GOVERNMENT OF THE GAMBIA

Ministry of Communications and Digital Economy

DIGITAL READINESS ASSESSMENT REPORT 2023

Prepared by

e-Governance Academy (eGA) of Estonia

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1 Executive summary

Based on the expert evaluation conducted under the "**African Union – European Union Digital for Development (AU-EU D4D) Hub**" project by the e-Governance Academy (eGA) together with the Estonian Association of Information Technology and Telecommunications, the **digital readiness of The Gambia is at the developing level**. A strong political will and specific initiatives in the Gambia have helped the digital transformation and helped the country to a developing level. In eGA's digital maturity assessment methodology is at the second level of digital maturity (emerging, developing, established and advanced).

To fully benefit from digitalisation, the goal for The Gambia should be to reach the established level of digital maturity in as many pillars of digitalisation as possible. All digital readiness pillars assessed while conducting this assessment are equally important and interconnected, meaning one cannot be fully developed without others.

The digital readiness on the developing level is a good leverage for The Gambia to take the next step and gain and keep the stability needed for further digitalisation gains. Based on the information gathered by the eGA experts, there is a general understanding in the Gambia of the importance of digital transformation and the government, including the Cabinet, shows **a solid commitment to prioritising digitalisation in the national development agenda** and is equally **willing to use both local resources and support from development partners to fund digitalisation projects and or programs**. As such, to better coordinate resource mobilisation and digitalisation endeavours.

The Ministry of Communications and Digital Economy (MOCDE) and the Public Utilities Regulatory Authority PURA, through The Gambian Computer Emergency Response Team (gmCSIRT), have been leading in cybersecurity management, including providing the requisite cybersecurity policy, legal & regulatory frameworks and conducting public awareness-raising programs. **The field of cybersecurity is interconnected with many other areas of digitalisation** (from data protection to providing e-services), so any advancements have a wider impact on digitalisation in The Gambia.

Another field of potential for digitalisation is that **the Gambia issues a high-level physical identity for the citizens**. The Gambian government shows strong support for achieving initiatives related to integrating existing national identity systems and minting digital identity. As a result, the national ID card penetration in society is increasing, and it also indicates the possibility of investing in and promoting digital identity and digital public services. Therefore, electronic identity is a strong potential area for growth in digitalisation and benefitting the Gambian people and could be enhanced further with additional Mobile-ID and software-based digital ID solutions.

In addition, **the start-up community is rising**, more so in the digital domain, and several cross-border and local incubators and accelerators boost innovation growth. Furthermore, the government emphasises digital innovation & entrepreneurship to enforce more actions to succeed in partnership with the private sector. **All these examples show the strong will of the Gambian government, including the Cabinet, to support digitalisation to benefit the Gambian people and the economy.**

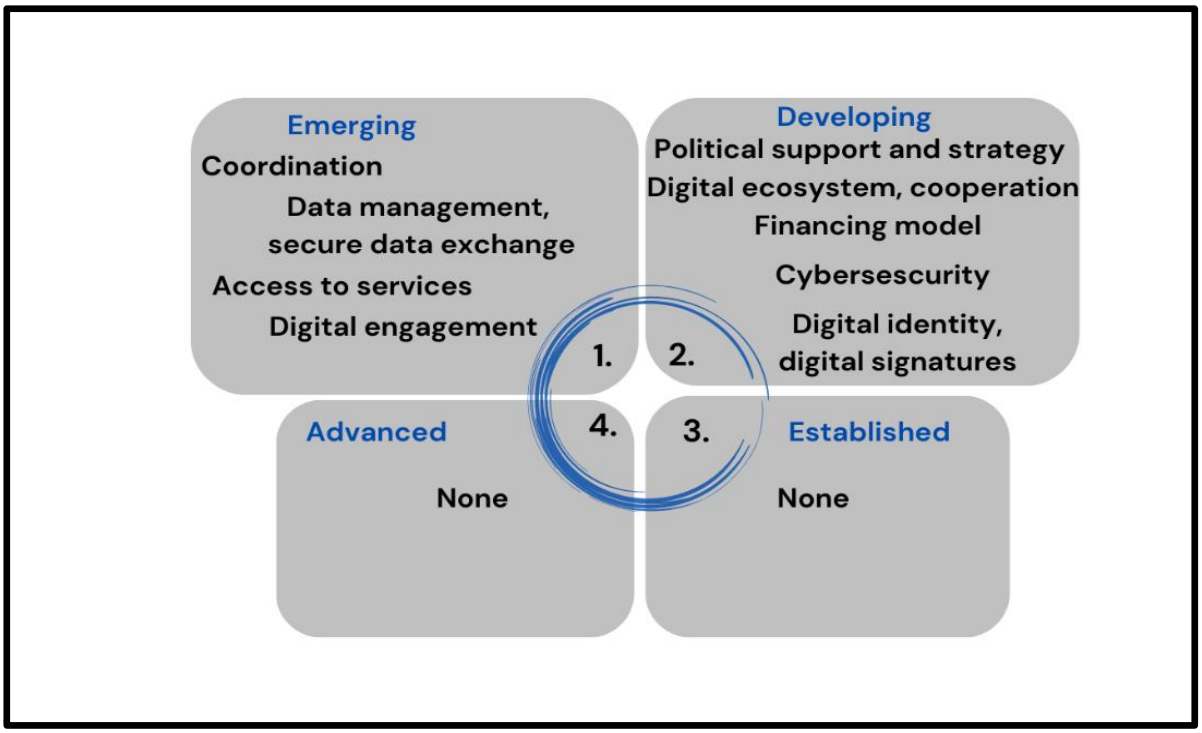


Figure 1 Overview of The Gambian digital readiness assessment

2 Introduction

The e-Governance Academy (eGA), with the Estonian Association of Information Technology and Telecommunications, created the Digital Readiness Assessment Report under the "**African Union – European Union Digital for Development (AU-EU D4D) Hub" project**[1]. The project aims to close the digital divide, leverage digital innovations for inclusive, sustainable development in Africa, and strengthen African national and regional partners' capability to identify and implement priority actions in response to digitalisation challenges.

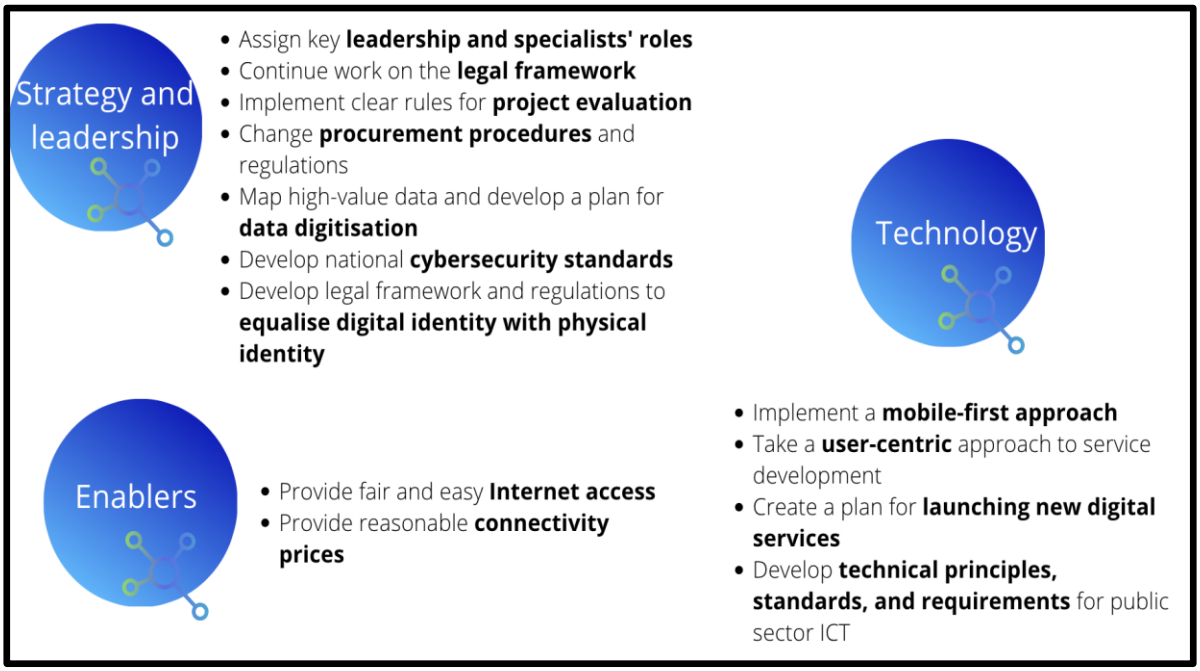
The report's goal was to assess the digital readiness of The Gambia's public sector to help understand the current digital situation and define the succeeding goals to unlock the country's digital potential. It includes an evaluation of the current digital readiness of the country, identification of strengths and areas of improvement, and suggestions for further activities in a wide variety of digital government focus areas, from political support and strategy to cyber security.

During the assessment, eGA's experts interviewed 17 stakeholders, analysed existing documents, and made recommendations based on the best practices used in Estonia and European Union and the wider world. The Gambia's Digital Readiness Assessment Report is one of the four-task assignments conducted by eGA, including drafting the National Digital Economy Master Plan, Digital Addressing Policy & Regulatory Framework, and a new Open Data Policy & Regulatory Framework.

The report consists of eight parts: an executive summary (1), an introduction of the project together with key recommendations (2), the definition of digital governance and focus areas relevant to The Gambia (3), an explanation of the methodology used (4), a general overview of The Gambia and its digital development (5), a description and assessment of nine pillars of digital governance with their sub-topics (6), conclusion (7), and annexes (8).

[1] AU-EU D4D website: https://d4dhub.eu/au-eu-project

Key recommendations for The Gambia's digital potential are the following:



1. **Assign key leadership and specialists' roles** necessary for digital transformation across the government to support the long-term growth of already existing digitalisation potential. Specifically:
   1.1. Assign legal framework development roles within the Ministry of Communications and Digital Economy and the Ministry of Justice. Additional roles could be created for drafting within The Gambia Public Utilities Regulatory Authority (PURA) or other relevant agencies. This helps to ensure the capacity to develop the most critical legal frameworks that do not exist today.
   1.2. Assign Chief Information Officers, CISOs and CDOs to every ministry to oversee ICT investments, processes, and policies. This helps to build a foundation that ICT is approached from a strategic perspective within each ministry.
2. **Continue to develop a legal framework** that supports digital transformation and outlines the norms. These include digital identity, reporting, document exchange, open data, data management, data exchange, interoperability, cybersecurity, and developing and providing digital public services.
3. **Implement clear rules for project evaluation** based on the created value and promised results and assign the Ministry of Communications and Digital Economy to provide their assessment to the Ministry of Finance on all ICT-related financing. All ICT development projects must create a better environment and value for their users. It is, therefore, crucial to identify the project's benefits while planning it and measuring its achievement after implementation. These rules will bring the digitalisation project to the next level with proper monitoring by the Ministry of Communications and Digital Economy to improve the direction of financing to critical areas and avoid duplicative investments. ICT-related funding should be evaluated based on the current situation, the outcome of the project, its impact, project cost, timeline, milestones, and maintenance. A precise project evaluation enhances the focus of the funding on critical areas and avoids duplicative investments.
4. **Change procurement procedures and regulations by making them more**

transparent and accessible. Through the development of the central government procurement register, the information about all procurements should be published and accessed via one entry point. Eliminating blocking factors, such as extensive revenue, ensures local companies can participate in upcoming procurements. Giving SMEs and other companies easy access to procurements promotes innovation and knowledge transfer, grows the business sector, and improves the digital ecosystem. The procurement system also helps to raise general awareness of government-initiated projects and builds trust towards the government.

5. **Implement a mobile first approach for the full potential of mobile data usage**. The usage of mobile phones is high enough for developing new services and updating existing ones. A mobile first has a compelling opportunity for digitalisation in The Gambia.
6. Ensure a **user-centric approach** to public sector service development, including implementing:
   6.1. A voice bot system for self-service for the end-user services due to the low literacy rate and accessibility issues.
   6.2. A simplified interface and voice-based services are the best opportunities for maximum adoption across all communities.
   6.3. A government Service Portal (so-called One-Stop-Shop).
7. **Work out an actionable and measurable plan towards launching new public digital services**, from planning and design to deployment and continuous improvement. In fine detail, this would include services level agreements, prioritising thee-services long-list and key performance indicators. For instance:
   7.1. Develop digital services for vehicle registration and company registration.
   7.2. Establish an e-cabinet system on a governmental level that accelerates the digital economy development. Develop public registries, digital certificates, public-key encryption management such as public key infrastructure (PKI) and a unified information exchange layer adopted to power the e-cabinet and efficient cooperation across institutions and other stakeholders.
   7.3. Develop and finalise the national digital payment gateway systems by the Central Bank as soon as possible to enable digital trade and digital finance to flourish across the country and cross-border. Create a working group led by the Central Bank to discuss and develop relevant services with the private sector to support digital financial services development and promote the launching of new digital financial services solutions.
   7.4. Develop (or procure the development of) core government information systems such as fleet management system, workflow management system, human resource management system, health management system etc. The order of development and exact functionalities of such systems need further analysis.
8. **Map high-value data and develop a plan for data digitisation**, sharing and re-use (this also includes open data). Such planning should be carried out across the government and be led by the Ministry of Communications and Digital Economy. Based on the mapping, a pilot project for a secure data exchange solution between government agencies could be implemented, the needs of data users identified and financing for key areas allocated. Analysis of the pilot project results enables to plan for a wide-scale implementation across the government and enforces its use to increase trust and transparency of data exchange, for instance, using the open-source solution like X-Road Data Exchange Layer or any other similar data exchange solution.
9. **Develop technical principles, standards, and requirements for public sector ICT**, including:

9.1. Developing government cross-functional requirements for public sector IT developments outlining principles, standards, and requirements.

9.2. Establishing an interoperability catalogue to see what technical components and data exist in the public sector to enable transparency, re-usability, and interoperability.

9.3. Ensuring maintenance, including costs and technical support, and continuous development of new information systems.

9.4. Developing a unified approach to cloud and data centre management.

10. **Develop national cybersecurity standards for the public and private sectors mandatory to follow**. Implementation of requirements and standards requires proper planning and capacity building. Common standards help avoid reinventing the wheel by all government institutions by creating their own requirements. Having common standards also saves resources. In addition, common standards allow the development of unified auditing procedures and rules, which again help to save time and money. Standards for the private sector can be divided into recommendations to improve digital hygiene and general resilience and mandatory requirements for critical infrastructure operators.

