforts underway and providing relevant data for transparency and accountability purposes. The responsibility to monitor digital technologies investments is also an attribution that can strengthen the mandate of the co-ordinating unit of digital government policies, contributing to increase its political mandate and support its oversight capacity across sectors and levels of government.

In PALOP-TL countries, some of the institutions responsible for co-ordinating digital government policies have adopted relatively structured approaches or mechanisms to optimise the planning, preparation and implementation of investments in digital technologies across sectors:

- In Angola, the Ministry of Planning and Territorial Development is responsible for overseeing public sector investments, and regularly asks the opinion of INFOSI before approving digital technology investments across different sectors of the government. Although this procedure could be done in a more institutionalised way, it allows INFOSI to secure its digital government co-ordination role on large and/or strategic digital technologies investments being made across the Angolan public sector.
- In Cabo Verde, since NOSI co-ordinates digital government policy and acts as the main service provider of digital technology services for the country's public sector (e.g. management of ICT infrastructure, software development, data hosting in public datacentre), the institution plays an important role in optimising and ensuring the coherence of digital technology investments across the public sector. The management of the Private Technological Network of the State (RTPE) and of the IGRP (Integrated Government Resources Planning) makes available more than 100 solutions to public entities and directly attributes to NOSI's critical co-ordinating levers that allow strategic policy alignment and reinforced coherence across different sectors and levels of government.
- In Mozambique, INAGE is responsible for "the approval of development projects, acquisition of information systems, applications, database and ICT equipment to provide Electronic Government services" (Secretariado do Conselho de Ministros, 2017). The new established institute in Mozambique is also responsible for the creation of an electronic communication platform of the government for all entities of the state, including the management and development of shared applications to be used by public institutions. In this sense, although INAGE was recently established, its mandate shows the willingness of the Government of Mozambique to ensure efficiency and coherence on digital technologies investments.

Despite these important achievements, almost across the board PALOP-TL countries continue to face ICT expenditure overlaps across different sectors of government (e.g. atomised procurement of hardware and software licences, multiplicity of IT assistance contracts), reflecting substantial inefficiencies and missed opportunities of co-operation.

**Figure 3.11. Business cases and ICT procurement strategies in the PALOP-TL region**



Source: OECD (2018a) Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste, OECD, Paris.

The elementary examples of policy and operational measures currently adopted in PALOP-TL countries to improve the uptake and implementation of digital government do not necessarily constitute model or exemplary practices in these areas. Nevertheless, they do constitute useful first steps towards the creation of more robust policy levers, and an important means by which to begin turning policy into action. Given persistent and cross-cutting problems of effective institutional co-ordination and implementation of digital government policies in practice, each of these six countries would benefit to varying degrees from strengthening their focus on enabling policy levers.

### Developing the key enablers

Shifting from silo-based ICT approaches, where each public agency focuses on its own opportunities and challenges, to system-thinking approaches, where public administration goals, priorities and ways of addressing them are understood as a whole, requires the development of technical key enablers that can contribute decisively to an integrated, coherent and sustainable digital government policy. Aligned with key recommendation 6 of the OECD Recommendation on Digital Government Strategies (OECD, 2014) – “Ensure coherent use of digital technologies across policy areas and levels of government” - and considering the PALOP-TL assessed context, the development of the following key enablers should be prioritised by the governments of the six countries:

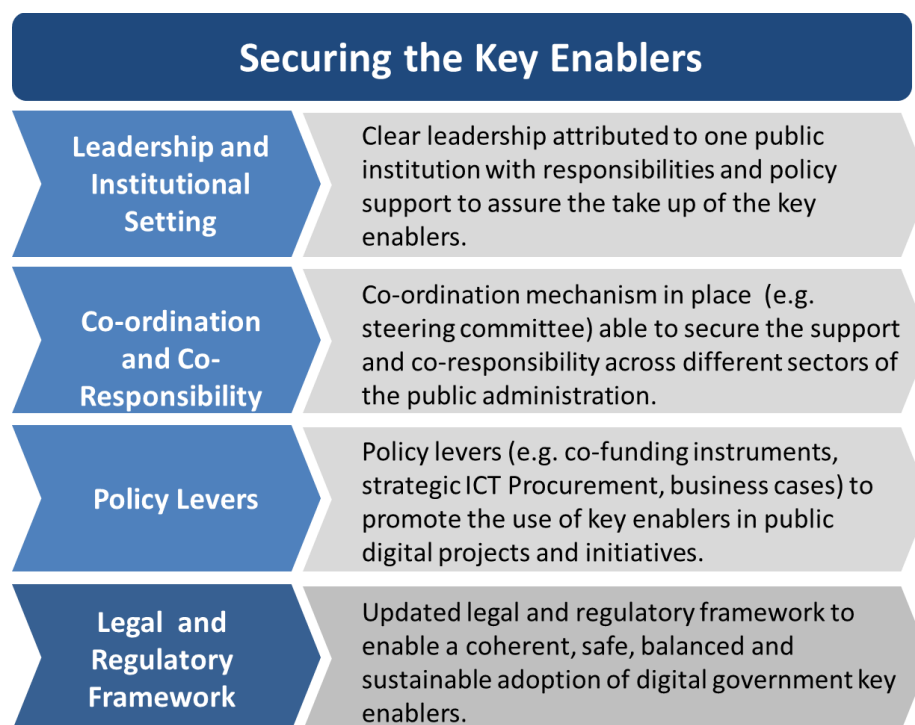
1. Interoperability frameworks (see Section 2.5.2)
2. Data centres (see Section 2.5.2)
3. Digital identity (see Section 4.2)

The three key enablers demonstrate not only the opportunities, but also the challenges that PALOP-TL countries currently face in building digital government. Many improvements could still be made to scale up and optimise the benefits of existing key enablers, both in countries at earlier stages of development (such as Guinea-Bissau, Sao Tome and Principe

and Timor-Leste), and in the more developed PALOP-TL economies (Angola, Cabo Verde and Mozambique). As demonstrated by the examples above, the creation of key enablers is the first step towards creating a coherent and sustainable digital government, and continued and iterative progress in these areas is encouraged across the PALOP-TL region.

However, key enablers cannot work alone, and require an adequate legal and regulatory foundation to enable their adoption. The following dimensions are important pre-requisites or accompaniments to render their use effective (see Figure 3.12): leadership and institutional setting (see Section 3.1 and 3.2), co-ordination and co-responsibility (see Section 3.3), policy levers (see Section 3.4), and legal and regulatory framework.

**Figure 3.12. Requisites for effective key enablers**



Digital government policies require that diverse laws and regulations are in place to ensure citizen and company digital rights, institutionalise digital procedures and services, attribute legal value to specific digital instruments (e.g. digital signatures), promote digitally adapted procurement procedures, secure personal data protection, and guarantee the security of systems and transactions. Given the rapid pace of innovation in the digital technology sector, governments, particularly developing country governments, are often faced with the difficult task of keeping their legal and regulatory frameworks regularly updated in order to seize and address any obstacles to the digital transformation of their public sectors<sup>15</sup>. This often comes at the cost of enabling support for implementation or productive investment elsewhere, for example, around the establishment of administrative enablers, where much could be achieved to advance the digital transformation. During the six fact-finding missions to the PALOP-TL countries, the interviewed stakeholders often cited delays in the progress of legal/regulatory reform as a binding constraint in policy implementation in the country (e.g. interoperability, digital identity, ICT procurement).



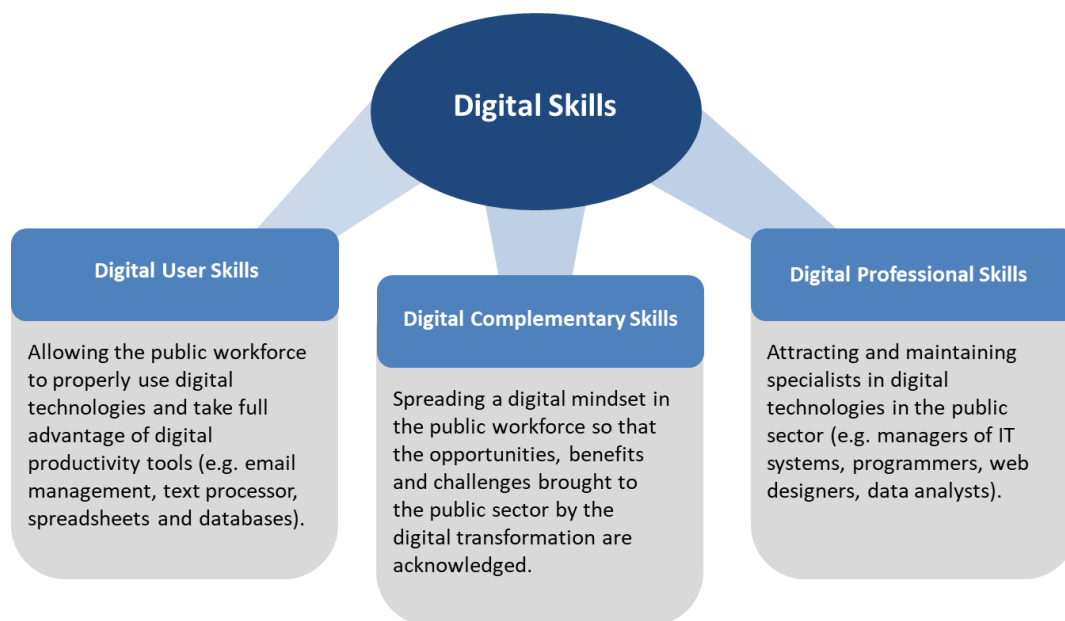
Effective digital government across PALOP-TL countries will ultimately hinge on the simultaneous reform of legal, administrative and policy implementation approaches. PALOP-TL countries should maintain a functional balance between each of these elements of reform, as well as ensure that their legal and regulatory architecture is clearly informed by a combination of innovation and evidence-based learning and adaptation.

### Digital skills for a sustainable digital government

The trends of digital transformation in peoples' lives have important implications for their expectations of government and of the ecosystem in which they operate. However, it is important to understand the skillsets required to support digital transformation and enable a shift from e-government to digital government, as well as the role of civil servants in a digitally transformed public sector (OECD, forthcoming b).

Governments often face challenges in attracting and retaining digital talent in the public sector, and effectively balancing this approach with outsourced private solutions, commissioning, and public-private co-operation. Three particular types of skillsets are useful: digital user skills, digital professional skills and digital complementary skills (see Figure 3.13).

**Figure 3.13. Digital skills for a digital government**



Stakeholders interviewed for this study identified these skillsets as necessary for enabling and sustaining a digital transformation in PALOP-TL countries and for reducing the digital divide that can result without these skills. However, none of these countries have dedicated strategies in place to attract public servants who are adequately trained in the use of ICT, or strategies that recognise and retain those skills through an ICT career structure.

A constructive first step towards building and retaining the skills needed in government would be to audit or take stock of existing digital skills, and assess these skills against the current and future administrative needs of the government. Such an assessment could serve as a blueprint or roadmap for recruiting talent. The opportunity also exists for governments across the PALOP-TL region to make use of the digital skills and expertise of

entrepreneurs, vocational training and tertiary institutions in the public sector to enable and deepen digital skills both inside and outside of government for the benefit of end users. These connections could also play an important role in supporting the links to digital innovation and development.

Through strategic articulation with public Internet access initiatives, inclusive digital government actions can also improve access to digital services and serve to identify and engage segments of the population more vulnerable to information and digital exclusion.

## Notes

<sup>1</sup> Angola has adopted a Strategic Plan for Electronic Governance, which incorporates a vision of "governance focused on developing more oriented, relevant and accessible public services to citizens and businesses" (Governo de Angola, 2003a and 2003b); and the Action Plan for Electronic Government in Cabo Verde (Governo de Cabo Verde, 2005a and 2005b).

<sup>2</sup> With the objective of improving the knowledge and expertise of human resources on ICT tools and the technological modernisation and innovation of public administration.

<sup>3</sup> During the preparation of the current review, the Government of Mozambique was finalising the revision of the Electronic Government Strategy along with the above mentioned policies, which will give place to the "Mozambique Information Society Policy". The new policy, discussed with public and private stakeholders during 2017, should be approved by the government in 2018. In doing so, Mozambique shall follow the good practice adopted by Angola and Cabo Verde, putting the digital government strategy under the broader umbrella of an information society policy.

<sup>4</sup> The assignment was awarded to a private consultant, recruited by the Economic Union for Africa (UNECA).

<sup>5</sup> Notwithstanding the above, there is a general consensus among stakeholders that the strategy should be developed within the broader framework of the national development plan (in particular axis 1, "Strengthening the democratic rule of law, promoting good governance and reforming the state institutions").

<sup>6</sup> 2003 in Angola, 2005 in Cabo Verde, 2006 in Mozambique, 2010 in Sao Tome and Principe and 2017 in Timor-Leste.

<sup>7</sup> A Framework for Integrated Government Resources Planning (IGRP), delivered through a Private Technological Network of the State (Rede Tecnológica Privativa do Estado) (RTPE), connects government institutions and makes available more than 100 solutions to public entities through a shared service approach to avoid the duplication of efforts and promote savings across the public sector.

<sup>8</sup> The following objectives are attributed to the new institute: a) creation of an electronic communication platform of the government for all entities of the state; b) approval mechanism for the development of projects, acquisition of information systems, applications, database and ICT equipment to provide electronic government services; and c) ensure the management of the government's electronic network (Secretariado do Conselho de Ministros, 2017).

<sup>9</sup> Law 3/2017 on Electronic Transactions (9 January), attributes to INTIC the function of "regulating electronic transactions, electronic commerce and the electronic government".

<sup>10</sup> Government Resolution 9/2017 15 of February.

<sup>11</sup> The Directorate of IT reports to the Ministry of Development and Administrative Reform.

<sup>12</sup> CEVATEGE and ARN in Guinea Bissau and TIC Timor and the Directorate of IT and the Authority for the Regulation of Communications in Timor-Leste.

<sup>13</sup> Different cost structures need to be considered (e.g. specialised human resources, specific hardware, development of tailored software, security tests, usability tests, load tests, legal consulting services) to address multiple contingencies (e.g. sector of application, profile of final users, expected demands, future technological evolution, national or international regulations) (OECD, 2017b).

<sup>14</sup> Investments in digital technologies are becoming increasingly complex, and governments often have to manage in a context of significant budget and procurement constraints, rapidly evolving technology, together with rising expectations of transparency and collaboration on the part of private and civil society interests (OECD, 2016).

<sup>15</sup> Key recommendation 12 of the OECD Recommendation on Digital Government Strategies (OECD, 2014) encourages OECD member countries and adherent countries to “ensure that general and sector-specific legal and regulatory frameworks allow digital opportunities to be seized” namely by “reviewing them as appropriate”.

## References

- CEVATEGE (2018), LinkedIn profile, [www.linkedin.com/company/cevatege/](http://www.linkedin.com/company/cevatege/).
- Decreto 61/2017, de 6 de Novembro, Cria o Instituto Nacional de Governo Electrónico (INAGE), Maputo, Moçambique.
- Decreto-Lei n. 13/2014, de 25 de Fevereiro, Cria o Núcleo Operacional da Sociedade da Informação, Entidade Pública Empresarial, abreviadamente NOSI, EPE, Praia, Cabo Verde.
- Decreto-Lei n. 19/2008, de 16 de Junho, Criação do Instituto de Inovação e Conhecimento, São Tomé, São Tomé e Príncipe.
- Governo de Angola (2013a), *Plano Nacional da Sociedade da Informação 2013-2017*, [www.governo.gov.ao/VerPublicacao.aspx?id=1191](http://www.governo.gov.ao/VerPublicacao.aspx?id=1191).
- Governo de Angola (2013b), *Plano Estratégico para a Governação Electrónica 2013-2017*, [www.governo.gov.ao/VerPublicacao.aspx?id=1192](http://www.governo.gov.ao/VerPublicacao.aspx?id=1192).
- Governo de Cabo Verde (2005a), *Programa Estratégico para a Sociedade de Informação*, [www.caboverde-info.com/eng/Economia-Moderna/Eixos-da-Economia/Tecnologias-de-Informacao-e-Comunicacao-TIC-Ecosystema-numerico-4D/PESI-Programa-Estrategico-para-a-Sociedade-de-Informacao](http://www.caboverde-info.com/eng/Economia-Moderna/Eixos-da-Economia/Tecnologias-de-Informacao-e-Comunicacao-TIC-Ecosystema-numerico-4D/PESI-Programa-Estrategico-para-a-Sociedade-de-Informacao).
- Governo de Cabo Verde (2005b), *Plano de Ação para a Governação Electrónica*, [www.caboverde-info.com/Economia-Moderna/Eixos-da-Economia/Tecnologias-de-Informacao-e-Comunicacao-TIC-Ecosystema-numerico-4D/PAGE-Plano-de-Acao-para-a-Governacao-Eletronica](http://www.caboverde-info.com/Economia-Moderna/Eixos-da-Economia/Tecnologias-de-Informacao-e-Comunicacao-TIC-Ecosystema-numerico-4D/PAGE-Plano-de-Acao-para-a-Governacao-Eletronica).
- Governo de Moçambique (2006), *Estratégia de Governo Electrónico*, [www.portaldogoverno.gov.mz/por/content/download/1430/12107/version/1/file/Estrategia+do+Governo+Electr%E2%80%94nico-Mocambique.pdf](http://www.portaldogoverno.gov.mz/por/content/download/1430/12107/version/1/file/Estrategia+do+Governo+Electr%E2%80%94nico-Mocambique.pdf).
- Hanna, N. (2017), *Here's how developing countries can embrace the digital revolution*, World Economic Forum, Geneva, [www.weforum.org/agenda/2017/03/heres-how-developing-countries-can-embrace-the-digital-revolution](http://www.weforum.org/agenda/2017/03/heres-how-developing-countries-can-embrace-the-digital-revolution).
- Hanna, N. (2016), “Thinking about digital dividends”, *Information Technologies & International Development*, Vol. 12/3, pp. 25–30, <http://itidjournal.org/index.php/itid/article/viewFile/1539/553>.
- Instituto de Inovação e Conhecimento (2010), *Projecto STP EM REDE 2010-2013*, São Tomé.
- Ibledi, N. (2017), *Guidelines for the formulation of e-government strategies*, ESCWA, Beirut
- Lei n. 3 /2017, de 9 de Janeiro, Lei de Transacções Electrónicas, Maputo, Moçambique.
- OECD (2018a), *Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste*, OECD, Paris.
- OECD (forthcoming a), *The Digital Transformation of the Public Sector: helping Governments Respond to the needs of Networked Societies*, OECD, Paris.
- OECD (forthcoming b), *Issue Paper on “the Digital Government framework”*, OECD, Paris.
- OECD (2017a), *Creating a Citizen-Driven Environment through good ICT Governance – The Digital Transformation of the Public Sector: Helping Governments respond to the needs of Networked Societies*, OECD, Paris.
- OECD (2017b), *Digital Government Review of Norway: Boosting the Digital Transformation of the Public Sector*, OECD Digital Government Studies, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264279742-en>.

- OECD (2016), *Digital Government in Chile: Strengthening the Institutional and Governance Framework*, OECD Digital Government Studies, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264258013-en>.
- OECD (2014), *OECD Recommendation of the Council on Digital Government Strategies*, OECD, Paris, [www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm](http://www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm).
- PASP PALOP-TL (2018), Instituto Nacional de Fomento para a Sociedade da Informação, Project's Website, consulted on 11/05/2018, [www.pasp-paloptl.org/pt/pagina/instituto-nacional-de-fomento-para-sociedade-da-informacao](http://www.pasp-paloptl.org/pt/pagina/instituto-nacional-de-fomento-para-sociedade-da-informacao).
- Resolução do Governo N.º 9/2017 de 15 de Fevereiro, Política Nacional para as Tecnologias de Informação e Comunicações (TIC) (2017 a 2019), Dili.
- Resolução n. 15/2003, de 7 de Julho, Cria a Comissão Interministerial para a Inovação e a Sociedade da Informação, Praia, Cabo Verde.
- Secretariado do Conselho de Ministros (2017), Comunicado, October 3, Maputo, Mozambique. [www.portaldogoverno.gov.mz/por/content/download/8086/60989/version/1/file/COMUNICADO+D+A+34.%C2%AA+SOCM-2017.pdf](http://www.portaldogoverno.gov.mz/por/content/download/8086/60989/version/1/file/COMUNICADO+D+A+34.%C2%AA+SOCM-2017.pdf).
- Tavares, Orlando (2016), Cabo Verde - Quinze Anos de Governação Eletrónica Integrada, Praia.



## Chapter 4. Citizen-driven approaches for coherent and sustainable digital service delivery

*This chapter analyses and discusses the digital service delivery landscape in the African Portuguese-Speaking Countries and Timor-Leste (PALOP-TL) region. It starts by analysing openness and engagement practices of citizens and businesses in the six countries. It then discusses digital identity as a key enabler of sustainable and coherent public service delivery. The third section focuses on the scope and possibilities of leapfrogging ahead in the digital service delivery paradigm through digital by design, multichannel and integrated approaches. The chapter concludes by exploring the potential of the PALOP-TL region for cross-border digital service delivery.*

## Openness, collaboration and value creation

Digital technologies are transforming relationships between citizens and the public sector, thereby enabling seismic shifts in the efficiency and effectiveness of public services delivery, simplifying information and communications, and improving accountability. The potential for improved transparency, optimised communication and collaboration with the ecosystem of stakeholders for value creation is being increasingly embraced by governments for smarter policy making and policy implementation.

Pillar 1 of the OECD Recommendation on Digital Government Strategies (OECD, 2014) highlights the relevance of digital technologies for more open, inclusive, engaging and collaborative government as a means to better support economic growth and the well-being of citizens. The digital transformation requires public sectors to be able to shift from government-centred and agency-thinking mindsets to citizen-driven and commissioning-enabled cultures of action.

According to the community of bilateral and multilateral organisations that endorsed the Principles for Digital Development:<sup>1</sup> “successful digital initiatives are rooted in an understanding of user characteristics, needs and challenges”. Applying this approach encourages governments to co-create digital tools with businesses and citizens in ways that respond to the needs of a specific country context, region and community,<sup>2</sup> and which are tailored to fit local expectations, cultures and behaviours.

### **Box 4.1. Openness and co-creation: The experience of the City Government of Sekondi Takoradi Metropolitan Assembly (Kenya)**

Resource mobilisation is a key priority for the City Government Sekondi Takoradi Metropolitan Assembly (STMA) in Kenya, and an area where support from businesses is critical to success. Recognising this, the government has sought to leverage the expertise and networks of private sector associations in defining new opportunities to raise public funds. Together, a new digital tool was piloted to collect input from businesses on how they could be better supported by STMA. The process also revealed gaps in the current approach to setting business tax rates that, if addressed, could increase internal revenue generation. STMA committed to continued collaboration with businesses in areas of mutual interest.

Source: Open Government Partnership (2017), What makes for successful open government co-creation, [www.opengovpartnership.org/stories/what-makes-successful-open-government-co-creation](http://www.opengovpartnership.org/stories/what-makes-successful-open-government-co-creation).

Through “government as a platform” approaches (OECD, forthcoming a), governments are increasingly exploring opportunities to create mutual ownership and accountability processes for public value co-creation by using digital technologies and data to enable collaboration with and between societal stakeholders. Governments are also increasingly committed to being “open by default”, which involves proactively disclosing data in open formats and opening up administrative procedures by using digital technologies, unless there is a legitimate justification for not doing so. This open and collaborative policy orientation can have substantial positive impacts on civil society’s trust in public institutions.

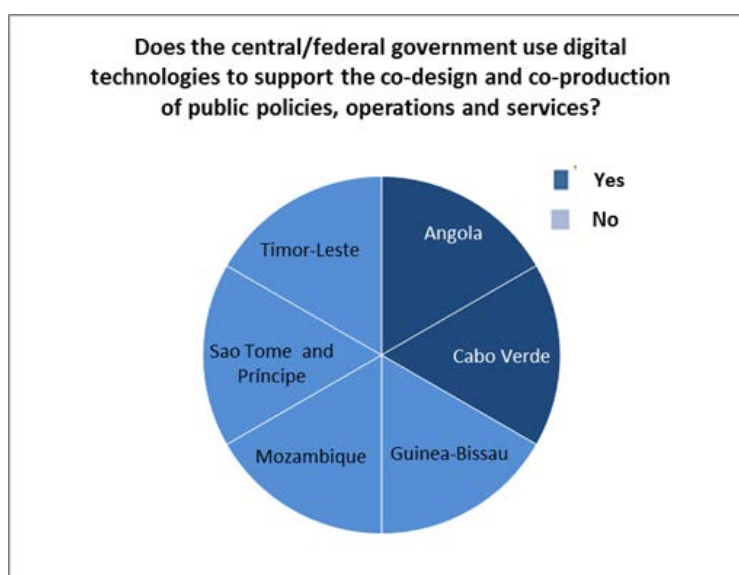


### *Assessing the experience of the PALOP-TL region*

Across the six PALOP-TL countries, digital technologies are widely recognised by both public and private actors as important tools to improve the transparency and integrity of the public sector and enhance citizens' trust. The opportunity to create a more informed citizenry, namely through online public information and communication, was repeatedly referenced by interlocutors during the fact-finding missions conducted, and would build on the steps already taken across PALOP-TL countries to improve their online presence.