11. **Change procurement procedures and regulations by making them more transparent.** This includes the development of the central government procurement register, so information about all procurements should be published and accessed via one entry point. Eliminating blocking factors, such as extensive revenue, ensures local companies can participate in upcoming procurements and establish partnerships between local companies and international companies, in the case of International Competitive Bidding (ICB). Giving SMEs and other companies easy access to procurements promotes innovation and knowledge transfer, ensures business sector growth, and improves the digital ecosystem. A transparent procurement system also helps to raise general awareness of government-initiated projects and builds trust towards the government.

12. **Develop legal framework and regulations to equalise digital identity with physical identity nationally, enabling the launch of Mobile ID and software-based digital ID solutions.** There is an excellent opportunity to launch that can fulfil the needs of mobile first users nationwide with its low-cost implementation and favourable user experience in cooperation with cellular network operators.

13. **Ensure fair and easy access to the internet for the general Gambian population.** To achieve this, it is recommended to do the following:

13.1. Invest in a second international subsea fibre optic cable and a Tier3/Tier4 data centre to facilitate stable digital connectivity and information services. An additional Tier3/Tier4 datacentre could be considered after the initial investment is completed to facilitate further business continuity within the local infrastructure for more demanding clients wishing to operate in.

13.2. Establish rules and reassess taxation policy to provide reasonable prices for all end users. For example, the current high tax towards network operators results in higher prices to nationwide consumers; hence, MNO tax is transferred to end users with higher retail prices.

13.3. Better utilise mobile and electricity data to plan direct investments to ensure internet connectivity to communities with limited access.

13.4. Establish a framework for digital-energy nexus and cross-sectoral infrastructure sharing between the ICT and the energy sector so that by facilitating the last mile internet connectivity, the ICT sector can leverage on existing energy infrastructure such as poles, dugs, trenches etc., to lay fibre and facilitate cheaper and reliable internet connectivity to homes.

3 Definition of digital governance

Digital governance is a combination of roles, processes, standards, and tools focusing on how countries can use information and communication technologies to reduce inefficiency, eliminate duplication of resources, minimise effort and cost, achieve policy goals and ensure readiness to foster inclusive and sustainable socio-economic growth and development. Digital governance covers three key areas helping to unlock digitalisation: vision and leadership, technology, and digital skills.

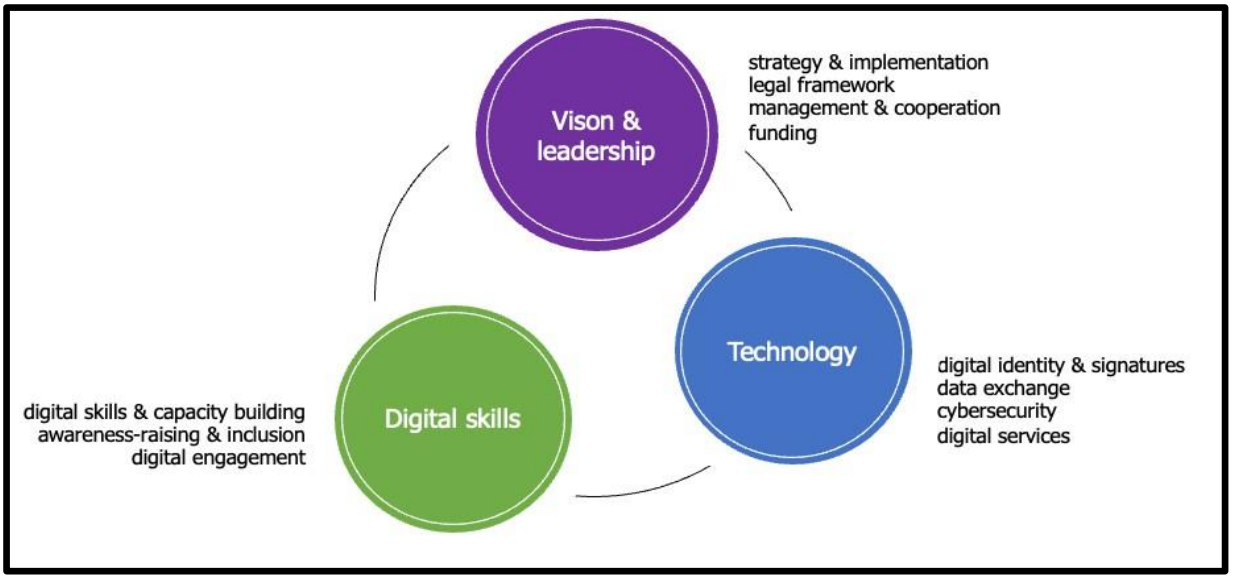


Figure 2 Keys helping to unlock overall digitalisation

This report looks more at specific topics of digital governance relevant to The Gambia context that is divided into nine pillars: political support and strategy (1), coordination (2), financing model (3), cybersecurity (4), data management and secure data exchange, including data protection (5), digital identity and digital signatures (6), access to services (7), digital engagement (8) and digital ecosystem & cooperation (9). Each includes subtopics, which offer more detailed explanations for the context of the readiness phase. Developing them further will benefit a general digital transformation of the country. Assessment of digital skills was outside the project's scope because a separate feasibility study on digital literacy in The Gambia has been conducted.

4 Digital readiness assessment methodology

eGA has developed a qualitative methodology to assess digital readiness by describing the topic on a maturity scale of an emerging, developing, established and advanced level. These level descriptions are general in nature and not country specific. These general-level descriptions for all subtopics are in full in Annex I and help to place a country on the maturity level. By comparing these digital readiness descriptions to the current situation in The Gambia, the experts can evaluate the digital readiness level for each sub-topic and an overall readiness level assessment for the topic. These are described in the "Current situation" for each topic. In addition, for ease of reading, the appropriate readiness level applicable in The Gambia is included in the texts describing specific focus areas and a situation overview that has influenced the evaluation.

Example: digital readiness level description from emerging to advanced level for the legal framework. Level descriptions are from the eGA methodology and are not country-specific but help to give an overall description of levels of digitalisation in the specific field.

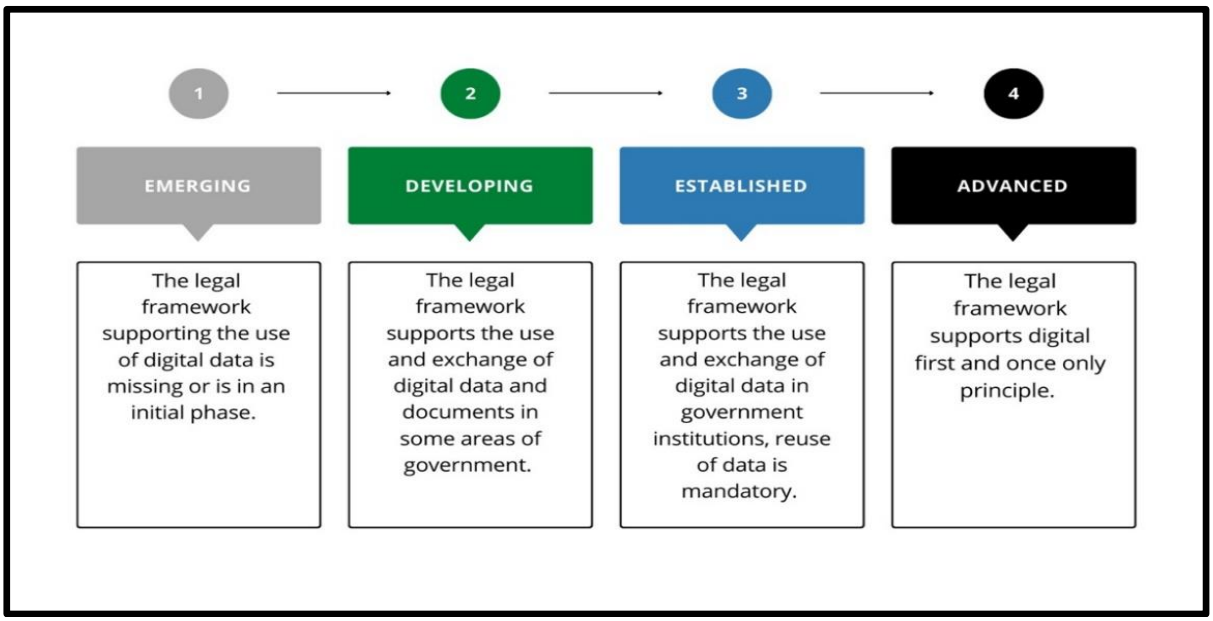


Figure 3 Digital readiness level description of a legal framework on a scale from emerging to advanced.

The structure of each topic is the following:

1. Topic title
2. Topic overview – a general description of a topic relevant to digitalisation.
3. Topic evaluation – the level assigned to The Gambia based on the expert's evaluation of the current situation concerning the general maturity levels described in the methodology.
4. Subtopic I – maturity level X (Emerging/Developing/Established/Advanced) – evaluation for The Gambia based on an expert's evaluation of the current situation in the Gambia about the general maturity levels described in the methodology.
5. Level description – general description from the eGA methodology.
6. Current situation – description of the situation in The Gambia.
7. Strengths of the topic – description of achievements.
8. Next steps for the topic – expert's recommendations.

4.1 Pillars of digital readiness

The digital readiness model to assess digital readiness is divided into nine pillars that are agreed upon and included in this assessment and are essential for digital governance in The Gambia. Each of these pillars needs to be addressed to unlock the full potential of digitalisation:

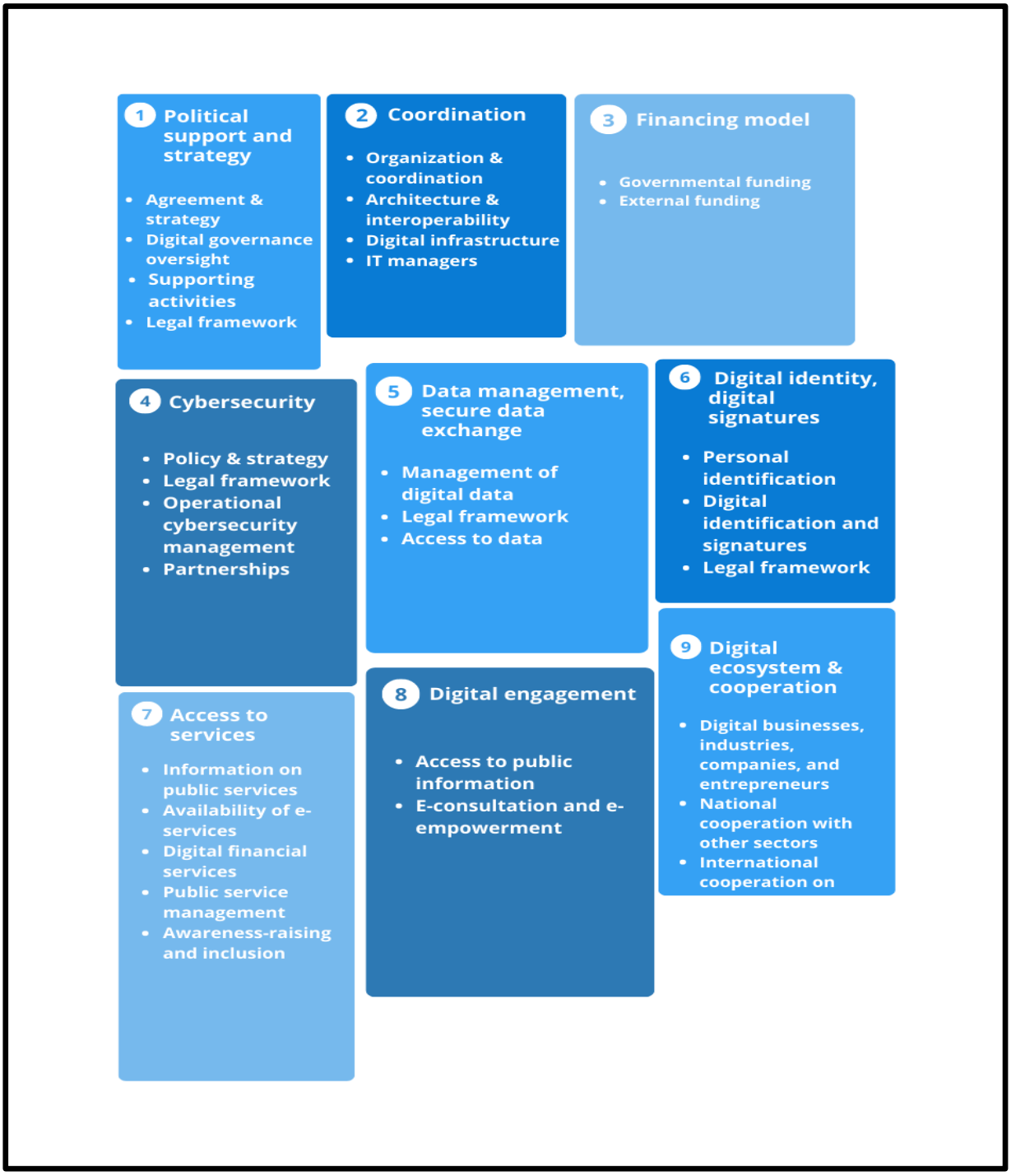


Figure 4 Pillars of digital governance.

4.2 Methodology – maturity levels

eGA's digital readiness assessment model uses the following maturity development levels that are part of the general methodology and can be applied in different scenarios in different countries:

1. **Emerging**: Most digital governance activities are in the inception phase. Although some progress can be noted, areas of significant importance are still under development.
2. **Developing**: Organisations implement digital governance activities based on the level of their internal capacities. There is no clear strategy or coordination in place. The activities are mostly sporadic, and processes are reactive in nature.
3. **Established**: A strategic framework for digital governance is in place, and a division of roles exists. Conditions are created to benefit from standardisation, coordination and the shared use of digital components and resources, but there are shortcomings when it comes to implementation.
4. **Advanced:** Digital governance is a natural part of the operation of the public sector and society. The public and private sectors jointly use digital components to reach the country's strategic objectives. Processes are controlled and measured, with effective stakeholder involvement and a good balance between the top-down and bottom-up approaches.