As yet, PALOP-TL countries are not optimising the potential to collaborate with citizens through digital technologies. Just two governments - Angola and Cabo Verde - are actively taking steps to support the co-design and co-production of policies, operations and services through digital technologies (see Figure 4.1). In Cabo Verde, private and academic stakeholders expressed an interest in being involved in the policy formulation and implementation process, in-line with the commitment of the Board of Directors of the Operational Unit for the Information Society (NOSI) (*Núcleo Operacional da Sociedade de Informação*) to attribute a more substantive role to non-governmental actors in the reform of the public sector, and specifically in digital government policies. The new Strategic Council of the ICT Cluster in the country, which includes representatives from the private sector and academia (see Section 3.2), is a revealing example of such a commitment.

**Figure 4.1. Digital technologies for co-design and co-creation in PALOP-TL countries**



Source: OECD (2018b) Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste, OECD, Paris.

In Mozambique, the recently created Mozambican Association of Information Technologies Companies and Professionals (AMPETIC) has expressed a clear willingness to work collaboratively with the National Institute of Electronic Government (INAGE) (*Instituto Nacional do Governo Electrónico*) to support the development of digital government in the country. In Timor-Leste, the Transparency Portal is considered an important mechanism to raise the accountability of several public activities (See Box 4.2), providing citizens access to relevant information about critical activities of the government.

### Box 4.2. Transparency Portal in Timor-Leste

Transparency Portal is a website ([www.transparency.gov.tl](http://www.transparency.gov.tl)) active since 2011 that integrates:

1. The Budget Transparency Portal: presents data on state budget expenditure, execution and balance, and provides a solid platform to disaggregate expenditure data.
2. The Aid Transparency Portal: a central repository for all aid information in Timor-Leste that aims to improve aid transparency, accuracy and predictability and to ensure that the assistance provided is efficient and effective.
3. The eProcurement Portal: provides information on current tenders, including who was awarded the bid and the value of the contract.
4. The Government Results Portal: provides information on the most important government goals, projects and programmes, displaying different information for each target, including its purpose, physical and financial progress.

Source: [www.transparency.gov.tl](http://www.transparency.gov.tl).

Although the examples mentioned above of governments' willingness to improve transparency and to adopt an open by default policy, stakeholders largely agreed that more could be done in each of the PALOP-TL countries to optimise the use of digital technologies to collaborate and engage the public in the co-creation of public policies and in their implementation. Other priorities, including enhancing the efficiency and effectiveness of existing administrative services, has taken precedence in recent years, which could partially explain why technologies have not been fully leveraged.

The ranking of PALOP-TL countries in the United Nations E-Participation Index (see Figure 4.2) seems to confirm that there is still substantial room for improvement. The E-Participation Index analyses "e-participation according to three-tiers of participation: 1) e-information – or the provision of information on the Internet; 2) e-consultation – organising public consultations online; and 3) e-decision-making – involving citizens involved in decision-making processes." (United Nations, 2016a).<sup>3</sup>

**Table 4.1. United Nations E-Participation Index: Positions of the PALOP-TL countries**

	2014	2016	2018	Evolution
Angola	129	101	125	4
Cabo Verde	97	67	127	-30
Guinea-Bissau	186	157	186	0
Mozambique	97	149	122	-25
Sao Tome and Principe	186	179	176	10
Timor-Leste	110	133	153	-43

*Sources:*

United Nations (2018), UN E-Government Survey 2018, New York, [https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2018-Survey/E-Government%20Survey%202018\\_FINAL%20for%20web.pdf](https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2018-Survey/E-Government%20Survey%202018_FINAL%20for%20web.pdf).

United Nations (2016b), E-Government Survey 2016, New York, <http://workspace.unpan.org/sites/Internet/Documents/UNPAN97453.pdf>

In Mozambique, the Monitoring System, or *Monitoria Participativa* (MOPA), stands out as a particular example of a successful e-participation project for monitoring pro-poor policies in the field of waste management (see Box 4.3).

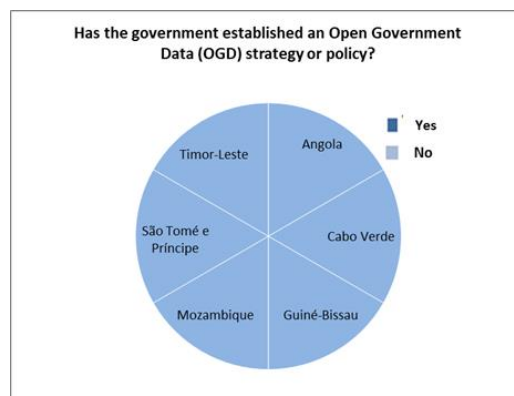
#### Box 4.3. The Monitoring System (MOPA) (Mozambique)

MOPA is a service based on a software platform, Ntxuva, which is designed to collect information from people via SMS, a mobile app, and a web portal. A voice interface in local languages is used to enhance access by less instructed populations. Members of the public can dial \*553# or access the website at [www.mopa.co.mz](http://www.mopa.co.mz) to report failure to empty waste bins, illegal dumping or inappropriate burning of garbage. The system provides visualisations and statistics originated from public information about urban services. It also promotes engagement among the local software development/innovation community. Users can add photos, comments and other clarifications for quick intervention by the city council. The Municipal Directorate of Hygiene and Cemeteries (DMSO), with the help of the municipal districts, manages and monitors the information.

Sources: United Nations (2016b), E-Government Survey 2016, New York, <http://workspace.unpan.org/sites/Internet/Documents/UNPAN97453.pdf>, [www.mopa.co.mz](http://www.mopa.co.mz).

Enabling open government data (OGD) would be an important milestone for PALOP-TL countries in their transition to digital government, and would be a worthy investment for these countries in the near term. Securing the availability and accessibility of OGD, and fostering its reuse by different communities across the public, private and third sectors, is an opportunity to enhance data-informed and inclusive policy decision making, stimulate innovation inside and outside of the public sector, and empower citizens to take more informed personal decisions (OECD, 2017). Transparency and the co-creation of public value are also important vehicles for social and economic development. When data is provided free of charge in machine readable formats, civil society or the private sector can create value-adding information and services, increasing the volume of private sector activities and contributing to stimulate the national economy. Increased revenue can then be returned to the government in the form of taxes (Ubaldi, 2013).

As yet, open government data strategies or policies have not been adopted by PALOP-TL countries, which is widely seen as a policy gap (see Figure 4.2). Given the priority afforded to OGD by varying stakeholders, it is anticipated that it will be introduced as part of the update or revision of digital government strategies in PALOP-TL countries in the short or medium term (see Section 3.1). Private and civil society stakeholders interviewed during the fact-finding missions see OGD as an opportunity to improve the transparency and accountability of public initiatives and stakeholders and to create new opportunities for public-private collaboration and co-creation.

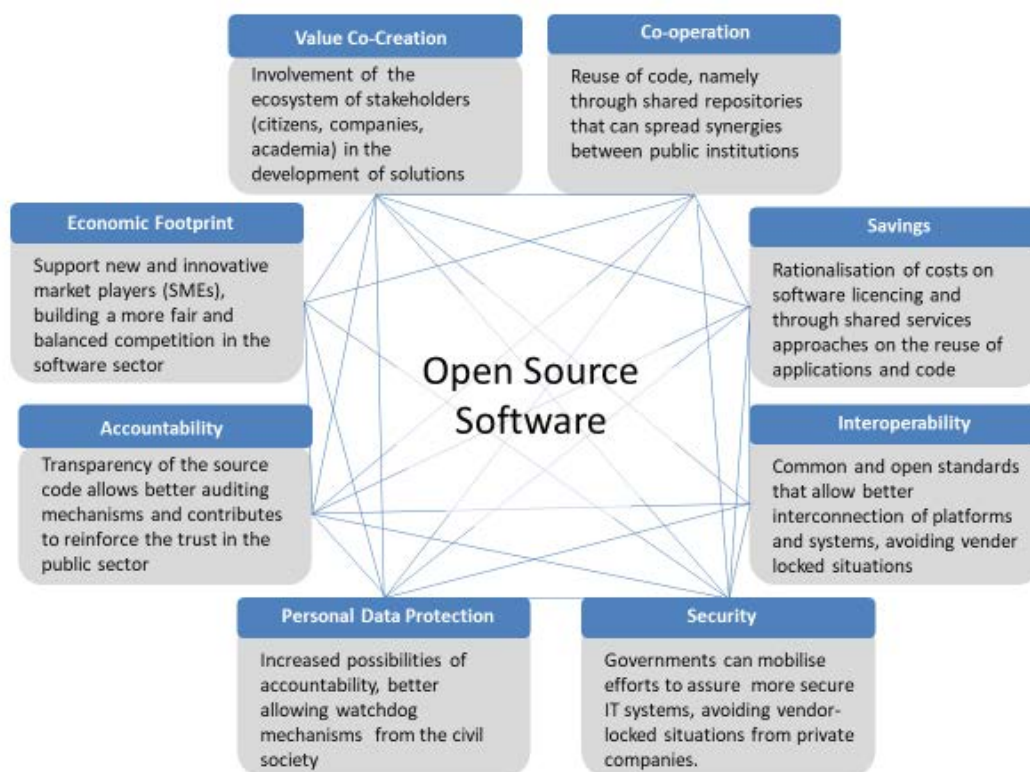
**Figure 4.2. Open government data strategies or policies in PALOP-TL countries**

Source: OECD (2018a), Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste, OECD, Paris.

The use of open source software (OSS) is another strategic policy objective that can have cross-cutting impacts on public sector activity. Although OSS is not a new policy topic in the digitalisation of public sectors, its relevance and benefits continue to be keenly discussed among digital government communities. Some of the particular benefits of OSS include: improved co-operation between the public sector through the reuse of solutions; increased involvement of the digital government ecosystem for co-value co-creation; optimisation of digital technologies through cost savings in software licencing and shared services approaches; heightened interoperability potential avoiding vendor-locked situations; and better security, personal data protection and accountability (see Figure 4.3).

Open source policies can be particularly relevant in developing country contexts as they have the potential to support the emergence of new market players. Since OSS is not dependent on licencing and is less restricted by copyright issues, strategic policies can allow national and local software developers and providers to better compete with international providers in delivering services to the public sector. Through a strategic prioritisation of open source in the public sector, combined with policies of open source research and development (R&D) in academia, governments can indirectly support the development of internal markets for digital technologies and the stimulation of small and medium-sized enterprises (SMEs) in the industry.

Figure 4.3. Open source software potential



Although strategic policies or initiatives on OSS were not identified in the PALOP-TL region, its potential was recognised. In March 2018, a PALOP-TL Conference on Free and Open Source Software (FOSS) was organised in Luanda to exchange knowledge and explore possible future opportunities for co-operation between the six countries of the region. During this meeting, a consensus was reached on the potential of free and open source software and an agreement struck on the development of a PALOP-TL repository of applications and source codes that could be used and reused as a shared service among public sectors in the region.

### Digital identity: A key enabler for the integrated development of digital government

Digital identity mechanisms allow the common identification of citizens and businesses by different levels and sectors of government, enabling smarter, more secure and better tailored public services through the better profiling of citizens. Proper digital identity mechanisms are able to enhance the management of data, better determine the identity of service users and develop an integrated view of users' needs and interactions with the public sector. Digital authentication and digital signature functions, typically integrated in the identity framework, allow simpler and more effective interactions with the government, substantially reducing red tape. Overall, digital identity systems act as an important lever to support a coherent, efficient and sustainable digital transformation of the public sector.

Multilateral agencies attach great importance to the development of digital identity systems as they can help improve the integrity and effectiveness of civil registration systems. Such systems are key to ensure the exercise of citizen rights (such as the right to vote and access to justice), to provide access to basic services (such as education or social assistance), to

ensure the fulfilment of civic duties (such as paying taxes), and to facilitate cross-border movements (European Commission, 2017).

The digitalisation of civil registries is a necessary pre-condition for the development of a public digital identity system,<sup>4</sup> and is an initiative in which all PALOP-TL countries have invested, with different levels of progress (see Table 4.2).