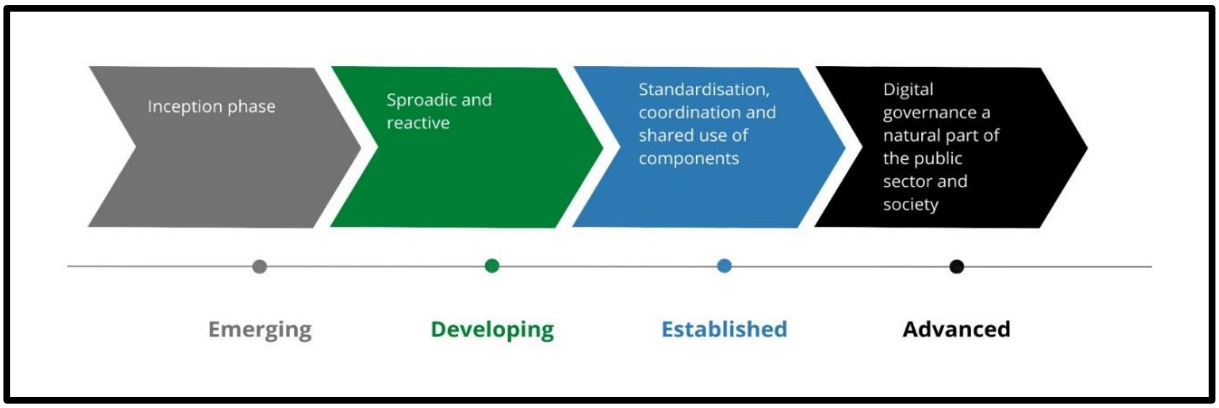


Figure 5 Digital readiness levels

In the following chapters, these are compared to the situation in Gambia.

Digital maturity and readiness to take digital maturity to the next level changes over time, and all stages of development are usually passed. Therefore, to fully benefit from digitalisation, the government should focus on achieving the established level. Therefore, recommendations about how to take the digitalisation of the public sector to the next level follow the same development ladder as presented above.

Based on the digital maturity scale, the experts have evaluated each sub-topics digital readiness level (emerging, developing, established or advanced). Then, the experts gave an overall digital readiness level assessment at the end of each topic paragraph. When viewed together, it provides an overview of digital readiness levels in The Gambia that is valuable input when analysing the country's digital transformation landscape.

In addition, strengths and next steps for the specific digital governance pillar are also outlined. This evaluation by the experts is qualitative, not done quantitively based on the mathematical average of each sub-topic development level. The qualitative approach ensures that knowledge and expertise are considered in the evaluation. The experts have also considered when giving the overall score in which direction the development of digital readiness is leaning in the topic area and provides more value to any sub-topics with a higher priority in the context of digital governance.

Furthermore, a workshop was organised to validate the assessments made by the experts. During this session, various stakeholders were presented with the experts' findings, they had time to work through the document and their feedback was collected. Subsequently, this feedback was taken into consideration while developing the final document.

The digital readiness assessment process in The Gambia included the following steps:

Figure 6 The Gambia's digital readiness assessment process

The assessment was qualitative and was based on the subjective evaluation of eGA experts based on the information given to them by the stakeholders and available via different digital sources.

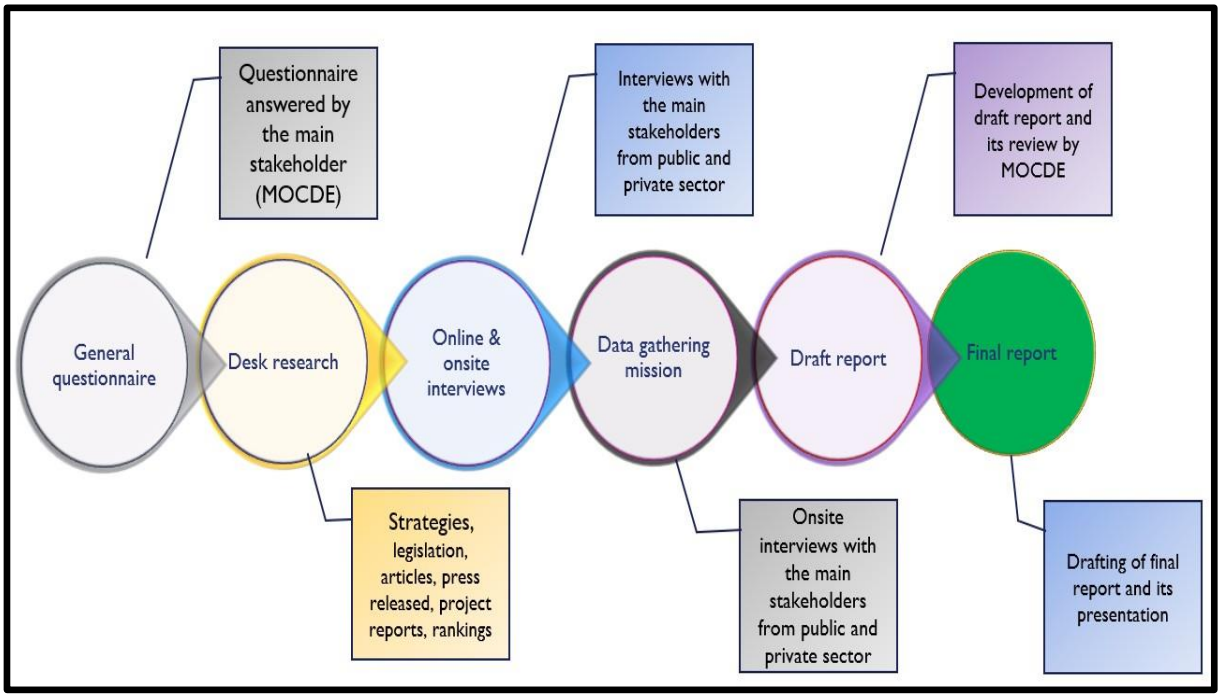


Figure 6 Digital readiness assessment process

5 Overview of The Gambia

5.1 General information

The Republic of The Gambia is a small country in West Africa. It is surrounded by Senegal, except approx. 60-km coastline. Its capital is Banjul, located in the west. Tourism and construction are the main economic sectors growing services and industry, enabling more than 8000 people out of extreme poverty after the Covid-19 period. The Gambian's economy is expected to decelerate in 2022 due to high commodity and fertiliser prices, supply disruptions due to the war in Ukraine and Covid-19 restrictions, and ongoing floods. Inflation reached 12,3 per cent (year-on-year) in July 2022 – its highest level in the last three decades.2 More statistical indicators can be found in table 1. The Gambia is a Republican State with a Capitalist Economic System. The President is both head of the state and head of the government; there is a multi-party system. The government is a democratic exercising executive power, while legislative power is vested in the government and parliament.

Table 1 Statistical indicators about The Gambia

Indicator	Value
Population	approx. 2,5 million
Total area	10,689 square kilometres
Urban/peri-urban inhabitation	More than 50%
GDP per capita in 2021[3]	835,6 USD
Annual growth of GDP per capita in 2021[4]	5,6%
Unemployment rate in 2021[5]	11,2%
Access to electricity (of the population)[6]	62%
Use of the Internet (of the population)[7]	37%
Individuals owning mobile phone (of the population)[8]	81%
Literacy rate[9]	51%
Active mobile subscribers in 2021[10] (2020)[11]	2,7 million (2,637,032)

[2] World Bank Data Platform: https://www.worldbank.org/en/country/gambia/overview
[3] World Bank Data Platform: https://data.worldbank.org/country/gambia-the?view=chart
[4] Word Bank Data Platform https://data.worldbank.org/country/GM
[5] Word Bank Data Platform https://data.worldbank.org/country/GM
[6] Word Bank Data Platform https://data.worldbank.org/country/GM
[7] Word Bank Data Platform https://data.worldbank.org/country/GM
[8] 2020-2021 The Gambia SDGs Monitoring Survey https://www.gbosdata.org/downloads/the-202021-gambia-sdgs-survey
[9] GBOS' s Communication Statistics Annual Report https://www.gbosdata.org/downloads-file/communication-statistics-summary-report-2021
[10] GBOS' s Communication Statistics Annual Report https://www.gbosdata.org/downloads-file/communication-statistics-summary-report-2021
[11] PURA 2020 Annual Report and Financial Statement (https://pura.gm/wp-content/uploads/2022/07/PURA-ANNUAL-REPORT-2020.pdf)

Active Internet subscriptions in 2020[12]	1,833,452

Status of ICT access, usage and exploitation in The Gambia was analysed in 2007 under the Scan-ICT project measuring access, usage and exploitation of ICT. The study was coordinated by The Department of State for Finance and Economic Affairs, The Department of State for Communications and Information and Technology and The Gambia Bureau of Statistics.[13]

5.2 Status of digital development

In general, the overall digital transformation of The Gambia is in the developing phase. Organisations implement digital governance activities based on the level of their internal capacities, and central coordination has just started. However, the activities are still sporadic, and processes are usually reactive in nature. The government's operating and development model is based primarily on external funding and the use of local resources. So, the mainly used project-based management approach focuses on single projects. Such an approach prevents the emergence of smart service owners and customers, as described during the interviews, and supported by information in some national strategy documents.

Implementation of single initiatives has been time-consuming due to minimum efforts on change management. The development of the document management system illustrates the situation quite well – the system is being used in four government institutions but is not fully implemented, integrated and or mainstreamed, and document exchange is still duplicated on paper. There are also cases where information systems are managed by the African Development Bank and other regional entities because of regional initiatives while The Gambian public institutions act as users.

The legal framework supporting digital transformation needs development or adjustment since it directly influences the public and private sectors. For example, data protection and exchange policies exist, but regulation must still be included through an overarching independent regulator.

The creation of prerequisites for the transition to the digital economy started in 2009 with the development of digital identity. However, the synergy between different institutions and provided services needs to be included; digital services are relatively non-existent and provided in isolated environments.

The IT infrastructure view is the most comprehensively managed, but not all prerequisites have been created to further develop infrastructure and data centres. The basic infrastructure is kept in the hands of the government. This resulted in inefficiency and high cost of internet, more so mobile data, which is unreasonable and justifiable. There have been discussions about privatising the telecommunication market, but decisions have yet to be made.

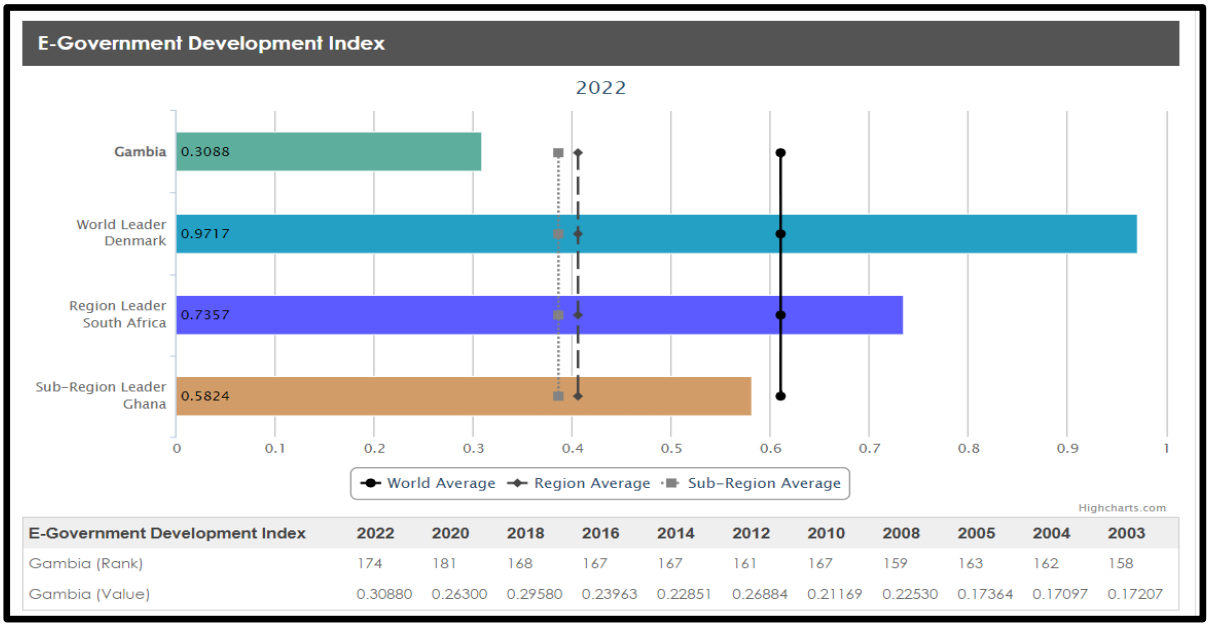
The interoperability platform and its development plans are missing due to insufficient budget and external funding. The state budget focuses mainly on covering administrative costs, and the Digital Economy Masterplan supports external or donor funding but needs sustainability and long-term plans.

[12] PURA 2020 Annual Report and Financial Statement (https://pura.gm/wp-content/uploads/2022/07/PURA-ANNUAL-REPORT-2020.pdf)
[13] Communication Statistics Summary Report, 2007 (https://www.gbosdata.org/downloads-file/status-of-ict-access-usage-and-exploitation-in-the)

The development of digital skills of the public is addressed and can be praised. Improvement of higher education quality is also in focus through the Africa Centres of Excellence (ACE) Project and existing TVET (Technical and Vocational Education and Training) institutions, financed by the World Bank, educating talented and skilled professionals to meet human capital needs in science, technology, engineering, mathematics, health, and agriculture. On the other hand, additional investments are required to provide all university students with broadband internet, computers, and mobile devices to enable online learning to meet the private sector's expectations, including having the requisite and needed skilled workforce to sustain their businesses.

Creating the Ministry of Communications and Digital Economy (MOCDE), together with the National ICT Agency, is a step in the right direction. Growing into digital transformation leaders will take time, but it shows strong political will and initiative to start central coordination of digital transformation. MOCDE is eager to learn and implement other countries' best practices and start cooperation with the private sector to learn from them and use their ability to implement innovative solutions.

As illustrated in Figure 7, The Gambia ranked 174th out of 193 countries in the UN E-Government Development Index 2022[14], rising seven places following the prior survey conducted in 2020.