**Table 4.2. The path towards digital identity in the six PALOP-TL countries**

PALOP-TL – Progress towards digital identity	
Angola	In November 2017, Angola made an important step in this area with the launch of the new Identity Document ( <i>Bilhete de Identidade</i> ). The new document includes a chip that can store citizens' information, such as tax or electoral numbers. A QR code (Quick Response Code) allows for the contactless and agile use of this document by citizens. The new identity card is a visible output of the Platform of Integrated Management of Civil and Criminal Identification ( <i>Plataforma de Gestão Integrada da Identificação Civil e Criminal</i> ) that began to be developed at the beginning of 2017. The development of a digital identity solution in the new card is a short-term priority.
Cabo Verde	The new National Identification Card ( <i>Cartão Nacional de Identificação</i> ), launched in January 2018, allows the identification of citizens through digital authentication and digital signatures. The card is part of the National System of Civil Identification and Authentication ( <i>Sistema Nacional de Identificação e Autenticação Civil</i> , SNIAC), managed by the Ministry of Justice and developed by NOSI. Besides the National Identification Card, SNIAC is also responsible for managing the electronic passport (which includes biometric information), the titles of residence and the electoral register. Cabo Verde benefits, in this sense, from a centralised and cross-cutting system of civil identification, which constitutes an important enabler for digital government development in the country.
Guinea-Bissau	Consolidation of the civil register is underway through the digitisation of civil records. A public digital identity is a future policy priority.
Mozambique	Mozambique is currently focused on developing a public system of electronic certification ( <i>Sistema de Certificação Eletrónica do Estado</i> ), which will also allow the use of electronic signatures in the country. Systems development will begin in 2018 and will serve to improve the security of electronic transactions between the public administration, citizens and businesses.
Sao Tome and Principe	The civil register is being digitised and the development of a public digital identity framework is a future priority.
Timor-Leste	The government has reinforced its capacity to issue the Identity Document ( <i>Bilhete de Identidade</i> ) in the municipalities. The <i>Bilhete de Identidade</i> was an important development towards a totally digitised civil registry, and creating a digital identity is seen as the next priority.

*Note:* A Quick Response Code, currently known as QR code, is a machine readable optical label used to provide a link to a specific online address.

The six countries of the PALOP-TL region are in very different stages of digital identity development, and Cabo Verde is the only one that provides an integrated solution.<sup>5</sup>

Timor-Leste is taking all necessary measures to restore civil registration services and enable the efficient issuance and assignment of identity documents to its citizens.<sup>6</sup> In Sao Tome and Principe and Guinea-Bissau, a significant proportion of the population is not registered in the civil registry,<sup>7</sup> but these governments are taking steps to rectify this and to issue identification documents to all of their citizens (see Chapter 2). In these contexts, although the digitalisation of registries and the issuance of digital ID cards<sup>8</sup> are considered priorities, these countries are still at a preliminary stage of the civil registration process, so these tasks should also be accompanied by digital authentication and signing capabilities.

Mozambique has focused more attention on the state's electronic certification system, a mechanism that allows qualified electronic signature and other electronic security services to be activated with public keys, than on issuing digital identity cards or providing digital identity features. The low rate of digitalisation of registers, the multiplicity of identification numbers, which vary according to each sector, and the difficulties of cross-referencing information act to delay the process of developing citizens' digital identity.

Angola has recently taken a giant step towards digital identity by creating a new ID card that includes a chip that stores personal information about the holder and is readable through a QR code. The development of a digital identity solution (including digital authentication and digital signature) can also be achieved in the near term.

In Cabo Verde, the newly created national identification card is a document capable of going beyond the identification function. It is an instrument of interaction with the digital world, offering identification, authentication and digital signature capacities, thus opening up many possibilities and advantages for both the citizen and administration in terms of modernisation and administrative simplification.

The efforts underway in all the PALOP-TL countries reflect a clear understanding and commitment to digital identity as a key digital government enabler, and the potential for short, mid and long-term developments in this area look promising across the region.

### Foundations for sound digital service delivery

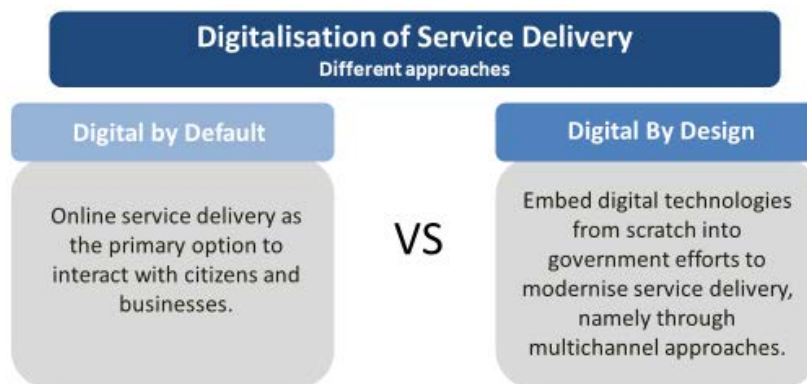
Enhancing the efficiency and effectiveness of public services delivery for citizens and businesses is one of the most common motivations of national e-government/digital government strategies, and online public services delivery are often the most visible result of digital government policies. New digital technologies, such as social media, cloud computing, mobile terminals and blockchain, also offer new opportunities for public service delivery.

A major trend in the development of digital public services delivery is the increase in mobile technologies and applications, which entail new development opportunities for the poorest and most vulnerable groups in the population, and drive initiatives to promote sustainable development and new ways of providing services. The accessibility and availability of mobile devices has had a tremendous impact on the shift from fixed to mobile public services, especially in developing countries, including PALOP-TL countries, although online service delivery remains a challenge for least developed countries and small island developing states (United Nations 2016a).

The progressive digitalisation of economies requires public digital services (OECD, forthcoming b). Beyond introducing digital technologies into public sector activities, to reproduce analogue services and undertake administrative processes in a digital way, the transformational objective is to integrate and embed digital technologies into the modernisation of public administrations across policy areas and at all levels of government (OECD, 2014a). This corresponds to a commitment to being “digital by design” in policy formulation, decision making, implementation and delivery of public services, and can serve to enable countries to leapfrog through different stages of public services delivery development.

Being digital by design implies that new public services are developed digitally at design or inception, and that governments adopt and maintain a multichannel approach to public services delivery where online and mobile services coexist with mechanisms of face-to-face or digitally assisted service delivery. This is not to be confused with being digital by default, where services are delivered mostly online, rendering new potential forms of exclusion for those without access to the Internet, and should not discriminate against segments of the population without Internet access and basic user skills (see Figure 4.4).

Figure 4.4. Digital by default vs digital by design



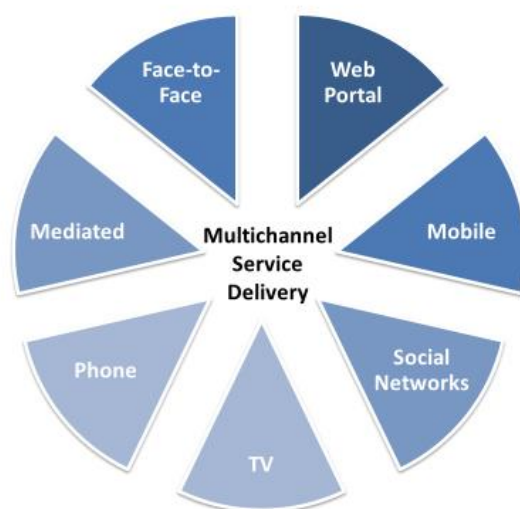
Improved service delivery through digital technologies is an important mechanism to promote the trust of citizens and generate positive perceptions of the public sector.

### *From primarily analogue to multichannel service delivery*

Multichannel service delivery can add considerable value to public services delivery in developing countries (see Figure 4.5). According to the United Nations (2012), “multichannel service delivery is the provision of public services by various means in an integrated and co-ordinated way. Citizens can make selections according to their needs and circumstances and receive consistent information and services across channels resulting in an increase in their satisfaction and trust in government.” The multiplication of channels can help overcome geographical, social and economic barriers for the delivery of services, which is particularly important for PALOP-TL countries.

The delivery of services through multichannel approaches is not new – face-to-face, telephone and regular mail delivery of services have co-existed for a long time – however, digital technologies have multiplied the types of channels and platforms now available. Web portals, mobile apps or SMS can make public services more readily available in remote areas. Given its reach across generations and socio-economic contexts, social media is also seen as a useful means by which to provide general and personalised information to citizens and businesses. Assisted digital services delivery is also a means to enable otherwise excluded groups (e.g. elderly, citizens with special needs) to access public services with the assistance of a professional.



**Figure 4.5. Multichannel service delivery for development contexts**

PALOP-TL countries are making use of varying channels for public service delivery. The more innovative examples include advanced mobile service delivery mechanisms, such as the *Casa do Cidadão Móvel* (Mobile Citizen Houses) and the National Telemedicine Service adopted in Cabo Verde, which make public and specialised medical services available across the nine populated islands of the country (see Box 4.4).

**Box 4.4. The Mobile Citizen Houses (Casa do Cidadão Móvel) and the National Telemedicine Service in Cabo Verde**

In Cabo Verde, the Mobile Citizen Houses (Casa do Cidadão Móvel) is a project designed to provide public services across the country. The project uses vehicles fitted with communications equipment to enable public officials to provide a range of services (e.g. creation of a company, issuing a civil certificate) to citizens in remote regions of the country. The mobile platform Connect Me (MKonekta), developed by NOSI, also makes citizen services available online (e.g. birth certificate, property certificate).

In 2012, to address human, spatial and financial resource constraints, the Government of Cabo Verde created a National Telemedicine Service to provide specialised medical services across the nine populated islands of the country. The service comprises 12 telemedicine centres installed in central and regional hospitals throughout the archipelago, and includes teleconsultation services, distance vocational training services and a virtual library. As Cabo Verde widens the coverage area for telemedicine, the 24 current medical specialties (offered throughout the country) will also be expanded.

Source: OECD (2018a) Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste; NOSI (2018), Centros de Telemedicina inaugurados em Santa Cruz e em Tarrafal de São Nicolau, [www.nosi.cv/index.php/pt/noticias/item/412-centros-de-telemedicina-inaugurado-em-santa-cruz-e-em-tarrafal-de-sao-nicolau](http://www.nosi.cv/index.php/pt/noticias/item/412-centros-de-telemedicina-inaugurado-em-santa-cruz-e-em-tarrafal-de-sao-nicolau).

Mobile technologies (e.g. SMS) are used to enable tax and revenue collection (as in Angola) or the delivery of health and education services (as in Timor-Leste). At the same time, several PALOP-TL countries have been implementing projects for assisted access

and training in ICT. Two particular examples include, Walking with ICT (*Andando com as TIC*), which has been implemented in Angola in recent years and provides access to the Internet and training for the population in remote areas of the country (improvements in the dissemination of information on public services is also envisaged in the future); and the creation of CCI (Internet Community Centres, *Centros Comunitários da Internet*) in Timor-Leste, where the government has been working with the support of Timor Telecom<sup>9</sup> to create a network of CCI around the country. These are equipped with computers and provide free Internet access to the population. They are also used for basic ICT training and to provide information to the population about public services.

With several important experiences of multichannel service delivery already underway, PALOP-TL countries have much to gain from replicating, scaling up or expanding these approaches in other sectors or at different levels of government. The opportunity also exists for PALOP-TL countries to share knowledge with each other on what does and does not work or any lessons learned.

### *Integrated service delivery in PALOP-TL countries*

PALOP-TL countries are adopting a range of measures to improve the quality and effectiveness of their public service delivery, many of which are focused on the development of online services.

In Angola, the online provision of public services in sectoral ministries has improved substantially in recent years. The Employment Portal (*Portal do Emprego*, <http://portaldoemprego.gov.ao>), the Businesses Unique Counter (*Guichet Único da Empresa*, <http://gue.minjus-ao.com>) and the Taxes Portal (*Portal do Contribuinte*) (<https://portalsigt.minfin.gov.ao>) reflect a government that is committed to digital services delivery platforms.

Other initiatives align with efforts to provide services to citizens through the creation of one-stop shops, both digital and face-to-face. However, the quality of these initiatives has shown uneven results, and there is room for substantial improvement. For example, through the Citizen's Portal (*Portal do Cidadão*, [www.cidadao.gov.ao](http://www.cidadao.gov.ao)), citizens have online access to information on the services of several sectors of the government (e.g. education, health, justice), however, in the vast majority of cases, the portal gives preference to information services rather than transactional services. Similarly, SIAC (Integrated Service Delivery for the Citizen, *Serviço Integrado de Atendimento ao Cidadão*) is a physical network of one-stop shops that provides services around the country with an accompanying portal directing citizens and companies to related services online. However, the online services are typically disconnected from the provision of face-to-face services, and still do not allow online operations to be performed without reverting to SIAC one-stop shop counters (requests for certificates, follow-up of processes, etc.).