E-Government Development Index	2022	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Gambia (Rank)	174	181	168	167	167	161	167	159	163	162	158
Gambia (Value)	0.30880	0.26300	0.29580	0.23963	0.22851	0.26884	0.21169	0.22530	0.17364	0.17097	0.17207

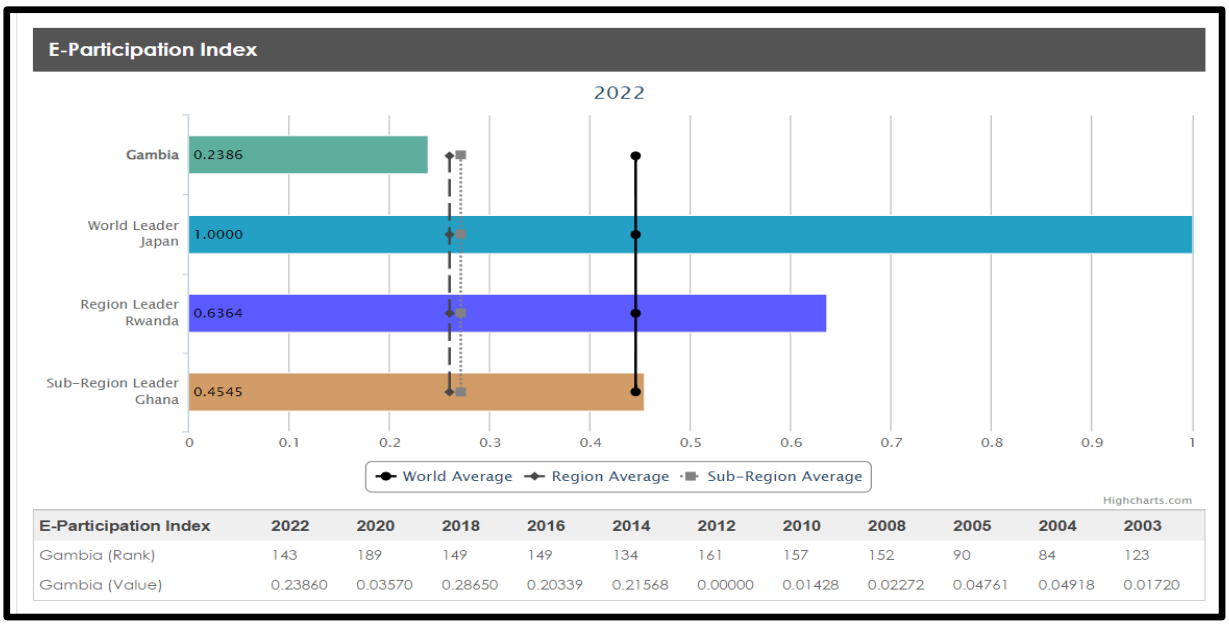
Figure 7 The Gambia in the UN E-Government Development Index 2022

Looking at the sub-components of the UN E-Government Development Index, The Gambia falls behind the region and sub-region average in the Online Service Index, reaching 14,55% of the total score. In contrast, the world average stands at 55,54%.

The Human Capital Index in 2022 is at 33,01%, which has stayed almost the same compared to 2020 (36,30%). That also falls behind the world and region average. In the Telecommunication Infrastructure Index, The Gambia demonstrates results below the world average, but it has increased its score by 6% compared to 2020 and is better than the region's average.

[14] UN E-Government Development Index 2022 https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/63-TheGambia

In the UN E-Participation Index, which measures the use of online services to facilitate the provision of information by governments to citizens, interaction with stakeholders, and engagement in decision-making processes, The Gambia was ranked 143rd in the world among 193 countries, as seen in Figure 8[15].



E-Participation Index	2022	2020	2018	2016	2014	2012	2010	2008	2005	2004	2003
Gambia (Rank)	143	189	149	149	134	161	157	152	90	84	123
Gambia (Value)	0.23860	0.03570	0.28650	0.20339	0.21568	0.00000	0.01428	0.02272	0.04761	0.04918	0.01720

Figure 8 The Gambia in the UN E-Participation Index 2022.

The Gambia ranks 102nd out of 180 countries in the Corruption Perceptions Index (CPI)[16] carried out by Transparency International, which is an index which ranks countries by their perceived levels of public sector corruption, in which The Gambia has a 37 out of 102, while the average world score is 43. ITU's Global Cybersecurity Index ranks The Gambia 107th with a score of 32.12, while regionally 20th.[17]

The comprehensive Feasibility Study on Digital Literacy in The Gambia[18] proposed a digital literacy program for The Gambia that would support more comprehensive strategies for e-government and digitalisation in The Gambia. The Education and Skills Development Division conducted the study and was sponsored by the African Development Bank. The study was published in May 2022. The report's proposed strategic actions for digital literacy form a strong starting point for developing a comprehensive digital literacy program for The Gambia. The proposed goal was to have 75% digital literacy amongst the Government workforce and 65% of the national workforce by 2024.

The Human Capital Development Strategy 2021-2024[19] emphasised the need for rapid upgrading of human capital and related resources in The Gambia to exploit the ICT revolution to the country's economic advantage and to use it to drive The Gambia on a path to becoming a knowledge-based economy. The strategy was commissioned by The Ministry of Information and Communication Infrastructure and published in October 2020. The aims of the strategy

[15] UN E-Participation Index https://publicadministration.un.org/egovkb/County-Information/id/63-TheGambia/dataYear/2022
[16] Corruption Perceptions Index 2021 https://www.transparency.org/en/countries/gambia
[17] ITU GCI Index 20202 https://www.itu.int/epublications/publication/D-STR-GCI.01-2021-HTM-E
[18] Feasibility Study on Digital Literacy in The Gambia https://unctad.org/system/files/non-official-document/CSTD2022-23_c04_CW_Gambia_en.pdf
[19] Human Capital Developmetn Strategy https://web.archive.org/web/20220705032139/https:/moici.gov.gm/downloads

line up with the wider goals of digitalisation in The Gambia and give a strong strategic government-level framework for more specific actions in the future.

In addition, a Strategy for Promoting Technology-enabled Education (TEE) & Science, Technology and Innovation (STI) 2021-2024[20], which is a pillar of the Information and Communication Technology for Development Policy Statement 2018-2028, has been drafted by the Ministry of Information and Communication Infrastructure (October 2020). The strategy focuses on two main areas: Technology enabled education (TEE) and science, technology and innovation (STI). The strategy notes that The Gambia faces significant challenges in technology-enabled education to see quantitative improvements, such as higher marks or grades and qualitative improvements, such as a more profound understanding and knowledge of ICT. The policy targets for TEE were, for example, to have a policy framework as a prerequisite for any TEE in the national curriculum. For STI, the policy targets focused on reviewing The Gambia's STI Policy and setting up a governance structure, followed by creating related frameworks.

Another pillar for the Information and Communication Technology for Development through ICTs 2021-2028 is the Strategy for Youth & Women development & Empowerment through ICTs 2021-2024. The strategy was also commissioned by the Ministry of Information and Communication Infrastructure (October 2020). The document aims to use ICT for women's political empowerment and leadership, economic and social empowerment, and protection. The purposes correspond with the broader mission to advance The Gambia's competitiveness and regional and international levels with the help of ICT.

Many of the issues and aims in the strategic documents related to ICT in the Gambia have been examined in more detail in the following chapters.

[20] Strategy for Promoting Technology-enabled Education (TEE) & Science, Technology and Innovation (STI) 2021-2024 https://unctad.org/system/files/non-official-document/CSTD2022-23_c04_CW_Gambia_en.pdf

6 Assessment of digital governance in The Gambia

6.1 Political support and strategy

Topic overview: Political support & strategy (agreement & strategy, digital governance oversight, supporting activities and legal framework) paves the way to the adoption and implementation of relevant policies and agendas.

Political will needs to be declared at the highest possible level, and it is vital to identify roles and responsibilities for coordination and implementation, encouraging public-private partnerships and public-public partnerships in the field and cooperation with academic institutions. In addition, the government and its leaders must understand that the digital agenda is not a free-standing topic but part of every country's policy, strategy, service, and industry. Finally, a legal framework must support, compel, and enforce MDAs in digital transformation and governance.

The overall digital maturity of political support and strategy in The Gambia is developing.

> ***Agreement & strategy – developing:***
> ***Level description: Defining general digital governance priority areas is in process and compiling a national digital transformation strategy is underway.***

Current situation: There is general agreement at the Cabinet level on the importance of digital transformation and its significance for The Gambia. The e-Government Strategy for 2021-2024[21] covers priority areas and outlines focus areas but needs to be more comprehensive. Thus, many areas required for systematic development are not fully covered, for example, data governance and management. Although the e-Government strategy exists, there needs to be more awareness of the strategic objectives and key initiatives among the public organisations. Strategy and action plans do not always have streamlined activities from the top-down and have room for improvement in vertical implementation through public institutions. IT is often-times considered separate from the business. Therefore, there needs to be alignment between the upper management and strategy executors.

An e-Government Strategy for 2021-2024 outlines some key activities, but there needs to be more clarity about who and when the activities would be carried out. In addition, no methodologies and processes are in place to evaluate, monitor and publish the strategy document. The strategy, in most parts, needs more apparent connection and harmonisation to the general objectives of The Gambian government. In addition, a more detailed action plan with realistic timelines is missing that would help to monitor the process of achieving the goals set in the strategy paper.

In addition, the Ministry of Information and Communications Infrastructure has been divided into two new standalone Ministries: The Ministry of Information and the Ministry of Communications and Digital Economy. That is strong proof that the government has taken the lead in the digitalisation of its economy and society. Moreover, the newly appointed Minister's experience gives confidence that progressive years are ahead of this Ministry.

21 The Gambia e-government strategy for 2021-2024 https://moici.gov.gm/sites/default/files/2021-05/E-GOVERNMENT%20STRATEGY.pdf

Strong strategic coordination and a defined action plan with clear key performance indicators are expected from the Ministry through the implementation of its ambitions. For example, internet connectivity was raised by all interviewees as one of the key priority areas, but a robust and focused action plan from the government to resolve that needed to be more evident. Additional government investments in the sector could remedy the issues mentioned; for example, additional investment in The Gambia Telecommunications Company Limited (Gamtel) to help expand the last mile connectivity. Such actions signal that priority areas receive support, and that the digital transformation of The Gambia is underway.

Digital governance oversight – developing:
Level description: The compilation of general digital governance implementation plans is in progress. Digital transformation process review is sporadic.

Current situation: Implementation plans are in place but only include some Ministries and Institutions. Digital transformation process review is sporadic. There is no publicly available information about the fulfilment process of the e-government strategy. The Ministry of Communications and Digital Economy oversees parts of the ICT investments, but a coordinating body is missing. Notably, there needs to be more reporting and monitoring of the outcomes and performance management. The current matrix management style in digital programs cannot break all the silos necessary. Consequently, investments and their returns are often unknown, leading some to think that investments have not been made productively. Therefore, the Ministry of Communications and Digital Economy, as a freshly appointed leading body for digitisation, should actively start aligning with the Ministry of Finance and Economic Affairs in all aspects of the management of digital investments and improve its vertical and downstream work processes across Ministerial structures.

The current process of creating a new Ministry - the Ministry of Public Service, Administrative Reforms and Policy - gives good prospects that digital governance oversight will improve significantly in the coming years. Notably, several risk and performance management training programmes are in place to increase public sector efficiency, indicating progress in continuous improvement activities.

The Gambia e-Government Strategy for 2021-2024[22] outlines the strategic areas and key priorities for 2021-2024. However, a legal framework supporting digital transformation itself is lacking. The formation of the Ministry of Communications and Digital Economy has been seen as firm commitment from the government to support digital transformation. As a result, there is strong support from the government. However, support and awareness within the public sector organisations are low, signalling a need to carry out extensive communication and training.

Financing is allocated for implementing the e-government strategy, but more is needed for the transformation. Currently, maintenance costs to support long-term development are not covered. Therefore, an in-depth ICT financing evaluation and prioritisation process are required. It would help to evaluate whether the investments contribute to the objectives outlined within the digital government strategy and avoid duplicative investments/costs.

22 The Gambia e-government strategy for 2021-2024https://moici.gov.gm/sites/default/files/2021-05/E-GOVERNMENT STRATEGY.pdf

Supporting activities – developing:
Level description: The compilation of digital governance communication plans is in progress.

Current situation: With the newly established Ministry of Communications and Digital Economy, overall communication and cooperation between the relevant stakeholders have significantly improved. The Head of State has assigned clear objectives and tasks with some existing strategies in place to guide the new Ministry. The clear mandate of the Ministry and its goals are well-understood by supporting ministries. However, there still needs to be more general knowledge of the strategic, measurable objectives and action plan agenda both within the public and private sectors and amongst the NGOs. Lack of communication is most visible among NGOs, who consider the Ministry of Finance and Economic Affairs as their key partner. However, expectations are high for the newly formed Ministry. Private sector communication has improved during the last year; for example, the retreat was pointed out as a significant step. However, both the private sector and NGOs feel that the ways for them to contribute to policy making and regulation development are scarce. Citizens and NGOs inclusion in policymaking is still not at a satisfactory level. While various committees exist, there is a limited number of stakeholders involved. Thus, more significant involvement and communication are expected.

Legal framework – emerging:
Level description: The legal framework supporting digital governance transformation is missing or is in the initial phase: interoperability framework, government core registers (e.g., business, civil, land, tax), e-commerce, data and data protection, identity, digital signature, documents, data exchange, connectivity, telecommunications, etc.

Current situation: Some legal frameworks exist (e.g., the Access to Information Act), but it needs to be improved in most areas. For example, there is no regulation supporting digital transformation. Certain policies have been implemented, for instance, Data Protection and Privacy Policy, but without any legal framework, i.e., the Data Protection Act. Although a data protection bill has been formulated[23], it has yet to be tabled to Cabinet and to National Assembly for it to be a law, and there is currently no independent authority acting as an oversight in the country.

In addition, no legal frameworks cover interoperability, government core registers, identity and digital signature, and data exchange. The lack of legal frameworks, especially related to data protection, identity, digital signature, data exchange and open data, was highlighted as critical to normal operations. Public and private sector companies are reluctant to take risks without legal frameworks. Such a lack of legal framework could hinder development in potentially significant areas, such as e-commerce, fintech, etc. For example, it was pointed out that there is currently no fintech policy, which could negatively affect small businesses and their operations. The private sector must learn what is allowed and the minimum operation requirements. It was also highlighted that legal frameworks and policies should be technology neutral. For example, cybercrimes cannot be prosecuted due to insufficient legislative measures for obtaining online evidence. However, a cybercrime bill was formulated in 2019, yet to be tabled to Cabinet and the National Assembly for it to be a Law.[24] Therefore, the

[23] Draft Data Protection Bill (https://gmcsirt.gm/wp-content/uploads/2021/12/Data-Protection-and-Privacy-Policy-and-Strategy-August-2019-Final.pdf)
[24] Cybercrime Bill 2019 (https://gmcsirt.gm/wp-content/uploads/2021/12/DRAFT-CYBER-CRIME-BILL-2019-.pdf)

initiative has clearly been taken and the Government of The Gambia is committed to improving the legal and institutional framework, as publicly reaffirmed by the Minister for Justice and Attorney General of The Gambia.

6.1.1 Strengths of the agreement & strategy

The Cabinet is strongly committed to prioritising digitalisation, and some financing has been provided. There is a general understanding of the importance of digital transformation. The newly formed Ministry of Communications and Digital Economy is mandated to lead policy development. The ministry has initiated the review of the Information and Communications (ICT) Act to introduce major legal and regulatory framework reforms to match the progressive external technological environment where the Republic of The Gambia needs to stay competitive.