Among the six PALOP-TL countries, Cabo Verde has the most mature and integrated service delivery system, and is considered a good practice example for the region and for the African context in general. Alongside a physical network of one-stop shops, the *Casa do Cidadão*, an online one-stop shop, the *Porton di nos Ilha* (<https://portondinosilhas.gov.cv>) provides centralised access to all services of the government. Organised through life events and available in a mobile responsive format, the portal has a section where citizens can provide feedback about available public services. However, in Cabo Verde, as elsewhere, the government should continue its integration efforts, since several sectorial portals continue to exist, which duplicate public sector efforts and add unnecessary complexity to the citizen's interaction with the public administration

(e.g. registries, notary and identification portal - [www.rni.cv/cni/](http://www.rni.cv/cni/); Ministry of Health and Social Security - [www.minsaude.gov.cv](http://www.minsaude.gov.cv); National Institute of Social Security - [www.inps.cv](http://www.inps.cv)).

In Mozambique, the Government's Portal (*Portal do Governo*, [www.portaldogoverno.gov.mz](http://www.portaldogoverno.gov.mz)) allows access to information about different public services. The project e-Bau is a signature one-stop shop for businesses in the region that aggregates services from different public institutions. The MCNET platform ([www.mcnet.co.mz](http://www.mcnet.co.mz)) is also an online single window for customs that integrates several services related to foreign trade and compliance with legal requirements for import, export and transit of goods (see Box 2.2, Chapter 2). The portals of the Tax Authority ([www.at.gov.mz](http://www.at.gov.mz)) and of the National Directorate of Registers and Notaries, as well as the limited service orientation of the Government Portal, signal that the country would benefit from better integrated digital service delivery. Given the level of maturity presented by Mozambique in several other digital government domains of analysis, the absence of an online one-stop shop capable of integrating services for citizens and businesses is a noticeable gap.

#### Box 4.5. Max Stahl Audiovisual Center (CAMSTL) in Timor-Leste

CAMSTL undertakes the preservation, cataloguing, archiving and disclosure of documents in audiovisual media format (currently there are about 3 000 hours of audiovisual material archived on a server installed in Dili, with a replica at the University of Coimbra, Portugal). In a country where books are scarce and expensive and not written in local languages, the educational content (visual and verbal) of the archive is an important vehicle for stimulating Timorese interest in the history of their country (especially those living in rural areas). In this way, it makes an important contribution towards the nation building process in the country.

Source: OECD (2018b), Fact finding interview - Centro Audiovisual Max Stahl Timor-Leste, February 2018

In Timor-Leste, information about public sector services is provided online through sector agency portals (for example the Ministry of Justice [[www.mj.gov.tl](http://www.mj.gov.tl)], the Ministry of Finance [[www.mof.gov.tl](http://www.mof.gov.tl)] and the Service of Registry and Business Verification SERVE [*Serviço de Registo e Verificação Empresarial*, [www.serve.gov.tl](http://www.serve.gov.tl)]). CAMSTL is one example of how civil society can actively participate in the development of a country through digital technology (see Box 4.5). Otherwise, the digitalisation of public services delivery is largely sector driven, which can lead to fragmentation and the proliferation of differing approaches. A new National Policy for ICT (*Política Nacional para as Tecnologias de Informação e Comunicações*), approved in February 2017, seeks to address this challenge by prioritising the development of a unique Interactive government portal where public agencies can share information and resources to support more integrated services delivery.<sup>10</sup>

In Guinea-Bissau and Sao Tome and Principe, the delivery of online services is in the very early stages of development, and public portals are still being made available interactively. One initiative, the Integrated School Management System (*Sistema Integrado de Gestão Escolar*) in Sao Tome and Principe stands out as a useful effort to overcome structural obstacles and use digital technologies to support the country's development process (see Box 4.6).

#### Box 4.6. Integrated School Management System in Sao Tome and Principe

The Integrated School Management System (Sistema Integrado de Gestão Escolar, SIGE) is a digital application that intends to comply with the commitment of the Ministry of Education of Sao Tome and Principe to improve the management of all areas of educational institutions, the development of school administrative functions and the optimisation of information flows.

SIGE organises and provides integrated statistical information and supports the academic and pedagogical management of schools, as well as the management of the educational system in general (including school enrolment). Funded by the World Bank, it is currently in the implementation phase.

Source: Ministério da Educação, Cultura e Ciência (2016), Governo lança Projeto de Sistema Integrado de Gestão Escolar, <https://mecc.gov.st/index.php/publicacoes/item/264-governo-lanca-projeto-de-sistema-integrado-de-gestao-escolar>.

Across PALOP-TL countries, the scope or reach of integrated digital services delivery differs depending on the country's level of development. Cabo Verde is in a more advanced stage, followed closely by Angola. Mozambique stands slightly behind, but with potential to bridge the gap given the existing public services already available online.

#### *Leapfrogging digital public services delivery*

The previous sections highlighted the considerable efforts of PALOP-TL countries in improving service delivery through the introduction of digital technologies. Angola, Cabo Verde and Mozambique are more advanced than Guinea-Bissau, Sao Tome and Principe and Timor-Leste, and yet public and private stakeholders interviewed during the fact-finding missions across the six countries generally agreed that the absence of coherent digital public services delivery policies in the countries have resulted in a fragmented, agency-centric online approach.

Developing countries can take divergent pathways to leapfrog and transition from manual administrative systems (analogue government) to citizen-driven, digital by design approaches (digital government). The strategies adopted should also be flexible enough to accompany different stages of development. The first step is to adopt or leverage digital solutions or technologies to enhance the core functions of government (see Chapter 2). The second is to enable coherent, cross-cutting co-ordination and institutional arrangements to support digital government development, and to ensure that these are underpinned by clear institutional, policy and legal frameworks (see Chapter 3) and key enablers (such as digital identity mechanisms). Vision, leadership and institutional co-ordination mechanisms supporting these public administrative reforms also play a crucial role in the adoption of coherent and innovative approaches.

Building on the progress highlighted in this review, PALOP-TL countries are encouraged to prioritise the creation of several basic pre-requisites (e.g. digitalisation of registries, updated legal and regulatory frameworks), and the six dimensions of digital government as a basis for their digital service delivery policies (see Box 4.7).

**Box 4.7. The six dimensions of digital government**

1. **From a user-centred to a user-driven administration:** A government that adopts approaches and takes actions to let the citizens and businesses determine and communicate their own needs to drive the design of policies and public services.
2. **From reactive to proactive policy making and service delivery:** A government that designs policies and services in anticipation of societal and economic developments and around related users' needs and brings a service to users before it is requested. The same applies to the release of data as open data (proactively) rather than reacting to a request for access to public sector information.
3. **From an information-centred government to a data-driven public sector:** A government that is capable of anticipating societal trends, understanding users' needs, and transforming the design, delivery and monitoring of public policies and services through the management and use of data.
4. **From the digitalisation of existing processes to digital by design:** A government that takes into account the full potential of digital technologies and data right from the start when designing policies and services, thereby mobilising new technologies to rethink, re-engineer and simplify internal processes and procedures in order to deliver the same efficient, sustainable and citizen-driven public sector, regardless of the channel used by the user to interact with the public authorities.
5. **From government as a service provider to government as a platform for public value co-creation:** A government that uses digital technologies and data to enable collaboration with and between societal stakeholders in order to harness their creativity and capacities to address challenges facing a country.
6. **From access to information to open by default:** A government that has committed to proactively disclosing data in open formats and to opening up its processes supported by digital technologies, unless there is a legitimate justification not to.

*Note:* The dimension "user-driven administration" is aligned with the principle "design with the user" of the "Principles for Digital Development", endorsed by several multilateral and bilateral donor organisations (see Chapter 2, [www.digitalprinciples.org](http://www.digitalprinciples.org)). The dimension "data-driven public sector" is aligned with the principle "be data-driven" and the dimension "open by default" is aligned with the principle "use open standards, open data, open source, and open innovation".

*Source:* OECD (forthcoming a) Issue Paper on "The Digital Government Framework"

## Towards cross-border service delivery in the PALOP-TL region

The OECD Recommendation on Digital Government Strategies (OECD, 2014) underlines the potential of international co-operation (key recommendation 8) for knowledge sharing, synergies beyond national borders and joint efforts for the definition of common goals among countries' public sectors. The progressive integration and strategic use of digital technologies in public service delivery creates new possibilities for the provision of services beyond national borders. Since online services can now be accessed independently of the physical location of the user, this locational shift has resulted in an important change in the public service paradigm. Services need to be prepared to be provided to users independently from the locus of access. Beyond delivering services to its citizens, digital

technologies also create new prospects for public sectors worldwide to offer integrated services to foreign citizens or businesses, provided basic security conditions are met and that citizens offer their consent to these operations. The technological prospects for cross-border services delivery are significant where appropriate mechanisms of data sharing, common recognition of digital certificates and digital platform connections are adopted. For instance, to promote deeper economic and social integration between different European countries, national public administrations are progressively presenting the possibility of opening a company abroad, sharing civil registry certificates with foreign public services, or exchanging patient summaries between national health services.

#### Box 4.8. Facilitating cross-border services in Africa

**Box heading - If you do not need a box heading, please delete this line.**

Tunisia and Senegal have been using blockchain technology to improve their financial domestic and cross-border transactions, eliminating inefficiencies and high transaction costs.

In 2015, *La Poste Tunisienne* (the Tunisian postal service) started operating an electronic payment system called the e-Dinar. Customers establish an account and replenish it by purchasing credit at a post office. E-Dinar is used, for example, to make instant mobile money transfers, pay for goods and services online and in person, send remittances and pay bills. *La Poste Tunisienne* strictly controls the issuance and circulation of the e-Dinar to prevent it from being used for illegal transactions. Senegal has followed Tunisia's footsteps by launching a new national digital currency, the eCFA, based on cryptocurrency blockchain technology. The eCFA high-security digital instrument can be held in all mobile money and e-money wallets and is compatible with other digital cash systems in Africa. The currency is secured by cryptographic protocols to ensure that it cannot be counterfeited. The Central Bank of West African States (BCEAO), which serves countries using the CFA franc, has already drawn up its own e-currency regulations and will be responsible for the currency's distribution across the region in Phase 2. It is expected to be circulated in Benin, Burkina Faso, Côte d'Ivoire, Guinea-Bissau, Mali, Niger and Togo. These examples demonstrate that technological leapfrogging could help African countries to bypass stages of technological development and adopt the latest technological advances.

*Note:* The CFA franc is the name of two currencies, guaranteed by the French treasury, used in West and Central African countries. Both currencies are pegged to the Euro.

*Source:* African Business Magazine (2017), Senegal creates digital currency history, <https://africanbusinessmagazine.com/african-banker/senegal-creates-digital-currency-history/>.

In line with the progressive integration of technologies in services and processes, governments of PALOP-TL countries have intensified co-operation in e-government/digital government domains in recent years. With the support of the Portuguese-Speaking Countries Community (CPLP), substantial investments have been made in deepening the channels of communication and reinforcing the collaboration and trust of senior digital government officials in these countries.

Building on common cultural ties, the significant movement of citizens in the region, institutional and legal similarities, and intense economic relations, PALOP-TL governments could work to explore the development of cross-border services. To start exploring this potential, particular attention could be given to the alignment of legal frameworks, the adoption of common data standards, the interoperability of digital identity mechanisms, and mutual recognition of digital certificates.

The selection of services to start this co-operation could also be prioritised as a first step towards cross-border services integration. For example, the ambition in Timor-Leste to establish a single electronic window to integrate trading procedures between CPLP countries and create links between CPLP and ASEAN countries could be an important basis for PALOP-TL co-operation in the future (Ministry of Finance of Timor-Leste, 2018). This work could consider synergies with the experience of the MCNET project in Mozambique (<https://tradenet.mcnet.co.mz>), which also functions as a single window for external commerce (see Chapter 2, Box 2.2). Another example would be cross-border services to enable the creation of a company. Building on Angola's Businesses Unique Counter (*Guichet Único da Empresa*, <http://gue.minjus-ao.com>), Cabo Verde's Business in One Day (*Empresa no Dia*) project and the e-Bau project in Mozambique, and extending these efforts across countries, could have important economic spin-offs for the countries involved.

The PALOP-TL regional context provides an interesting basis to leverage cross-national co-operation in order to achieve common goals around shared priority policy areas. Building on several years of collaboration between the entities of the six countries that coordinate digital government, the development of cross-border services would represent an ambitious but concrete goal to nurture digital-driven co-operation across the public sectors of the region in coming years.

## Notes

<sup>1</sup> Currently endorsed by 88 organisations, including USAID, UNICEF, NDI, Grameen Foundation, Intra-Health International, SIDA and Bill and Melinda Gates Foundation.

<sup>2</sup> In line with the 2nd principle, called “Understanding the Existing Ecosystem”.

<sup>3</sup> The most common e-participation tools and activities include, but are not limited to: information provision online, including open government data; e-campaigning, e-petitioning; co-production and collaborative e-environments, including innovation spaces, hackathons, crowdfunding; public policy discourses, including crowdsourcing; online consultation and deliberation; argument mapping; and e-polling, e-voting (United Nations, 2016b).

<sup>4</sup> However, digitalisation should not be introduced in a vacuum, but as part of a set of structural measures to support civil registers. In order to improve the integrity, effectiveness, and completeness of the civil registration there is a need to tackle the reasons why individuals do not register, the technical failures of the system and corruption in implementation (European Commission, 2017).

<sup>5</sup> Cabo Verde is in the most advanced stage of its development, benefiting, in this sense, from a centralised and cross-cutting system of civil identification that constitutes an important enabler for digital government development in the country. Nevertheless, additional efforts seem required to ensure that public sector institutions across different sectors of government are able to benefit from this important infrastructure, offering citizens and businesses more coherent, convenient and sustainable processes and services. After having successfully established a national identification card, the Government of Cabo Verde has now turned its focus to ensuring its effective use. A strong mobilisation of the public institutions to adopt the new digital authentication and digital signature mechanisms will be required. For instance, this should be assumed as a requisite when procuring new solutions, when applying to any kind of public funding of projects or when presenting cost-benefit analysis of the investments to be made (see Section 3.4). In addition, communication campaigns to inform citizens and businesses about the benefits of using these new digital tools are also an important mechanism to generate the necessary demand and raise the expectations of the digital government ecosystem of stakeholders.

<sup>6</sup> During and even after the Indonesian occupation, many Timorese were left without documentation, and many have not even been registered.

<sup>7</sup> In Guinea-Bissau, about two thirds of the population is not yet registered in the civil registry.

<sup>8</sup> Digital ID cards are cards containing machine-readable information about their holder, such as their tax payer number and electoral number.

<sup>9</sup> A telecommunications service provider.

<sup>10</sup> Resolução do Governo N.º 9/2017 de 15 de Fevereiro.



## References

- African Business Magazine, (2017), Senegal creates digital currency history, <http://africanbusinessmagazine.com/african-banker/senegal-creates-digital-currency-history>.
- European Commission (2017), *Digital4Development: mainstreaming digital technologies and services into EU Development Policy*, European Commission, Brussels, [https://ec.europa.eu/europeaid/sites/devco/files/swd-digital4development\\_part1\\_v3.pdf](https://ec.europa.eu/europeaid/sites/devco/files/swd-digital4development_part1_v3.pdf).
- Ministry of Finance of Timor-Leste (2018), National Single Window, [www.mof.gov.tl/frc\\_menu/trade-facilitation/national-single-window/?lang=en](http://www.mof.gov.tl/frc_menu/trade-facilitation/national-single-window/?lang=en).
- Ministério da Educação, Cultura e Ciência (2016), Governo lança Projeto de Sistema Integrado de Gestão Escolar, <https://mecc.gov.st/index.php/publicacoes/item/264-governo-lanca-projeto-de-sistema-integrado-de-gestao-escolar>.
- NOSI (2018), Centros de Telemedicina inaugurados em Santa Cruz e em Tarrafal de São Nicolau, [www.nosi.cv/index.php/pt/noticias/item/412-centros-de-telemedicina-inaugurado-em-santa-cruz-e-em-tarrafal-de-sao-nicolau](http://www.nosi.cv/index.php/pt/noticias/item/412-centros-de-telemedicina-inaugurado-em-santa-cruz-e-em-tarrafal-de-sao-nicolau).
- OECD (forthcoming a), Issue Paper on "The Digital Government Framework", OECD, Paris.
- OECD (forthcoming b), *The Digital Transformation of the Public Sector: helping Governments Respond to the needs of Networked Societies*, OECD, Paris.
- OECD (2018a) *Survey of the Study Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste*, OECD, Paris.
- OECD (2018b), Fact finding interview - Centro Audiovisual Max Stahl Timor-Leste, February 2018.
- OECD (2017), *Government at a Glance 2017*, OECD Publishing, Paris, [http://dx.doi.org/10.1787/gov\\_glance-2017-en](http://dx.doi.org/10.1787/gov_glance-2017-en).
- OECD (2014), Recommendation of the Council on Digital Government Strategies, OECD, Paris, [www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm](http://www.oecd.org/gov/digital-government/recommendation-on-digital-government-strategies.htm).
- Ohada (2017), Déploiement du RCCM informatisé : après le Mali et le Burkina Faso, la Guinée Bissau reçoit la solution logicielle et des équipements informatiques, [www.ohada.com/actualite/3754/deploiement-du-rccm-informatise-apres-le-mali-et-le-burkina-faso-la-guinee-bissau-recoit-la-solution-logicielle-et-des-equipements-informatiques.html](http://www.ohada.com/actualite/3754/deploiement-du-rccm-informatise-apres-le-mali-et-le-burkina-faso-la-guinee-bissau-recoit-la-solution-logicielle-et-des-equipements-informatiques.html).
- Open Government Partnership (2017), What makes for successful Open Government co-creation?, [www.opengovpartnership.org/stories/what-makes-successful-open-government-co-creation](http://www.opengovpartnership.org/stories/what-makes-successful-open-government-co-creation).
- Portal do Governo de Moçambique (2015), Inaugurado Centro de Dados do Governo, <http://portaldogoverno.gov.mz/index.php/por/Imprensa/Noticias/Inaugurado-Centro-de-Dados-do-Governo>.
- Resolução do Governo N.º 9/2017 de 15 de Fevereiro, Política Nacional para as Tecnologias de Informação e Comunicações (TIC) (2017 a 2019), Dili.
- The New Times (2015), Tigo launches cross border mobile money services between Rwanda and DRC, [www.newtimes.co.rw/section/read/193924](http://www.newtimes.co.rw/section/read/193924).
- Ubaldi, B. (2013), "Open Government Data: Towards Empirical Analysis of Open Government Data Initiatives", OECD Working Papers on Public Governance, No. 22, OECD Publishing, Paris, <http://dx.doi.org/10.1787/5k46bj4f03s7-en>.

United Nations (2018), *UN E-Government Survey 2018*, New York,  
[https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2018-Survey/E-Government%20Survey%202018\\_FINAL%20for%20web.pdf](https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2018-Survey/E-Government%20Survey%202018_FINAL%20for%20web.pdf).

United Nations (2016a), *UN E-Government Development Index 2016*, New York,  
<https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2016-Survey/Executive%20Summary.pdf>.

United Nations (2016b), *E-Government Survey 2016*, New York,  
<http://workspace.unpan.org/sites/Internet/Documents/UNPAN97453.pdf>.

United Nations (2012), *UN E-Government Survey 2012*, New York.

World Bank (2018), ID4D – Identification for Development, <http://id4d.worldbank.org/>.

## *Recommendations and proposals for action*

### Seizing the digital transformation of the public sector in each PALOP-TL country

In light of the key assessments explored above, PALOP-TL governments could consider implementing the following policy recommendations:

#### *Angola*

---

##### Proposals for action

---

##### **Core government functions and digital solutions**

- Use the Integrated Management Information System of Territory Administration (SIIGAT) to collect performance indicators on public policy implementation at the local level.
- Establish measurable results and objectives to support the implementation of digital government policies and programmes, as part of the new state reform strategy (under preparation).
- Keep the biometric database of civil servants updated ("proof of life"), namely by considering taking advantage of the new identity card features (microchip).

##### **Institutional foundations for a sound digital government ecosystem**

- Establish guidance for engaging an ecosystem of public, private and civil society actors in the design, implementation and monitoring of digital government policies.
- Develop a monitoring and impact assessment framework for digital government and use that framework to guide the interactive development of digital government.
- Strengthen the relevance and regularity of meetings of the Council for Information Technologies (*Conselho para as Tecnologias da Informação*) to better support implementation of the updated National Plan for the Information Society. Promote knowledge sharing and synergies among public stakeholders.
- Secure dedicated resources through the national budget, to be managed by INFOSI – National Institute for the Promotion of the Information Society (*Instituto Nacional de Fomento da Sociedade da Informação*), to co-finance projects across sectors and levels of government in order to better promote a coherent digital government.
- Establish policy levers, co-ordinated by INFOSI, to optimise public IT expenditure (e.g. avoiding the dispersion of databases and servers) though, for example, the mandatory evaluation of digital technologies investments above a certain threshold. The adopting of business cases and project management for public sector projects should support this policy.
- Create a professional information and communication technology (ICT) career in public administration. Improve and harmonise the remuneration of ICT professionals to retain ICT skills in public administration.
- Establish national digital skills training programmes, including for delivery in rural areas, to improve digital literacy, reduce the digital divide and improve citizen access to digital public services.

##### **Citizen-driven approaches for a sustainable and coherent digital service**

- Establish and implement protocols to share data between government agencies and public services, and to store it in the public data centre managed by INFOSI.
  - Accelerate the development of an interoperability platform based on the government's private network (*Rede Privativa do Estado*) to promote the mutual exchange and use of data among public agencies.
  - Define a public digital identity framework based on the recently launched new Identity document (*Bilhete de Identidade*).
  - Improve co-operation between the network of physical one-stop-shops SIAC (*Sistema Integrado de Atendimento ao Cidadão*) and the Citizen's Portal (*Portal do Cidadão*).
  - Expand and improve the Unique Business Counter (*Guichet Único da Empresa*) to facilitate and promote entrepreneurial activities in the country.
  - Facilitate the installation of mobile spaces equipped with public access computers and free technologies in rural areas (*project Andando com as TIC*) and accelerate the delivery and use of digital technologies in schools (*project Meu Kamba*).
-

## *Cabo Verde*

### Proposals for action

#### **Core government functions and digital solutions**

- Take the necessary steps to consolidate the information provided by the Municipal Information System (SIM) on the municipal budgets, within the government national accounts.
- Accelerate the development of an e-procurement platform in line with the public procurement law.
- Develop applications and systems to archive, disseminate and grant access to statistical products and indicators by citizens and companies, on an open and free basis.
- Take all measures to create an automatic voting registration system (potentially conducive to an electronic voting system).

#### **Institutional foundations for a sound digital government ecosystem**

- Engage the private sector, academia and civil society in the completion or implementation of the new digital government strategy.
- Consider the integration of new technological trends (cloud computing, blockchain etc.) and digital government paradigms (digital by design, open by default, government as a platform) to secure a shift from e-government to digital government approaches.
- Continue the development of the Integrated Government Resources Planning (IGRP) as an important shared tool that allows better communication. Share information from different government information systems.
- Reinforce the role of the interministerial body with co-ordination responsibilities to synchronise actions, projects and possible synergies on digital government.
- Clarify the role of the Operational Unit for the Information Society (NOSI) (*Núcleo Operacional da Sociedade de Informação*) in the governance framework.
- Consider the development of a digital skills training programme for government officials focused on the promotion of user, professional and complementary competencies.
- Harmonise the remuneration of ICT professionals across the public sector in order to mitigate potential brain-drain.

#### **Citizen-driven approaches for a sustainable and coherent digital service**

- Rationalise the number of public sector portals providing services to citizens and businesses, and increase efforts to concentrate services in the *Porton di nos Ilha* portal.
- Reinforce efforts to map service delivery processes in the entire public administration to proceed with simplification and digitalisation efforts.
- Adopt digital authentication and digital signatures in citizen and business services through the use of the recently launched National Identification Card (*Cartão Nacional de Identificação*).
- Expand and scale up the use of mobile technologies for public service delivery across sectors and levels of government to simplify and improve the convenience of the interactions between citizens, businesses and the public sector.
- Reinforce NOSI's responsibility to design and implement an open government data and open source software initiative in order to promote the transparency of government activities and reinforce citizen trust, better enable public-private value co-creation, and strengthen the competitiveness of national digital technology companies.
- Create a resource centre/online platform to provide remote learning tools for municipal officials (manuals of procedures, laws and forums).
- Establish and implement protocols for the mutual exchange and use of data among government agencies.