6.1.2 Next steps to improve digital maturity of political support & strategy.

1. Assign legal framework development roles within the Ministry of Communications and Digital Economy and the Ministry of Justice. Additional roles could be created for drafting within PURA or other relevant agencies. This would ensure the capacity to develop the most critical legal frameworks that do not exist today.
2. Continue to develop a legal framework that supports digital transformation and outlines the norms. These include digital ID, reporting, document exchange, open data, data management, data exchange, interoperability, cybersecurity, and digital public services. This would help both the public and the private sector know the operation requirements and what is accepted. In addition, cross-governmental legal framework development and approval processes should be standardised, and the same approach should be implemented in all the previously mentioned areas.
3. Assign the Ministry of Communications and Digital Economy to provide their evaluation and recommendations to the Ministry of Finance on all ICT-related financing. The Gambia Information and Communication Technology Agency (GICTA) could assist Ministry of Communications and Digital Economy in the evaluation. ICT-related financing should be evaluated based on the current situation, outcomes, impact, costs, and adherence to regulations. This would improve the direction of funding to critical areas, avoid duplicative investments, ensure adherence to requirements, and avoid unreasonable projects.
4. Promote cooperation and forms of collaboration with the private sector to involve them more, ensure public-private cooperation and signal the importance of their involvement.
5. Expand the experts involved in developing the e-government strategy and action plans.
6. Establish a single information point for publishing information regarding digital government and e-government strategy development. Keep the information up to date.
7. Develop and carry out a communication plan to raise awareness of the importance of digital transformation and provide relevant training. This helps to raise awareness and support for activities outlined in the strategy.

6.2 Coordination

Topic overview: Coordination (organisation & coordination, architecture & interoperability, IT managers, digital infrastructure) help create effective and functional digital services, including international and cross-organizational services relevant to migration and identity management.

The digital maturity of coordination in The Gambia is emerging.

> ***Organization & coordination – developing:***
> ***Description of level: An organisation or person is formally designated to oversee the general digital governance development in the country; power and competencies of digital governance coordination are mandated by legislation.***

Current situation: The newly formed Ministry of Communications and Digital Economy has the mandate to lead the development and policymaking of ICT within The Gambia. The formation of the new ministry is a clear message from the government on the importance of digital transformation. However, there needs to be more ICT capacity and understanding of digital transformation within the ministries and organisations. Many fear that digital transformation creates job insecurities, and there are trust issues with implementing IT. Thus, change management is vital for a systematic approach to digital transformation. This would improve the understanding of how technology supports organisational goals and processes and changes how government organisations operate.

The recent establishment of The National ICT Agency, which is under development and being staffed, is another good progress towards more organised and capable digital development resources working towards the same goal[25]. In addition, newly established leadership under the Ministry of Communications and Digital Economy has set an open dialogue and policymaking with the public and private sectors to tackle the challenges of digitising the nation. Some of the priority areas include reforms in the legal and regulatory framework, the introduction of a Digital Economy Master Plan, development of digital payment systems, gateways, e-government systems, and platforms, to name a few. Some of these sounds broad, but the political will and restructuring of public institutions prove that a very positive shift has occurred.

> *Architecture & interoperability – emerging:*
> *Description of level: The digital government architecture and interoperability framework have not been defined or are in the initial phase.*

Current situation: The current state of national IT architecture & interoperability is at an emerging level where necessary planning processes have been started amongst relevant ministries. There is currently no secure data exchange layer for government data exchange, government cross-functional requirements, interoperability catalogue and other systems, rules, and processes to ensure transparency and interoperability of government technology stack, tools, components, and databases. This lack of overview and existing centralised solutions creates increased costs for the maintenance and development of new solutions.

[25] Gambia Information and Communication Technology Agency Act, 2019 (https://web.archive.org/web/20220630155953/https://moici.gov.gm/sites/default/files/2021-05/GICTA%20ACT%202019.pdf)

There has not been a clear selection of which data systems or interoperability architecture the country will choose to implement. The actions to date can be described as an assessment and selection process. According to the interviewees, different opportunities are being evaluated and soon to be selected. One of the private sector interviewees, an experienced Gambian private sector IT company, made a proposition to introduce Unified Exchange Platform with individual data servers, keyless signature infrastructure and with a certification authority. This proves that the local private sector is thinking closely about how to make progress in the country and could be involved in digitisation. Currently, the information exchanged across the public sector is on private sector platforms, such as Google Mail, e-mail, and WhatsApp messaging platform. An internal network solely for public sector use is in place, which, as claimed, helps to increase the public sector's operational continuity. The Ministry of Communications and Digital Economy's top goal is significantly increasing public sector operations' productivity and reliability.

Digital infrastructure – developing:
Description of level: 2G or 3G mobile network covers most of the country. Digital government architecture vision and interoperability framework are used in some government institutions. Some government institutions have their own/local data centres and rules for back-ups, basic infrastructure exists for secure data exists. Some government institutions use cloud-based solutions, but cloud policy or strategy is missing.

Current situation: The cellular network market is competitive, and the International Gateway is fully liberalised with four mobile network operators operating such as Qcell, Gamcell, Africell and Comium. Mobile phone operators have successfully launched 4G broadband in most of the country, and investment towards better mobile coverage is slowly increasing. While the coverage can be satisfactory, the operational cost is high due to high taxes implemented on operators, resulting in high consumer prices. In addition, high data connectivity is a significant obstacle to the growth of the internet economy.

In the fixed-line network market, there is only one significant operator, the state-operated Gamtel. This operator owns a national fibre optic backbone network and a national broadband network. However, the reach of the fixed line infrastructure across the country and internationally is under moderate development with several recent investments such as internet exchange points and high bandwidth submarine cable landing station ACE, which is part of Africa Coast to Europe infrastructure.

The investments towards infrastructure are costly, and additional finance sources have been actively researched. Google Cloud was one of the mentioned platforms widely used in addition to local personal computer drives. Government plans for Tier 3 data centres are underway.

There is an active working group with the World Bank/IFC to harness the financial investments from the diaspora of Gambian people. The state-owned information is stored in fragmented forms, and only a fraction of state-held information is in digital format. The documents are signed manually, often printed out, scanned, and printed out again, which is risky as important information might be lost forever, damaged, misused, costly, and unsustainable.

Cooperation of IT managers – developing:

Description of level: Most ministries have CIOs /IT managers in place whose job it is to oversee digital transformation within the organisation, but their roles and responsibilities are not always clear, and there is little cooperation between them.

Current situation: Chief Information Officers responsible for overseeing people, information systems, technologies, and processes, generally do not exist. The director of ICT in government manages all ICT staff in the Government structures. A matrix management style is in place, where ICT Officers (Staff) in different ministries report directly to the central director. In most ministries and agencies, there are IT managers or IT personnel. However, they are involved in the maintenance rather than actively included in the organisation's development. IT specialists cooperate in small ways, led by the Ministry of Communications and Digital Economy, but regular working groups involving all IT specialists do not exist. The private sector and NGOs are also not actively involved in working groups. Therefore, collaboration and knowledge sharing on existing issues, ongoing projects and best practices are insufficient among the practitioners.

Ministries across The Government of The Gambia have limited number of ICT specialised staff. Some have Senior ICT Officers and Principal ICT Officers. Almost all Ministries have ICT Officers and ICT Support Technicians. In contrast, only the Ministry of Communications and Digital Economy has a Director of ICT who heads the ICT Cadre of the Government plus a Deputy Director of ICT, Principal ICT Officers, Senior ICT Officers, and ICT Officers and other similar roles.

In the ICT Cadre under MoCDE, the ICT Officers and others are mainstreamed in all Ministry, and all of them are directly answerable to the Director of ICT under MoCDE except for a few rare cases, e.g., the Accountant General Department (Treasury) has their own Director of ICT and other ICT Officers or staff.

Additionally, departments, SOEs and most agencies mostly have IT managers.

6.2.1 Strengths of the coordination

The Ministry of Communications and Digital Economy, through its Directorate of ICT coordinates ICT-related activities within the government supported by a well-established and knowledgeable team of ICT specialists, including ICT specialists stationed at various Ministries, Departments and Agencies, responsible for coordinating ICT-related activities within their respective institutions and/or government. Additionally, the Ministry also do cooperate and collaborate with the Private Sector, NGOs, and CSOs on ICT-related matters. There is genuine interest by the ministry to involve other stakeholders. Likewise, the stakeholders have trust and high expectations towards the ministry to transform the ICT sector.

6.2.2 Next steps to improve digital maturity of coordination

1. Assign every ministry's Chief Information Officer (CIO) to oversee ICT investments, processes, and policies. This helps to build a foundation that IT is approached from a strategic perspective within each ministry.
2. Establish an e-cabinet system on a governmental level that would accelerate digital economy development. Develop public registries, digital certificates, public-key encryption management such as public key infrastructure (PKI) and a unified information exchange layer adopted to power the e-cabinet and efficient cooperation

across institutions and other stakeholders.

3. Invest in a second international subsea fibre optic cable and enhance the penetration of highspeed internet services in particularly in the hard-to-reach areas.
4. Invest in a Tier3/Tier4 data centre to facilitate stable services for the increasing need of data storage and general information services. An additional Tier3/Tier4 data centre could be considered after the first center is completed to facilitate further business continuity within the local infrastructure for more demanding clients wishing to operate in the Gambian economy.
5. There is an urgent need for a mobile switch which is to enable interpretability in mobile money sector. The lack of a mobile switch is hindering interoperability in that sector which is resulting to low usage. Interoperability promotes competition, consumer welfare, accessibility and financial inclusion. It will also lead to a better consumer experience and results in more usage of digital platforms.
6. There is a need for specialized capacity building for CIO's attached to the ministries that should also include the development and implementation of Gender balanced strategies.
7. Form an IT manager's working group and host regular meetings where different IT specialists introduce their work, projects, and outcomes. This helps to build a community and paves the way for better cooperation.
8. Develop or use open-source software and communicate this to IT specialists. For example, a government code repository utilising existing platforms, e.g., GitHub or GitLab, could be used.
9. There is a need for policies and regulation to make it mandatory for operators to be interoperable as also highlighted in the financial inclusion strategy and NDP.
10. Establish an interoperability catalogue to see what technical components and data exist in the public sector to enable transparency, re-usability, and interoperability. Develop government cross-functional requirements outlining principles, standards, and public sector IT development requirements.

6.3 Financing model

Topic overview: Financing model (governmental funding and external funding) guarantees effective and sustainable long-term use of funds to ensure the continuing development of digital governance. For every digital governance solution, the solution's total must be planned. Sufficient financing should be provided on a medium- to long-term basis, preferably through multi-annual budgeting. For example, in the state financial forecast, a separate budget line should be allocated for digital governance development. In addition, it is vital to ensure the financial model's transparency and accountability.

The overall digital maturity of the financing model in The Gambia is developing.

Governmental funding – developing:

Level description: A separate budget is designated for ICT and digital development at each ministry, and government agency, but it does not cover the whole dimension and it is far from enough. Budget transparency principles are defined, but ICT budget impact analysis is not fully implemented.

Current situation: Governmental funding, including developing, managing, and monitoring the state budget, is the responsibility of the Directorate of Budget of the Ministry of Finance and Economic Affairs. This also includes the production and publication of monthly budget performance reports.[26]

Budget planning principles are developed and enforced by the law. For example, the Public Finance Act (2014)[27] establishes principles for controlling public finances, the power, and duties of the legislative and executive institutions in the preparation, presentation, approval, execution, and reporting of the Government budget. In addition, Financial Regulations (2016)[28] specified implementation of the Public Finance Act and the Medium Term Economic Fiscal Framework 2020-2024 act as a policy instrument for the national budget, setting out how Government intends to achieve its policy objectives over the medium term through the budget. Furthermore, the Directorate of Budget of the Ministry of Finance and Economic Affairs is publishing Budget Expenditure Reports enabling everyone to access respective information. (https://mofea.gm/directorates/budget).

There is a separate budget for ICT covering ICT infrastructure, hardware, network, and facilities, for example, internet connection, printers, telecommunication, and computer costs. However, software, maintenance and development costs are missing. Instead, printing expenses were 42,711,000 GMD in 2022 (approx. 635,000 euros, in 2021, it was approx. 560,000 euros)[29]. In practice, the ICT budget is planned differently than actual needs, but stakeholders are informed of a specific amount that they can use to cover ICT costs. The donors fund new initiatives, but support and maintenance are often left aside or covered only for a year after the end of the project. The lack of maintenance costs results in a lack of continuous development of information systems, resulting in failure to meet the growing and changing needs of users and security requirements and, in the end, requires extensive investments for changes.

Estimates of revenue and expenditure of 2023[30] includes no expenditure related to data storage facilities and fees, and foresees costs for data collection, ICT infrastructure, hardware, network, and facilities as well as application software systems and licenses.

[26] Publications/reports of Ministry of Finance and Economic Affairs (https://www.mofea.gm/downloads/publications)
[27] The Public Finance Act (https://mofea.gm/pension-law#:~:text=AN%20ACT%20to%20provide%20for,authorities%20and%20public%20enterprises%20may)
[28] FINANCIAL REGULATIONS, 2016 (pdf)
[29] Approved state budget for 2022 (https://mofea.gm/downloads-file/2022-approved-budget)
[30] Esitmates of revenue and expenditure of 2023 (https://mofea.gm/downloads-file/2022-approved-budget)

External funding – established:

Level description: External funding for ICT and digital development across the government is coordinated by a designated authority/body, incl. procedures for applying, using, and monitoring its use.

Current situation: The Ministry of Finance and Economic Affairs also centrally coordinates external funding for ICT. All donor-funded projects are included in the costed National Development Plan, which aligns with sectorial strategies and plans. The ministry is mandated to monitor the use of donor funds and measure progress. The aid management platform is used to submit information about new projects, monitor their progress and record information about donors, projects and so on.
Ministries and development partners have access to the platform to enter related information. However, currently, the platform does not have a public interface enabling the stakeholders to follow the status of projects and to get more information.
International organisations working with the Government of The Gambia in digital transformation are the following: EU, USAID, AFDB, ChinaAid and WB. 2023 Budget Speech states "In a bid to increase targeted investments in the ICT sector significantly, the next phase of digital development advocacy and investment efforts will focus on attracting foreign direct investments and creating an environment for innovative financing arrangements amongst stakeholders to support ICT program implementation.".[31]

6.3.1 Strengths of the financing model

Coordination of donor funding monitoring has started, and a designated authority has been assigned. A functioning aid management platform is being used.