## Guinea-Bissau

### Proposals for action

#### Core government functions and digital solutions

- Take the necessary steps to support the effective functioning of the Automated System for Customs Data (ASYCUDA ++ ) and the Integrated Public Financial Management System (SIGFIP). Connect these systems to the central treasury to secure and safeguard the government's revenue pipeline and enable coherent financial forecasting.
- Digitise the public service registry to stabilise the payroll and ensure government oversight and management of its human resources. Prioritise the rationalisation of security service personnel (police and military), teachers and health professionals.
- Continue the development of the Integrated Human Resources Management System of the Public Administration (SIGHRAP) with a view to creating a government database to enable single payroll management.
- Take the necessary measures to create a decentralised communication network between public administration services.

#### Institutional foundations for a sound digital government ecosystem

- Develop a digital government strategy as a means to define common goals and streamline priorities for the digitalisation of the public sector of Guinea-Bissau. Engage the digital government ecosystem of stakeholders in this process to ensure co-ownership and co-responsibility.
- Reinforce and clarify the leadership and co-ordination role of the Centre for the Technological Valorisation and Electronic Governance (*Centro de Valorização Tecnológica e Governação Electrónica*, CEVATEGE) and consider prospects to secure a pipeline of human and financial resources to support its functioning.
- Establish guidelines for the pre-evaluation of digital technology investments above a certain threshold, under the leadership of CEVATEGE.
- Consider the creation of a digital government steering committee, bringing together the senior officials that co-ordinate ICT policy in several sectors of government. Chaired by CEVATEGE, the committee should be responsible for overseeing the implementation of the new digital government strategy and securing the co-ordination of efforts across the public administration of Guinea Bissau.

#### Citizen-driven approaches for a sustainable and coherent digital service

- Digitalise the civil registry as a first step towards the development of a digital identity framework that can allow the country to leapfrog several stages of digital government development.
- Prioritise the short-term development of an integrated portal with information about public services available across the public administration.
- Prioritise the development of innovative e-Education and e-Health solutions in partnership with donors and non-governmental organisations (NGOs).
- Establish a network of spaces of assisted access to digital services in order to guarantee the delivery of public services to segments of the population less familiar with the use of digital tools.
- Establish national digital skills development programmes with a view to enabling implementation in rural areas to improve digital literacy, reduce the digital divide and promote access to and use of digital public services.

## Mozambique

### Proposals for action

#### Core government functions and digital solutions

- Continue prioritising the establishment of a link between district budgets and plans and the e-SISTAFE terminal to strengthen decentralised public finance management.
- Continue to develop a human resources management system that integrates information on the entire life cycle of public administration employees.
- Support the initiatives of the National Institute of Statistics in the development of applications and systems to archive, disseminate and grant access to statistical products and indicators by the government, citizens and companies, including the production of vital statistics.
- Consider the creation of centralised vital statistics database at the Ministry of Justice.

#### Institutional foundations for a sound digital government ecosystem

- Adopt a standard, safe and secure government e-mail solution for all government officials.
- Secure the active engagement of the ecosystem of stakeholders in the development, implementation and monitoring of digital government initiatives and projects.
- Develop a monitoring methodology to measure the outputs, outcomes and impacts of the new Information Society Policy (2018).
- Designate the National Institute of Electronic Government (INAGE) (*Instituto Nacional do Governo Electrónico*) the responsibility to develop and implement technical standards and guidelines for application in the development of public IT systems.
- Identify and implement policy levers that can enable INAGE to develop coherent and sustainable digital government, including, for example, co-funding mechanisms, the co-ordination of public ICT procurement policy, and the pre-evaluation of digital technology investments through standardised business cases.
- Launch the new Information Society Policy to drive digital government development in the country.

#### Citizen-driven approaches for a sustainable and coherent digital service

- Prioritise implementation of the interoperability project to enable mutual exchange and use of data among public sector institutions.
- Digitise the civil register as a key requisite for developing a digital identity framework that can support relationships between citizens and businesses and the public sector.
- Enhance the use of the public data centre, namely the Maluana data centre, by different sectors, levels and institutions of government.
- Secure a multichannel policy for service delivery that enables the government to respond to user preferences and demands in a way that is tailored to different levels of digital user skills.
- Implement a one-stop-shop policy for face-to-face and digital service delivery that gives citizens and businesses integrated access to services provided by several institutions. Examples such as the e-Bau and the Mozambique Community Network (MCNET) could be considered as a reference.
- Set-up a network of spaces for assisted access to digital services to enhance the delivery of public services for citizens and business less familiar with the use of digital tools.

## *Sao Tome and Principe*

---

### Proposals for action

---

#### **Core government functions and digital solutions**

- Finalise the creation of a government private network that can connect public sector institutions and provide shared digital services.
- Subject to the availability of additional resources, establish a communication platform for the public sector in order to create the foundations for a unified joint digital document management system (case management system) for the public administration.
- Create a human resources management system for the public administration, namely to automate the process of authorising the payment of salaries.

#### **Institutional foundations for a sound digital government ecosystem**

- Adopt a standardised, safe and secure government e-mail network for all governmental officials.
- Adopt procedures for the pre-evaluation of public digital technologies investments above a certain threshold.
- Establish guidance to engage an ecosystem of public, private and civil society stakeholders in the design, implementation and monitoring of digital government policies.
- Reinforce the mandate and responsibilities of the Institute of Innovation and Knowledge (INIC, *Instituto de Inovação e Conhecimento*) to lead and co-ordinate the digital government policy in the country. Allocate the proper human and financial resources.
- Establish a career path for ICT professionals within the public sector and develop ICT skills training programmes for government officials that are focused on the promotion of user, professional and complementary competencies.

#### **Citizen-driven approaches for a sustainable and coherent digital service**

- Complete digitalisation of the civil register to better manage citizen data and improve citizen access and interactions with the public sector.
  - Digitise population registry, real-estate information (land cadastre and registration of ownership), business registry, vehicle registry, identification of physical and legal persons, and establish mechanisms to ensure the security and integrity of these records.
  - Adopt functional interoperability standards and work processes for digital registries to ensure the availability, integrity and security of stored data.
  - Create a digital one stop shop for the delivery of services to citizens and companies (e.g. *Porton de nos Ilha* in Cabo Verde).
  - Engage the private sector in the provision of technical solutions to facilitate digital public services delivery (e.g. e-payment of taxes and fees).
  - Set-up a network of spaces for assisted access to digital services to enhance the delivery of public services for citizens and business less familiar with the use of digital tools.
-

**Timor-Leste**

## Proposals for action

**Core government functions and digital solutions**

- Upgrade the operability of Freebalance across government.
- Update and cross-reference data between tax administration, social security, public service and civil registries.
- Support the mission of the Directorate-General Statistics and Directorate-General Policy & Research within the Ministry of Finance to collect data with the objective of later developing applications and systems to archive, disseminate and grant access to statistical products and indicators for government, citizens and companies.
- Develop standard e-mail solutions for all governmental officials and a secure and back-up mailing system for officials.

**Institutional foundations for a sound digital government ecosystem**

- Clarify the different roles of TIC Timor, the National Directorate of ICT (Ministry of Development and Administrative Reform) and the Authority for the Regulation of Communications (*Autoridade Reguladora das Comunicações*), and agree on mechanisms to promote shared information and communication exchange and co-ordination.
- Implement the National Policy for ICT 2017-2019, namely the digital government component, and establish measures to monitor and assess the impact of the digital government policy and programmes.
- Establish guidance to engage public, private and civil society actors in the design, implementation and monitoring of digital government policies.
- Create a professional ICT cadre and career within the public administration to support the recruitment and retention of ICT skills within government.
- Develop ICT skills training programmes for delivery at the national level, as well as in rural areas, to improve digital literacy and reduce the digital divide.

**Citizen-driven approaches for a sustainable and coherent digital service**

- Establish the interoperability of inter-government ICT systems to cross-reference data between civil registries, the tax administration and the social security system. Develop an interoperability framework based on good practice experience in these areas.
- Consider prioritising a multichannel and one stop shop policy for service delivery, enabling the government to respond to citizen and business preferences and different levels of digital user skills when accessing public services.
- Develop training programmes to improve citizens' digital skills, to be implemented through the use of free-internet zones, especially in the rural areas, in partnership with donors, businesses, foundations and NGOs.
- Expand and replicate digital services delivery innovations beyond pilot districts (for example, *Liga Inan*, mobile health services, and Hamutuk, nutrition projects).
- Foster the use audio-visual tools in schools, especially in rural areas, and create online libraries. Extend the training programmes on digital skills at the national level, especially in the rural areas, in order to improve digital literacy and reduce the digital divide.



## Laying the foundations for a digital government roadmap in the PALOP-TL region

In light of the key assessments exposed above, the PALOP-TIL governments should consider jointly implementing the following policy recommendations:

---

### Proposals for action

---

#### 1. Co-ordination and institutional co-operation

- 1.1 Strengthen co-ordination and synergies among PALOP-TL Countries on digital government by building on existing good practices and experiences among the Community of Portuguese-Speaking Countries (CPLP), PALOP-TL, and European Union Development Co-operation programmes. Regular meetings should take place that bring together high level representatives from each of the countries, involving national chief information officers and digital government experts or specialists to undertake the following:
  - a. Steer and oversee the implementation of the PALOP-TL Common Action Plan for Digital Government (see proposal for action 1.2).
  - b. Exchange knowledge, explore synergies for co-operation and discuss priorities for the development of digital government in the region.
  - c. Develop and implement shared strategies to seek funding for common initiatives and projects (including grants and loans from multilateral and bilateral organisations, public-private partnerships, triangular and delegated co-operation modalities, EU blending operation and other innovative financing instruments).
- 1.2 Elaborate a prioritised, sequenced and time bound PALOP-TL Common Plan of Action for Digital Government. The action plan could develop or strengthen shared knowledge and reinforce co-operation between the countries of the region, including in the following areas:
  - a. The necessary alignment with the national digital government and/or information society strategies, exploring possible synergies and joint efforts for the accomplishment of the public administration reform plans, aligned with the national and PALOP-TL regional development strategies.
  - b. The possible alignment with the digital agenda of the CPLP.
  - c. The involvement of the digital government ecosystem of stakeholders (e.g. public, private and civil society) in the design, implementation and monitoring of the action plan in order to promote co-ownership and co-responsibility.
  - d. The establishment of a monitoring and evaluation (M&E) system and methodology to ensure that the results and objectives underway are achieved and to enable transparency mechanisms that can strengthen citizens' trust.

#### 2. Knowledge sharing and skills

- 2.1. Promote knowledge exchange initiatives that can strengthen the co-operation among the countries on several digital government topics and enhance shared efforts towards the digital transformation of the public sector. The following specific initiatives should be considered:
  - a. Ensure the sustainability of the Digital Government PALOP-TL portal to exchange knowledge and information and share good practices.
  - b. Create a group of digital government users or practitioners to share experiences across PALOP-TL countries on "what works and what does not work" in the key digital government domains (e.g. digitisation of public records, interoperability, digital identity, and digital services delivery, such as e-health and e-education projects, and multichannel services delivery).
  - c. Organisation of an annual event that could bring together public, private and civil society stakeholders to discuss the opportunities, challenges and trends on PALOP-TL digital government co-operation. A joint effort with the annual e-Governance Conference of the Portuguese-Speaking Countries Community (CPLP) could be explored.
- 2.2 Develop and implement a digital skills development programme for the PALOP-TL region to enable shared knowledge and learning and collectively develop digital competencies and capacities across PALOP-TL public services. The programme could include the following activities or components:
  - a. Shared e-learning platform with common training courses for adoption or use by public administrations in each of the countries.
  - b. Internships and secondments for ICT Professionals in different countries of the region.
  - c. Partnerships between academic institutions for joint research and development on digital government.

---

#### 3. Developing joint guidelines and standards

- 3.1 Promote the adoption of common interoperability standards that can enable public data exchange and reuse in the region. Building on the national efforts underway, a PALOP-TL Interoperability Framework and a list of standards for the region could be considered.
- 3.2 Adopt a regional open government data policy to improve government transparency and reinforce the co-creation of public value. The regional open government data policy would benefit from the following actions:
  - a. Identification of common areas and an indicative list of open government datasets to be prioritised (e.g. official statistics, national budget information, basic geospatial information).
  - b. Development of a PALOP-TL open government data platform that is integrated into the digital government PALOP-TL portal, and which serves to aggregate information from existing national portals (public institution portals or central open government portals).

- 3.3 Consider the adoption of a regional initiative for free and open source software to optimise software investments and promote the shared use of public applications and software and competitive software development. To achieve this a common platform for sharing software and source code data could be developed and integrated in the Digital Government PALOP-TL portal. It could also provide access to a catalogue of software (and implementation service provides) for reuse or adoption.
- 3.4 Develop and adopt a regional PALOP-TL agreement for the common recognition of digital identity certificates, and promote the use of digital authentication and digital signatures across national digital services. Given their advanced capabilities in these areas, Angola, Cabo Verde and Mozambique could assume a leading role.
- 3.5 Develop a common digital service delivery standard for the PALOP-TL region. The standard could build on existing lessons and experience to aggregate general principles to support digital public services delivery in PALOP-TL countries (e.g. understand user needs, agile and user-driven processes, make source code open, measure performance). The adoption and application of the common standard should be voluntary.

#### **4. Integrated CPLP trading and cross-border services**

- 4.1 Develop a CPLP single trading window. This initiative would be led by the customs services of each PALOP-TL country and build on the existing efforts of the Timor-Leste Government to integrate trading procedures between CPLP countries and to link CPLP with the Association of Southeast Asian Nations (ASEAN) trading region. Next steps for implementation could include:
    - a. Support for the completion of Timor-Leste's single window pilot project or initiative
    - a. Adoption of a single window development protocol for replication and roll-out among PALOP-TL countries.
    - b. Systems audit of existing customs PALOP-TL customs services to gauge the viability of adopting the single window protocol.
    - c. Development of an action plan with attendant project resources to support implementation and roll-out.
  - 4.2 Develop a cross-border services initiative to promote social and economic integration and citizen mobility across the PALOP-TL region. Building on the agreement and willingness expressed by the PALOP-TL countries during the annual e-Governance Conferences of the Portuguese-Speaking Countries Community (CPLP), the initiative could include the following steps:
    - b. Analysis, identification and prioritisation of key cross border services (e.g. company creation, issuance of birth certificates and passports).
    - c. Pilot new and ongoing initiatives to test potential systems linkages and end-user demand.
    - d. Develop and pilot test PALOP-TL services counters to enable the delivery of public services from PALOP-TL countries in existing physical one-stop shops (e.g. SIAP in Angola, Citizen's Home in Cabo Verde). Through assisted access, citizens and companies could apply for digital services provided in another country of the region (e.g. an Angolan citizen living in Cabo Verde could require his birth certificate or his criminal record in one of the citizen's homes).
-

## *Glossary of terms*

**Accountability:** A key concept in modern management theory and practice. It means that managers are held responsible for carrying out a defined set of duties or tasks, and for conforming with rules and standards applicable to their posts. Thus, the person or body to which the manager must report and answer for his or her actions are made explicit and he or she may be rewarded for good performance or suffer the consequences of inadequate performance. A manager of an organisational unit may also be held accountable for the actions of subordinate staff (OECD Glossary of Statistical Terms).

**Administration of government:** Government’s capacity to make and co-ordinate policy at the centre of government; to manage government records; and to communicate both across the administration and with the population. Administration of Government (also referred to as “Co-ordination at the Centre of Government”) is considered as one of the upstream executive functions essential and preliminary to the delivery of public services by the administration (UNDP and World Bank, 2017).

**Artificial intelligence:** An advanced computer programming language aimed at enabling computers to emulate the human mode of reasoning (OECD Glossary of Statistical Terms).

**Base registries:** Base registry refers to a trusted authentic source of information under the control of an appointed public administration or organisation appointed by government. According to the European Interoperability Framework, base registries are: “reliable sources of basic information on items such as persons, companies, vehicles, licences, buildings, locations and roads” and “authentic and authoritative and form, separately or in combination, the cornerstone of public services” (European Interoperability Framework).

**Blockchain:** A blockchain is a tamper-proof distributed database that is capable of storing any type of data, including financial transactions (OECD Digital Economy Outlook 2017).

**Business case methodology/value proposition assessment model:** A tool to assess and present the value proposition of an ICT project. It assesses value for money by comparing project costs and benefits. The use of business cases is considered essential, for example in IT project management frameworks, such as Prince2.

**Central digital government policy/strategy (or national policy/strategy):** Refers to the directives/principles that central governments define (e.g. through executive directive or decree, as a result of other overarching central policies, such as digital government, public sector modernisation or open government) to incorporate ICT as a priority for the public administration.

**Cloud computing:** Cloud computing is a model for enabling ubiquitous, convenient on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications, and services). It relies on the sharing of resources to achieve coherence and economies of scale, similar to a utility (like the electricity grid) over a network. At the foundation of cloud computing is the broader concept of converged infrastructure and shared services.

**Core government functions:** Minimum set of executive functions, which are essential and preliminary to the delivery of digital or non-digital public services. For countries in the process of transition and development, the trajectory of institutional and administrative development begins with the need to build or re-establish core administrative capacities in key domains of government, both upstream in the areas of public financial management, administration of government, management of the civil service and local government (where applicable); but also downstream, in the delivery of public services (UNDP and World Bank, 2017).

**Data:** A value or set of values representing a specific concept or concepts. Data become “information” when analysed and possibly combined with other data in order to extract meaning and to provide context.

**Data-driven public sector:** A government that is capable of anticipating societal trends, understands users’ needs, and transforms the design, delivery and monitoring of public policies and services through the management and use of data.

**Digital by default (front office aspect):** The decision of making the use of online platforms and channels either mandatory or the clearly preferred means for how citizens and businesses interact with the public sector (e.g. access to public services).

**Digital by design (back office aspect):** The extent to which a government embeds the full potential of digital technologies right from the start when formulating policies and designing services. For example, digitalising internal processes (“zero paper administration”) with the intent to rethink, re-engineer and simplify them and make service delivery efficient, inclusive and sustainable for citizens and businesses regardless of the channel used to interact with the public authorities (OECD Concept Note “Digital Government Framework”).

**Digital complementary skills:** Initiatives implemented to encourage a digital mindset in the public workforce in order to increase awareness regarding the opportunities, benefits and challenges of the digital transformation of the public sector (OECD, forthcoming).

**Digital divide:** Economic and social inequality regarding access to, use of, or impact of ICT. The divide within countries may refer to inequalities between individuals, households, businesses, or geographic areas, usually at different socio-economic levels or other demographic categories. The divide between differing countries or regions of the world is referred to as the global digital divide.

**Digital government:** The use of digital technologies as an integrated part of government modernisation strategies to create public value. It relies on a digital government ecosystem comprised of government actors, non-governmental organisations, businesses, citizens’ associations and individuals that support the production of and access to data, services and content through interaction with the government (OECD Recommendation on Digital Government Strategies).

**Digital professional skills:** Initiatives to attract and maintain specialists in digital technologies in the public sector (e.g. managers of IT systems, programmers, web designers, data analysts) (OECD, forthcoming).

**Digital user skills:** Initiatives allowing the public workforce to properly use digital technologies and take the full benefit of digital productivity tools (e.g. email management, text processor, spreadsheets and databases) (OECD, forthcoming).

**E-Government:** The use by governments of ICT, and particularly the Internet, as a tool to achieve better government (OECD Recommendation on Digital Government Strategies).

**Free and open software (FOSS):** A software that can be classified as both free software and open-source software. That is, anyone is freely licensed to use, copy, study, and change the software in any way, and the source code is openly shared so that people are encouraged to voluntarily improve its design.

**Fully transactional digital services:** Service delivered through a set of seamless and fully digital or automated transactions that take place between people and public sector organisations, without the use of paper.

**Government effectiveness:** The government effectiveness indicator captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (World Bank's Worldwide Governance Indicators).

**ICT projects:** A project is a temporary undertaking that is created for the purpose of delivering one or more specified products. An ICT project is a project in which the use of ICT plays a significant part in the delivery of the specified products.

**Institutional capacity:** The functioning of public administrations; the co-ordination of stakeholders; strategy, vision and innovation; and the security of transactions and contracts, or the degree to which policy stability and bargains over time can be enforced (Institutional Profile Database, 2016).

**Local governance:** From a core government function perspective, the immediate objective of local governance is to: extend the legitimacy of the state through the outreach and engagement of central government via the sub-national administration; build confidence in the public administration by enabling resource distribution at the local level; signal efforts by the state to respond to pressing service delivery needs, in particular through the engagement of communities in local recovery processes; and address drivers of insecurity or conflict by expanding the engagement of the population in processes for decision making and the distribution of public goods (UNDP and World Bank, 2017). It also refers to the mission assigned to local governments, which are "institutional units whose fiscal, legislative and executive authority extends over the smallest geographical areas distinguished for administrative and political purposes" (OECD, Glossary of Statistical Terms).

**Management of civil service:** The basic governmental capacity to define and administer regulations and provide public services in a manner that accommodates the need to achieve the longer-term goal of an accountable, efficient and affordable public service (also referred to as "Government Employment and Public Administration"). Under this upstream executive function, special attention is given to public employment, compensation and the wage bill, to human resource management, and to training/capacity building within the civil service. Regarding legal provisions, the challenge is to ensure that the principles of professionalism, independence, integrity, political impartiality, transparency, and service to the public are enshrined into the legal framework, although implemented gradually (UNDP and World Bank, 2017).

**Political stability:** The functioning of political institutions, the influential organisations in public life, and the participation of the populations, or the extent to which diverse social,

economic, and political viewpoints are incorporated into decision making (Institutional Profile Database, 2016).

**Proactive delivery of services:** An approach in which public sector organisations make the first move to serve or help the user customers. For example, organisations going out of their way to identify potential needs, rights and/or obligations in relation to public services, and then addressing the need or delivering the service before users need to ask for help/or for the service.

**Proprietary software:** Non-free computer software for which the software's publisher or another person retains intellectual property rights - usually copyright of the source code, but sometimes patent rights.

**Public financial management:** The legal and administrative systems and procedures put in place to permit government ministries and agencies to conduct their activities. These ensure the use of public funds meets defined standards of probity and regularity. These activities include the raising of revenue, the management and control of public expenditure and financial accounting and reporting, and, in some cases, asset management (OECD Glossary of Statistical Terms).

**Social media:** A group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content (Kaplan and Haenlein, 2010).

**Strategy:** A document (e.g. policy document, white paper) that defines the vision, objectives, goals, main actors, main actions and system of monitoring (indicators) for digital government (e.g. to guide and steer actions and decisions on investments, sustaining co-ordination and alignment with overall objectives and avoiding overlaps).

**Transparency:** An environment in which the objectives of policy, its legal, institutional, and economic framework, policy decisions and their rationale, data and information related to monetary and financial policies, and the terms of agencies' accountability, are provided to the public in a comprehensible, accessible, and timely manner (OECD Glossary of Statistical Terms).

**Use and reuse (of data):** The terms use and re-use are adopted interchangeably. Use of data corresponds to a process through which raw data is transformed into a different output. This includes charts, tables, data visualisation tools, phone applications, as well as the reference of data in newspaper articles, academic papers and other types of publications. Use of data includes both personal use of data and commercial use of data.

**User:** A user of digital government services and (open) government data is understood as a citizen, a legal entity, such as businesses or non-governmental organisations, or a civil servant within the public sector itself. It is most commonly understood as a citizen or business.

**User-driven or citizen-driven public sector:** A government that adopts approaches and takes actions to let citizens and businesses determine and communicate their own needs and drive the design of policies and public services.

## **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, Lithuania, 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.

# Promoting the Digital Transformation of African Portuguese-Speaking Countries and Timor-Leste

The public sectors of African Portuguese-speaking countries and Timor-Leste (PALOP-TL) have made significant progress in mobilising digital technologies to promote internal efficiency, simplify government procedures and improve the delivery of public services. Nevertheless, fully harnessing these technologies to improve growth, opportunities for income and employment, and public service delivery requires a more profound shift from efficiency-driven to citizen-driven approaches. This cross-country review of the digital transformation of the public sectors in Angola, Cabo Verde, Guinea-Bissau, Mozambique, Sao Tome and Principe and Timor-Leste reviews progress towards digital government and suggests strategies for enabling more effective, collaborative and sustainable digital government policies and approaches in PALOP-TL countries. These recommendations address three main areas: digital solutions for the delivery of core government functions, foundations for a digital government transformation, and digital services for citizens and businesses.

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

For more information, visit [www.oecd.org/going-digital](http://www.oecd.org/going-digital)

#GoingDigital



Consult this publication on line at <https://doi.org/10.1787/9789264307131-en>.

This work is published on the OECD iLibrary, which gathers all OECD books, periodicals and statistical databases. Visit [www.oecd-ilibrary.org](http://www.oecd-ilibrary.org) for more information.



**CAMÕES**  
COOPERAÇÃO  
PORTUGUESA  
**PORTUGAL**  
MINISTÉRIO DOS NEGÓCIOS ESTRANGEIROS



**PASP**  
PALOP-TL

Projeto de Apoio à Melhoria  
da Qualidade e Proximidade  
dos Serviços Públicos  
dos PALOP e Timor-Leste