6.3.2 Next steps to improve the digital maturity of the financing model

1. Implement clear rules for project evaluation based on the created value and promised results. All ICT development projects must create a better environment and value for their users. Therefore, it is crucial to identify benefits while planning a project and to measure their achievement after implementation. These rules will bring digitalisation projects to the next level with proper monitoring by the Ministry of Communications and Digital Economy to improve the direction of financing to critical areas and avoid duplicative investments. In addition, thorough monitoring by the Ministry of Communications and Digital Economy would enhance the direction of funding to critically essential areas and avoids duplicative investments.
2. Make public procurement processes transparent and accessible to everyone. Developing a centrally coordinated and managed public procurement register provides the necessary transparency and enables all stakeholders to participate in procurements.
3. Develop a long-term ICT budget planning strategy in line with the National Development Plan defining digitalisation priorities. Budget planning enables better implementation of digitalisation strategies from the decision makers' point of view and ensures and encourages stakeholders to make long-term plans. It also allows changing budget planning practices considering stakeholders' actual needs.

[31] 2023 BUDGET SPEECH https://mofea.gm/directorates/budget

4. Include all ICT-related costs, including maintenance, licenses, and development costs, into the government budget and makes a clear distinction between costs for ICT maintenance and development. A budget including all costs ensures that information systems management is covered, and digital transformation is not set back due to a lack of licenses or necessary hardware. In addition, differentiation of maintenance costs ensures the sustainability of services and information systems to ensure sufficient resources.
5. Create a committee or working group where all key stakeholders and donors can coordinate ICT funding with MOCDE and MoFEA. Financial resources are always limited, so the government's ICT priorities must be agreed upon. The involvement of all stakeholders ensures that priorities are known and accepted and that the expenditures of all stakeholders are identified. Furthermore, justifying their development needs forces stakeholders to think better about benefits for the government, entrepreneurs, and citizens.
6. Create a platform or forum with development partners focusing on funding key digital transformation or ICT projects: This forum or platform will bring together all stakeholders within the country and all development partners with and outside the country annually to discuss Digital Transformation and ICT-related matters, more so strategizing and mobilising the need funds to implement key digital transformation and ICT projects.

6.4 Cybersecurity

Topic overview: Cybersecurity (policy & strategy, legal framework, operational management, international partnership) – ensures the protection of individuals, organisations, and the state in cyberspace. Adequate cybersecurity is crucial for the healthy functioning of digital society. The growing cyber threats in the world require public administrations to focus on security measures in digital governance. A coordinating institution must organise the development, monitoring and supervision of relevant information security rules and measures. A designated organisation in the form of a CERT/CIRT (computer emergency response team/computer incident response team) should be equipped with enough resources and authority to govern those rules and measures. Also, proper audit processes should be established, and MDAs and private sector should be aware of and use adequate ICT security measures. A cybersecurity framework and a system of ICT security measures should be established by legislation.

The overall digital maturity of cybersecurity in The Gambia is developing.

> ***Policy & strategy – developing:***
> ***Level description: A national cybersecurity strategy is adopted or approved, but an implementation plan is missing, under development or at the initial phase. Some cybersecurity requirements are set at the government institutions level. The list of CII operators exists.***

Current situation: The maturity of the Gambian cybersecurity capacity was assessed in the end of 2018 in collaboration with the World Bank, the Global Cyber Security Capacity Centre, and The Gambia the Ministry of Information and Communication Infrastructure (hereinafter *the Cybersecurity Report*).[32] The Cybersecurity Report focused on cybersecurity policy and strategy, cyberculture and society, cybersecurity education, training and skills, legal and regulatory frameworks, and on standards, organisations, and technologies using five stages of maturity, ranging from the start-up stage (ad hoc approach to capacity) to the dynamic stage (a strategic approach and the ability to adapt dynamically or to change in response to environmental considerations). Like the current assessment, the Cybersecurity Report identified the level of the Cybersecurity Policy and Strategy from start-up to formative stages of maturity.

The National Cybersecurity Strategy 2020-2024[33] together with a detailed implementation plan[34] have been approved by the Cabinet. gmCSIRT (https://gmcsirt.gm/) has been established, and MOCDE has also drafted a National Cybersecurity Committee (CS Advisory Board) formation paper to be officially launched in 2023, responsible for CS coordination. The Gambia Standard Bureau is responsible for developing standards in consultation with stakeholders, and ISO 27001 is adopted/nationalised and published as a national standard.

Cybersecurity strategy implementation requires significant resources considering the current budget. The 2023 budget does not include separate allocations for cybersecurity-related

[32] Cybersecurity Capacity Review: The Gambia (https://web.archive.org/web/20190728034353/http://pura.gm/wp-content/uploads/2019/07/CMM-report_Gambia_2019.pdf)
[33] National Cybersecurity Strategy 2020-2024 (https://gmcsirt.gm/wp-content/uploads/2021/12/FINAL-POST-Validation-CYBERSECURITY-POLICY-20201.pdf)
[34] National CS strategy action plan for 2020-2024 (https://gmcsirt.gm/wp-content/uploads/2021/12/20160628-Gambia-Cybersecurity-Action-Plan-V5-11.pdf)

activities, except for establishing positions of Director of Cybersecurity, Principal Cybersecurity and Cybersecurity Officers in MOCDE.
MOCDE has a global mandate to implement cybersecurity-related activities arising from the National Development Plan such as capacity building (law enforcement, cyber defence, awareness raising programs in local languages, hands-on training, implementation of gmCSIRT site and other measures).

Operational cybersecurity management – developing:
Level description: The CERT/CSIRT function is in place but focuses only on the government institutions; cooperation with the private sector and cybersecurity awareness raising for the public and private sector is missing or is conducted based on single initiatives.

Current situation: Operational management is the responsibility of gmCSIRT, which has a platform for reporting incidents. Currently, gmCSIRT mainly provides reactive help and consultation after incidents. Sufficient funding needs to be included to enable gmCSIRT to complete all tasks similar institutions usually do (e.g., auditing, certification, network monitoring, awareness raising etc.). There are two analysts managing incidents and consulting 21 ministries, including MoCDE.

A detailed list of critical infrastructure and information assets and operators exists in an Excel file, which is reviewed and updated quarterly by the gmCSIRT. Development of the critical infrastructure and information assets database is planned in cooperation with World Bank's Western African Regional Digital Integration Program under MoCDE.

Although work is mainly done in silos and some institutions have their requirements and policies, there are some good examples of cooperation initiatives:

1. **gmCSIRT is providing consultations and support to MDAs.**
2. **The Financial Intelligence Unit (FIU) under the Central Bank of The Gambia monitors and coordinates illicit financing, money laundering and financial terrorism in the country.**

Code analysis requirements and testing requirements are not managed on the general level. Recommended or mandatory standards or requirements for the private sector need to be included.

The Cybersecurity Report had similar findings by stating that the operational capacities are limited, and that law enforcement has limited capacities to investigate cyber-related crimes. Contrary to the report, law enforcement officers and prosecutors are now targeted through different training programmes within the capacity-building framework.

Legal framework – emerging:
Level description: The legal framework for cybersecurity (cybersecurity, cybercrime, etc.) is missing, outdated or inadequate.

Current situation: The legal framework for cybersecurity consists of two legal acts covering some aspects of cybersecurity: the Cybercrime bill (2022)[35], and the Information and

[35] Cybercrime bill (2019) https://gmcsirt.gm/wp-content/uploads/2021/12/DRAFT-CYBER-CRIME-BILL-2019-.pdf

Communications Act (2009)[36].The first has passed through public consultation and as of January 2022 is pending on parliamentary approval, but the Information and Communications Act covers only computer misuse and cybercrime but has left out general cybersecurity aspects. The act is currently under review by MOCDE together with international experts and gmCSIRT as a future implementor/supervisor of cybersecurity-related topics. The objective is to remove cybercrime provisions and prepare a standalone cybercrime bill.

The Cybersecurity Report delivered in April 2019 had the similar outcome - legal and regulatory capacities were identified to range between start-up and formative stages of maturity stating that the Information and Communications Act is not sufficient, issues related to cybercrimes need more focus etc. It specifically highlighted the lack of a cybercrime procedural law.

> ***International partnership – developing:***
> ***Level description: Participation in some regional or international networks and discussions in the field of cybersecurity exists, but the implementation of international good practice is missing.***

Current situation: The national CS strategy and action plan for 2020-2024 define a strategic goal to foster national and international partnerships to promote and enhance regional and international cooperation in protecting critical information infrastructure (CII). And to establish mechanisms for regional and international cooperation for incident response (1), to establish public and private partnership cooperation through a forum (2), to establish partnerships with national, regional and international partners and organisations for sharing information and best practices (3), increase capacity building (4) and law enforcement, to facilitate informal cooperation mechanisms within the law enforcement and criminal justice system, and between law enforcement and third parties, both domestically and cross-border (5).

Although the Cybersecurity Report 2019 stated that the cooperation on domestic and international level to combat cybercrimes is more informal, cooperation within the OCWAR-C project under the West African Response on Cybersecurity and Fight against Cybercrime initiative is a good example[37], supporting the establishment of the digital forensic lab at the Gambia Police Force Headquarters plus the existing structure on cybercrime and the police force to monitor better, coordinate and address cybercrime issues in the country.

There is also a plan to become a member of the AfricaCERT Network[38] and the FIRST Network[39] as well as other global networks, to improve incident management.

6.4.1 Strengths of the cybersecurity

MOCDE, together with gmCSIRT, has taken a leading role in cybersecurity management. Public awareness-raising programs and capacity-building of the enforcement sector are great examples. In addition, the management of the CII list and related stakeholders, together with the support of the private sector, shows readiness to improve the current situation and the possibility to grow once sufficient funds are allocated.

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[36] Information and Communications Act (2009) https://pura.gm/wp-content/uploads/2021/02/IC-Info-Comms-Act-2009.pdf
[37] West African Response on Cybersecurity and Fight against Cybercrime. https://www.ocwarc.eu/
38 AfricaCERG website. https://www.africacert.org/about-us/
39 FIRST Network website. https://www.first.org/

6.4.2 Next steps to improve digital maturity of cybersecurity

1. Develop national information security standards, baseline requirements, and procedures to be implemented by the government and the private sector, together with the monitoring system and implementation plan (including capacity building). Standards help to avoid the wheel's reinvention, harmonise, and reuse the procedures and requirements, and start implementation of requirements right away. Common standards allow the development of unified auditing procedures and rules, which again help to save time and money. Standards for the private sector can be divided into two: recommendations to improve digital hygiene and general resilience and mandatory requirements for critical infrastructure operators. The National ICT Agency could be responsible for developing such standards, baseline requirements and procedures.
2. Continue implementation of the national cybersecurity strategy by following concrete steps on how to achieve desired goals, specific tasks and timelines, policies related to cybersecurity by government authorities, setting up of an institutional cooperation framework, cybersecurity governance model, mandates, guidelines, and procedures, together with financial resources. This is an input for the following activities and projects for ministries and other government institutions to develop or adjust related internal procedures, including activities in the field of migration management.
3. Develop tools for supervising the implementation of the national cybersecurity strategy. These tools enable monitoring and test the readiness deal with cyber incidents. For example, a tool can be a website indicating all strategic tasks and their status (e.g., to do, in progress, done). In addition, there must be tools enabling for example, penetration tests for checking vulnerabilities, and recommendations to test the cyber hygiene of users. Finally, publish regular overviews of strategy implementation to show development and advancements in the area.
4. Develop cybersecurity recommendations for the private sector to follow. Area-specific requirements can always be developed, but entrepreneurs and citizens who lack detailed knowledge about cybersecurity should be able to use requirements and recommendations. In addition, such requirements make it possible to establish training and awareness-raising programs. The National ICT Agency could be responsible for this activity.
5. Create a committee to review National Cybersecurity Strategy and its implementation plan regularly. This committee could be created by MOCDE chaired by their Permanent Secretary.
6. Appoint CISOs and DPOs in all ministries, develop and conduct capacity building programmes for them and make it mandatory to have CISOs and DPOs in all ministries and create a networking platform. All public institutions must address technological and physical threats as they arise. CISO knows best what these threats are and how to avoid them. CISO cooperation mechanic is a good example of best international practice supporting knowledge and experience exchange. DPOs complement information security procedures with a special focus on data protection and related capacity building.
7. Review the current legal framework and update it based on the best practices. That includes drafting and adopting the National Cybersecurity Law providing requirements for the maintenance of network and information systems essential

for the functioning of society, including network and information systems of the public sector, liability, and supervision, as well as bases for the prevention and resolution of cyber incidents.

8. Mandate gmSCIRT to lead cybersecurity implementation in the country. A CERT has already been established. What could be needed is to ensure enough resources and powers.
9. Plan and organise regular awareness-raising campaigns for the public to improve cyber hygiene and general resilience and to help to decrease different cyber incidents.
10. Develop a competency model for public sector officials, conduct training programmes and create a process for yearly knowledge validation and competency development, monitoring, and training.
11. Develop a cyber lab for training and resilience building. This lab would include software and hardware to enable code analysis, look for vulnerabilities, and train cybersecurity experts in the public and private sectors.
12. Establish sectoral CIRTs or Cybersecurity Operating Centres in all sectors in the long term to have better coordination of cybersecurity issues in all sectors. Sectorial CERTs can be established first in the critical sectors, such as Critical Information Infrastructure Sectors, which have already been identified.

6.5 Data management, secure data exchange

Topic overview: Data management (data stewardship, metadata management, data quality management, data architecture, data storage and operations, master data management), secure data exchange (management of digital data, legal framework, access to data, secure data exchange) – ensures cross-border and cross-organisational cooperation that is necessary for data-driven public service delivery and decision-making. It promotes sharing and reuse of data. Data management ensures that data is treated as a strategic asset. Data management strategy (mapping the information assets and the level of digitalisation of data) is one of the enablers of digital governance.

The legal framework supports data management so that digital data can be exchanged, and electronic records kept. Digitalising public services means ministries and government agencies capture and process data in a machine-readable form. It is important for a citizen-centred and service-oriented state to ensure that different organisations and information systems can work together and exchange data according to principles like “digital first”, “privacy-by-design", and “once only”. Authorities need to take advantage of the data that the state has already collected from the citizens and businesses and not burden them by asking for the same information several times or have citizens request information from one public authority simply to hand it over to another public authority.

Hence, digital databases and secure data exchange between those parties are needed. Public authorities also need to share (open) data while considering ethical and cultural aspects to maximise the value of data. The modern digital governance model is a component-based service model, allowing the setting up of public services by reusing existing service components as much as possible. Public administrations should agree on a standard scheme to interconnect loosely coupled components and implement the necessary infrastructure.

The overall digital maturity of data management and secure data exchange in The Gambia is emerging.

Management of digital data – emerging:

Description of level: Information about governments´ databases and other information assets (registries, servers, services, etc) is missing. Data management (governance) processes/policies/strategies are missing at the government level, incl. data quality, data lifecycle, data management roles. Up to 25% of registers, databases and services are digitised. Organisations face serious data quality issues.

Current situation: A central registry to provide an overview of government-held data is currently missing. Consequently, organisations know about the data, data collection methods and data quality only through personal connections. Now, no data management processes/policies/strategies are in place for outlining requirements and rules for data collection, data quality assurance, metadata management, and data lifecycle management. Standards regarding metadata management and data quality assurance do not exist. As a result, information regarding data accuracy, validity, completeness, and consistency needs to be improved, especially for data reuse.

In some organisations, data quality assurance frameworks exist, but if they exist, data quality checks are set up as one-off projects. Thus, no systematic approach to data quality management exists. For example, according to The Gambia Bureau of Statistics, a data quality assurance framework and data quality assessment tool was developed as part of an external project. However, this has been applied to only some data. Similarly, PURA has a system to validate data, but little internal capacity exists within organisations to further develop these data quality assessment tools. There needs to be more competence and the possibility to adjust and develop tools according to the organisational needs. In most organisations, there is no software for data quality, data operations, data catalogues, data profiling, master and reference data management, and document and content management.

One of the key problems outlined by government organisations is lack of terminological uniformity and understanding of the data. Organisations need to understand what different data means or how it was collected. Various ministries, agencies and private sector organisations collect data without consulting the relevant agency, like The Gambia Bureau of Statistics and PURA. This makes it challenging to evaluate and monitor the data quality and use it for decision-making and service delivery.

For improving data accessibility and data quality, it is crucial to ensure data is digitised and accessible via electronic formats. However, only up to 25% of registers, databases, and services are currently digitised. Digitisation is a high priority within various ministries and government organisations, but the lack of information systems and technical knowledge has led to a firm reliance on it. Thus, digitisation of paper form data is a priority to reduce errors and increase the efficiency of data analysis and reuse. More mature organisations have implemented a hybrid form of data organisation, whereby the data is collected in a paper-based format and processed electronically, or electronic forms are developed for data input. Such an approach would be optimal until data digitisation is fully carried out.

Basic data literacy is lacking among public officials. Competencies related to data management are low. Roles responsible for data management often only exists at a minimal level. Data management is handled mainly by IT; business representatives have limited awareness and contribution to the area. Most public organisations don't have processes for data operations, documents and content, data sharing, data security, data quality, data architecture and

modelling, reference and master data management, open data, public information, and data lifecycle management. Similarly, there are no key performance indicators covering these areas.

Legal framework – emerging:
Description of level: The legal framework supporting the use of digital data is missing or is in an initial phase.

Current situation: Some legislation exists (Access to Information Act[40]) and specific policies have been implemented, for instance, Universal Access and Service Policy[41] and Data Protection and Privacy Policy and Strategy[42], but without any legal framework, i.e., a Data Protection Act. Although there is a Data Protection Bill, it is in the process of becoming law. Problems arise when trying to hold a party accountable without a legal framework and a Data Protection Commission. This creates concerns regarding the clarity of data ownership, how data exchange should occur, how data should be managed and how data should be made accessible to stakeholders. For instance, no legal framework exists to force data exchange or regulate open data publication. The existing Data Protection and Privacy action plan summarises the key actions to ensure privacy and personal data protection, including the adoption of national legislation, the establishment of the Gambian Data Protection Authority and capacity building.

Some regulations exist that could converge currently uncovered areas with existing regulations; for instance, the access to Information Act contains some rules on how to disclosure personal data but could also cover open data as part of the ongoing work between eGA and MoCDE open data policy framework is being developed, which can address open data-related issues. However, the lack of legal framework has also led to a situation where many consider their data private and are unwilling to share it even amongst government organisations. PURA could be one of the stakeholders involved in drafting the legislation, but it must undergo review by the ministry. It was also highlighted that the process takes much time. In some cases, policy drafts have been waiting for almost two years, mostly due to the lengthy review process by the Ministry of Justice. Thus, the capacity within the Ministry of Justice should be expanded, and a person responsible assigned for reviewing digitalisation/related policy.

Despite previously mentioned, the Access to Information Act sets ground rules for public institutions on how to disclosure information, implementation plans and reports proactively and makes it mandatory to assign Information Officers.

Some legal frameworks, for instance, Statistics Act, lack crucial requirements to ensure data inoperability (data collection, dissemination, data quality and metadata requirements) and should thus be reviewed.

[40] Access to Information Act, 2021 (https://web.archive.org/web/20220630160005/https://moici.gov.gm/sites/default/files/2022-02/ACCESS%20TO%20INFORMATION%20ACT%2C2021.pdf)
[41] Universal Access and Service Policy, 2020 (https://web.archive.org/web/20220630155949/https://moici.gov.gm/sites/default/files/2021-08/Universal%20Access%20%26%20Service%20Policy%202020.pdf)
[42] Data Protection and Privacy Policy and Strategy, 2019 (https://web.archive.org/web/20220630160002/https://moici.gov.gm/sites/default/files/2021-09/Data%20Protection%20and%20Privacy%20Policy%20and%20Strategy%20August%202019%20Final.pdf)

Access to data – developing:
Description of level: Up to 50% government registers are in digitalised and accessible via digital channels. Government institutions exchange digital data at some level, but it is not coordinated or standardised. Governments´ open data is available in some sectors and/or access is limited. Citizens have limited access to the data government holds about them.

Current situation: Much of the data is currently not digitised, although digitisation is underway in many areas. Data exchange is neither standardised, nor standardised solutions for secure data exchange exist. Data exchange is among the biggest problems for organisations within/and between the government, NGOs, and private sector.

There is a general understanding of the importance of secure data exchange, but currently, no solutions exist. People still print out the materials even if data is exchanged, as is the case for the document registry. Change management is required to become fully digital.

Open data is sporadically made accessible to the public, mainly by The Gambia Bureau of Statistics through their open data platform. However, other organisations highlighted that while open data could be made public, the shortcomings from the policy side (i.e., unclarity on who can access the data and what data should be publicly available) have prevented them from doing so. Consequently, open data in general, is not made publicly available.

Citizens do not have access to the information about what data the government holds, nor have access to the data. Organisations highlighted that private sector-held data, compared to the data held by government companies, is more readily accessible.

Access to data should be prioritised based on its importance. For example, data about water quality, cost of electricity, mobile positioning data and education data would be classified as priority data. Such data is valuable both for the public and for the private sector. For example, telecom companies are interested in electricity data to make more informed investment decisions, while electricity companies are interested in mobile positioning data to make more informed regional investments. Additionally, while public information is sometimes made publicly available, data in a machine-readable format is neither made available nor published, even though only a few technical impediments prevent doing so.

Secure data exchange – developing:
Description of level: Government organisations exchange data at some level, but it is not standardised.

Current situation: Data exchange is mostly manual and paper-based, but all stakeholders highlighted the importance of data exchange. Thus, there is a consensus and understanding of its significance, but a centralised solution has yet to exist. There is a strong demand to develop and implement a data exchange layer for government and government-to-business data exchange. Government-to-business data exchange is also mostly manual and paper-based, but digitalisation is underway in some organisations. For instance, PURA highlighted the importance of digitalisation of the process to ensure timely access to data and its quality. One possible way to currently digitise paper-based data is to use electronic forms. These ensure basic data quality and make data more comparable. Such an approach has been or is being implemented by various organisations, for instance, PURA and GBOS. APIs sometimes exist, but there needs to be more technical know-how and trust, for instance, on how to validate data re-users.

6.5.1 Strengths of the data management and secure data exchange

There is strong support for digitising data and improving government data exchange. The Gambia e-government strategy for 2021-2024 outlines the need for a unified solution for electronic data exchange, developing and setting standards, developing an e-Government interoperability framework, and broadening open data use. Although electronic data exchange has been highlighted as one area needing addressing, it needs concrete steps and a timeline to implement it. The Gambia e-government strategy for 2021-2024 states broadening open data use as a priority, but there need to be more initiatives covering the policy development. Instead, the initiatives address specific information systems and their digitalisation. As policies in these areas still need to be improved, developing open data, data exchange, and management policies is a high priority.

Across the government, there is strong support for digitalisation, and it is widely understood that digitalisation could increase efficiency and make the government more transparent. Many see the Ministry of Communications and Digital Economy as key in coordination and strategy planning. Some agencies have some capacity and show maturity in how they think and address data (PURA, GBOS). These organisations could be central to supporting other organisations within the data ecosystem. In addition, there is a clear understanding of the type of data that are critical to digitise.

6.5.2 Next steps to improve data management and secure data exchange

1. Prepare data management strategy and action plan to coordinate the area across the government and plan its development.
2. Pilot a secure data exchange solution between government agencies. Based on the results, plan for a wide-scale implementation across the government and enforce its use to increase trust and transparency of data exchange, for instance, using the open-source solution X-Road Data Exchange Layer.
3. Map high-value data and plan for its digitisation, sharing and re-use (this also includes open data); such planning should be carried out across the government and be led by the Ministry of Communications and Digital Economy. Allocate financing to enable better re-use of data based on the users' needs and government priorities.
4. Develop an open data policy to complement the Access to Information Act to ensure the publication of open data in a standardised way (metadata standard, publication of open data at government open data portal). Open data also improves governmental data-driven decision-making and processes.
5. Develop a data management policy, including metadata management, data quality assurance and data lifecycle management, to outline how data should be managed. In addition to policy, relevant guidelines should be developed.
6. Develop a metadata standard to define how government organisations must describe their data assets. This can be based on the international standard DCAT-AP, which has extensions for geodata and statistical data and is also suitable for open data.
7. Develop an open data portal and enforce its use across organisations to ensure all government and public undertakings published open data can be accessed from an easy-to-use single gateway by public institutions, businesses, NGOs, and citizens. For development, community-driven open-source solutions should be

considered to reduce maintenance and implementation costs, for instance, CKAN.

8. Establish a data management working group to support knowledge sharing, raise awareness and coordinate government activities.
9. Develop a data catalogue to improve search and accessibility of government-held data assets, including open data, for example, Amundsen.

6.6 Digital identity, digital signatures

Topic overview: Digital identity management (personal identification, digital identification and signatures, and legal framework) – provides better and safer services based on strong identification services and digital signatures. For digital governance services to be helpful for all types of governance tasks, it is essential that the users can identify themselves in a secure manner. This requires the development of a digital identity concept and tools. This can include a digital ID or Mobile-ID solutions, together with a digital signature. In addition, digital signatures must be secure enough to be recognised as evidence in court or similar situations.

The overall digital maturity of digital identity and digital signatures in The Gambia is developing.

Personal identification – developing:
Description of level: A register of persons is established. A unique persistent personal identifier mechanism (national ID number) created by the government is in place and is in use in some government registers.

Current situation: The Gambian national ID card is part of the biometric identity card program of The Economic Community of West African States, which uses similar standards as several United Nations and the European Union countries. The card allows a positive outlook for cross-border use and recognition in future services. The government's strategic choice is to lay the foundation for a secure and advanced digital nation with every citizen as part of it. The intention is to roll out the digital infrastructure required for digital services, but it will need further planning, coordination, and finance. The public key infrastructure (PKI) is not launched or is in development. The intention to achieve digital identity at the required level is not part of the agreed plans. Additional opportunities for digital identification systems such as mobile-ID or software-based mobile-ID are not yet been assessed by the government as potential alternatives to the current national ID card. Government registries and databases interoperability development would increase the public sector's productivity significantly and eventually enable once only other progressive digital society principles.

Digital identification and signatures – developing:
Description of level: Secure government issued digital identity is used in some public services. Government institutions promote use of digital identity in their sector, centralised approach is missing.

Current situation: Gambia Biometric Identification System (GAMBIS), the government institution in charge of issuing residential permits, driving licences and work permits, has successfully launched the national ID card in 2018. In the National Development Plan 2018-2021, The Gambia government marked its fifth objective to "make The Gambia a Digital Nation and create a modern information society". The government has already harnessed some advanced solutions on the market, such as the national digital identity card. But more

than the card is needed to be tied to online services to harness ICT's full potential and benefits in all sectors of the economy and society.

The biometric data collection of its citizens and temporary residents started in 2009. Today the national ID card has a photo, thumbprint, an encoded chip, name, residency location address, signature and national 11-digit identification number printed on the card. This document is mandatory always to be carried along and must be produced upon request by The Gambian immigration and nationality authorities and other law enforcement agencies. However, there are limited or no online services where this card can be used today and therefore, mainly serves as a physical identification card.

The application procedure has a systematic and secure approach, where citizens must provide a birth certificate, an old ID document or a copy of a passport, or a voter's card and have their biometrics information provided in the form of a fingerprint scan. The ID card standard is amongst the best in the world and is ready to be harnessed for developing The Gambian digital society and economy. However, there are limited or no online services where this card can be used today and therefore, mainly serves as a physical identification card. Nevertheless, the readiness to use services with this card is high and serves as an important building block of a secure digital framework of a high-level digital nation.

Digital identity and digital signatures are the cornerstones of digital services that the national government has recognised as a focal point in the enrolment of its upcoming public services in the country. However, using ICTs to provide services remains a challenge in The Gambia. The country's internet penetration rate stood at 51,0 per cent of the total population at the start of 2022, with internet users increasing by 2,9 per cent between 2021 and 2022. The development of e-government systems and platforms has been stated as a core structural project by the new Ministry of Communications and Digital Economy. As of data provided by GSMA Intelligence, there were 4,22 million cellular mobile connections in The Gambia in 2022. This indicates the high potential of mobile-based services to be successfully launched soon. This strongly indicates that digital services readiness in the mobile phone stream is high.

Legal framework – emerging:
Description of level: Legal framework supporting the issuance and use of digital identity and digital signature is missing.

Current situation: Developing e-government systems and platforms has been stated as a core structural project by the new Ministry of Communications and Digital Economy. Currently, there is a national ID card in place with all the necessary legal framework around it but it is not complemented by digital legalities. The required legal framework needs to be developed for using the ID card digitally, including for public digital services. The core digital elements such as digital identity, interoperability, digital databases, digital services portal, and applications are not yet underway but have been outlined as one of the objectives of the near-future activities. A comprehensive action plan with the necessary budget, human resources with required skillsets, key performance indicators, and oversight needs to be implemented to achieve these.

6.6.1 Strengths of digital identity and digital signatures

An essential pillar of the digital identity framework is completed in the form of a high-level physical identity card that can easily be enabled to access public digital services and act as a digital signature tool for citizens, public servants, and businesses. The current state of digital

identity implementation is in planning, and no evidence on strategic level documentation to fulfil that purpose is not yet in place. However, the conversations and interviews with relevant stakeholders in the government show strong support for achieving those initiatives and shed good light that this will be adopted as one of the digital services enablers. The national ID card penetration in society is increasing, and the aim is to achieve 100% usage as a physical document among all Gambian citizens. The current use of digital identity is tied to digital birth certificates. It was launched in 2022. Many mobile connections across the nation indicate good readiness for mobile phone-based digital identity.

6.6.2 Next steps for improving the digital maturity of digital identity, digital signatures

1. Enable digital identity by utilizing existing National ID card. Develop a legal framework and regulations to nationally equalise digital identity with physical identity. Digital identity should be linked to the ID given to the person at birth. The current National Cybersecurity Policy & Strategy 2020- 2024 and the Data Protection and Privacy Policy and Strategy are strategies that support such adaptation, but further legislative upgrades are necessary to make it happen. In addition, procedures in cyberspace need to be equal to procedures in the physical world to enable digitisation of the desired processes and services between government, citizens, and public servants.
2. In addition to digitally enabled National ID card it is recommended to launch a national-level Mobile ID in cooperation with cellular network operators alongside the digitally linked ID card. Mobile ID could have much faster adoption across society as the mobile phone subscriptions (ca 160% relative to the population number) is much larger than the computer user base (ca 20% relative to the population number). Adopting this additional digital identity system will enable the use of public services faster and on a much larger scale.
3. Launch a software-based digital ID solution next to the existing ID card and a potential Mobile ID. There is a good opportunity to launch that can fulfil the needs of mobile-first users nationwide with its low-cost implementation and favourable user experience.
4. Engage end users amongst citizens, public and private sector to promote the use of digital identity together with secure data exchange and interoperability across national IT systems, service portals and applications. Develop a pilot project proving the efficiency and security of digital identity in areas like company registration, taxation, and online banking.
5. One way to transition to the digital economy is for government institutions to make it mandatory for some services to be processed digitally in order to expurgate and phase out the analogue system at accelerated speeds.
6. Boost digital literacy through different campaigns to increase trust in digital services, digital identity, and digital data. Such campaign should start from elementary and primary schools.
7. Promote good cyber hygiene that helps to minimise data leakages, system malfunctions and other similar risks. This increases trust towards adopting digital systems and the integrity of the IT systems by avoiding any future disruptions of the digital services launched.

6.7 Access to services

Topic overview: Access to services (information on public services, availability of digital services, digital financial services, public service management, awareness-raising, and inclusion) – ensures that the necessary services are used by their corresponding target groups. To benefit from the advantages that a digital society brings, residents and businesses should be able to access public services online. These should be available and easily accessed on different devices and platforms, inclusive and user-friendly.

The overall digital maturity of access to services in The Gambia is emerging.

Information on public services — developing:
Description of level: Information about the services and how to use them is available, but not always in sufficiently.

Current situation: The Gambian government has functional analogue/physical services line-up from vehicle registries to social services. These service points are available in multiple locations across the country, but most are not provided through online channels.

The government websites provide incomplete information on the services available to its citizens, businesses, tourists, and other stakeholders in Gambian society and the economy. There are websites where there are information gaps and there are websites where information is comprehensive. An excellent example of that is business-orientated services on The Attorney General's Chambers and Ministry of Justice website, where companies can find detailed information, for example, on how to establish a private limited liability company, what documents need to fill out, what are the fees, indicative process timeline and where to hand in the necessary paperwork.

Where online service line-up is available, the information clearly states accordingly on the relevant governmental websites. In addition, information about the newly launched services is spread through public announcements and mass media across the country. There currently does not exist a service catalogue outlining both physical and digital services, their uptake and user satisfaction. Additional information enquiry requests are available via e-mail or phone line as stated across the governmental websites. So, if the user can't find the services online, the traditional means for enquiring for further information on these is available.

Availability of digital services — emerging:
Description of level: Available online public services is very limited and are at an emerging stage.

Current situation: Different Gambian digital economy and e-government-related strategies have prioritised the need to launch online services. Despite the lack of financial resources, progress is being made, and a recent success story of that is the national birth certificate registries that have been issued fully online since 2022. Several institutions are preparing for digital services. Great example is the 2022 upgrade of The ASYCUDA customs management system that enables securely process electronic customs declarations online, easily generate reliable trade statistics, and process customs payments electronically. Moderate example is The Civil Service E-recruitment Portal which enables job digital applications. Additonal moderate example is The Gambia Revenue Authority webpage, which provides excellent information on all the procedures available under their umbrella for companies and citizens

together with associated downloadable forms but does not have a portal as such. The e-failing channel has been formally created but is still inactive with an indicative message "No Content Yet". Existing policies and strategies outline the need for online services, but as indicated over interviews, the limited resources have significantly held back these developments.

Digital financial services — developing:
Description of level: Digital financial services are at a developing stage and has opportunity for rapid growth.

Current situation: People of The Gambia are successfully using various telco wallets daily. E-commerce in the Gambia has low usage, as the payment means are limited (and cash usage is high). According to the Statistics, the revenue in The Gambian e-commerce market is projected to reach US$ 55M in 2023, with an average revenue per user expected to be around US$ 81[43]. The Central Bank of The Gambia regulates payment systems, and there is a credit reference bureau set up in 2008, which was reformed in 2021. However, as stated by many interviewees, there is a strong need for a payment gateway. The government is resolving the issue by establishing a payment gateway. The expected completion date is by the end of 2023. Gamswitch is currently in use between banks and is being further developed. This service will be ideally integrated with telco mobile payment collection services. E-commerce in The Gambia has low usage, as the payment means are limited (and cash usage is high). However, few digital money licenses have been issued (for example, Afrimoney, Qmoney, Wave), and the expected uptake might be fast in the coming years. Currently, only 30% of citizens have a bank account, and an even smaller number use mobile banking services. The number of early adopters of digital banking in the country has positively reached a critical mass. This gives good confidence that once the digital payments platform has been fully developed, the digital finance uptake in the rest of the country will grow fast.

Current tax collection systems lack digitisation, and there is an opportunity for tax collection services such as trade tax collection from merchants, land tax collection from landowners and more. There's a pilot system for digital tax collection for Banjul City Council where taxpayers get a QR code. The tax officer physically goes around to validate if the merchants on the market have paid their taxes. That trial is a practical example of how digital tax collection services can be implemented. There is an opportunity for an automated trade financing system where banks or credit unions can become innovation leaders. Most of the economy is based on farming. A digital supply chain could be set up for that industry to move goods faster by enabling factoring and other trade finance services to facilitate faster logistics of farming goods. That also helps higher value from goods, for example, fruits not to be rotten. Indeed, the high percentage of cash in the economy is not supporting this trend per se, but such digital value-added services could speed up moving from cash to digital finance.

The financial services industry in the country is strongly driven by specialised credit unions – e.g., unions of teachers, police officers, and farmers. The financial fitness of credit unions varies quite a bit, depending on the specific organisation. For example, the credit union of farmers is financing fertiliser; however, the credit default rate is up to 50%, which is exceptionally high. The current system does not have the functionality to automatically debit the funds from people's salaries to pay back their debts, making the collection difficult. Therefore, automation in credit processing could decrease credit rates and increase financial fitness levels. Although Credit Reference Bureau exists, it doesn't seem to be used across all credit unions – a financial fitness exercise opportunity waiting to be used.

[43] Statista website (https://www.statista.com/outlook/dmo/fintech/digital-payments/digital-commerce/gambia)

Public service management – emerging:

Description of level: Public service management is dominated by analogue formats, and awareness raising, and inclusion is at an emerging stage.

Current situation: There is a strong need for public procurement registry. There is a law in place that enforces National ICT Agency to approve all tenders, but it's not currently functioning accordingly.

Having a procurement registry in place would help enforce this law. However, there is no existing e-cabinet to foster more transparent law-making and basic digitalisation of ministries. The land registry is not digitised, but this is an integral prerequisite for a functioning land tax collection. Google+ codes have been implemented in Banjul, Kanifing Municipality and Kombo North in West Coast Region, but a relevant policy for cross-country implementation has not been enforced yet.

Awareness-raising and inclusion – emerging:

Description of level: Information on public services awareness raising and inclusion is at an emerging stage.

Current situation: There's low awareness of digital services, even between different ministries. There used to be quarterly retreats of permanent secretaries, but it hasn't happened since the Covid-19 pandemic. As we witnessed a productive workshop between telcos, IT companies and the Ministry of ICT, started solid conversations. Minister has continuously emphasised his openness to dialogue and close cooperation with public and private sector stakeholders. Similar cooperation formats could bring a quick win for awareness-raising and inclusion on the ministry level, for starters. Additionally, in 2019, the Ministry developed an ICT Advocacy and Investment Promotion Strategy and Implementation Plan, in which a series of TV/Radio shows were organised on different ICT topics, including a promotional video and documentary series and a forum was organised between MOCDE and the National Assembly to advocate for or discuss National ICT Matters including funding issues and the role of ICT inclusive socio-economic growth and development.

6.7.1 Strengths of access to services

The initial steps have been successfully taken with the introduction of the first online services deployment. Improving access to services is integrated into a number of government strategies, such as Universal Access and Service Policy 2020, National Broadband Strategy 2020-2024 and others to improve access to services. These strategies include specific goals, such as putting in place a universal service fund for broadband service coverage expansion or setting quality of service requirements by PURA. However, as outlined in previous chapters, there is an opportunity for a more systematic approach by adding additional resources and efforts towards these developments. There is a strong political will to succeed in launching new e-services across the country. However, an actionable and measurable action plan with the necessary resources still needs to be developed. Nevertheless, the need or even an urge to develop online services accelerated has been defined and acknowledged at all levels of the relevant ministries, giving a solid base to build further developments.

Because personal computer (PC) usage in the country is relatively low and mobile data usage is relatively high, the opportunity for mobile-based services is very high. An omnichannel approach should be taken if feasible, but mobile-first could have a very strong opportunity in

The Gambia. To achieve maximum digital inclusion and to consider the developing regions in The Gambia with limited reading and digital device literacy, simplified interface and voice-based services have the best opportunity to achieve maximum adoption across all communities. To achieve maximum digital inclusion and to consider the developing regions in The Gambia with limited reading and digital device literacy, simplified interface and voice-based services have the best opportunity to achieve maximum adoption across all communities.

6.7.2 Next steps for improving the digital maturity of access to services

1. Develop a strong foundation for online services on a national level in the form of public registries, digital certificates, public-key encryption management such as public key infrastructure (PKI) and a unified information exchange layer adopted.
2. Make a mobile-first approach mandatory when developing public digital services. Because PC usage in the country is relatively low and mobile data usage is relatively high, the opportunity for mobile-based services is very high. An omnichannel approach should be taken if feasible, but mobile-first could have a very strong opportunity in Gambia. For example, a voice bot system for self-service could be one of the end users' services.
3. Make the development of simplified and voice-based public services mandatory. To achieve maximum digital inclusion and consider the developing regions in The Gambia with limited reading and digital device literacy, a simplified interface and voice-based services might be the best opportunity to achieve maximum adoption across all communities. To implement digital services in a unified manner, develop Government Service Portal (so-called One-Stop-Shop).
4. Work out an actionable and measurable action plan towards launching new public e-services, from planning and design to deployment and continuous improvement. In fine detail, this would include for example, services level agreements, prioritising the e-services long list, key performance indicators. Public services which should be digitalised first, are vehicle registration and company registration. First enables to decrease workload in physical offices and another enables to boost economy and get better overview of business environment. In addition, clear overview of legal entities enables to develop programs supporting business sector.
5. Define and acquire the necessary resources to develop, launch and maintain new e-services (e.g., e-Recruitment Portal, UNCTAD Automated System for Customs Data (ASYCUDA) portal, Civil Litigation Services, information portal for local government councils),
6. Implement e-cabinet systems for public servants to foster more transparent law-making and basic digitalisation of ministries.
7. Develop national tax collection services at an accelerated speed to increase the government budget for further investments in national digital systems. This should be one of the foundations of designing a national business registry and other business procedures design in the national e-government architecture.
8. Develop and finalise the national digital payment gateway systems as soon as possible to enable digital trade and digital finance to flourish across the country and cross-border.
9. Public Procurement Registry needs to be fine-tuned to increase the digital development engagement from the local IT sector and provide two-way knowledge transfer and overall growth of the IT sector in The Gambia.

6.8 Digital engagement

Topic overview: Promoting citizens' digital participation/engagement is a staple of an inclusive digital government. The smart use of digital tools enriches and transforms existing governance models and practices, increasing government transparency, responsiveness, and accountability. It also offers citizens an additional opportunity to participate in political processes, resulting in better political outcomes for society. For successful e-governance, examining how it is possible to support civil society and encourage citizen engagement is beneficial. This is also a part of general computer literacy development.

The overall digital maturity of the digital engagement model in The Gambia is emerging.

> ***Access to public information – developing:***
> ***Description of level: Public access to governmental information is available, but the regulation is missing. Public procurements are published online but not in a single portal.***

Current situation: Access to public information is covered by the Access to Information act and the Universal Access and Service Policy 2020. Universal Access and Service Policy 2020 implementation provides the course of action for concrete implementation and specific interventions by the responsible authorities and other stakeholders in support of universal access and service. Although the policy has been implemented since 2020, public information is only partially made available. There are examples of organisations publishing information. For instance, the Ministry of Finance and Economic Affairs publishes government budget information regularly. However, such information is only sometimes machine-readable.

With that said, there are areas where critical information is either not available or is sporadically published. For instance, there needs to be more transparency in the public procurement process. Currently, both local and international companies have limited knowledge of the procurements taking place. As companies are not aware of the procurements, they are not able to make offers, leading likely to more expensive procurements and making the whole process less transparent. In addition, such a lack of transparency provides local companies with fewer ways to collaborate with the government and grow local competencies.

Additionally, many consider the Access to Information Act implementation has been slow. Consequently, many non-governmental organisations turn to TANGO to get information. This includes information about poverty, education, health, and community development. In some instances, information is published but not easily accessible and usable. For example, different legal acts are currently scanned in.

> ***E-consultation, e-participation & empowerment - emerging:***
> ***Description of level: Online tools are available that allow citizens to provide and the government to manage and monitor feedback and input on public services.***

Current situation: The National Development Planning Platform[44] provides feedback on the major government policies and programs to submit new development ideas and get feedback

[44] The National Development Planning Platform (https://ndpp.gm/)

from the public and send proposals about new developments directly to the heads of government agencies. Although it has over 37,000 members, the number of ideas and/or forums is moderate. In 2021, a Stakeholder Engagement Plan was created to outline the necessary activities for identifying and involving all parties concerned with access to broadband and digital services.

NGOs and their umbrella organisations are not involved in public sector initiatives. The business sector is sometimes engaged but only related to a specific topic or area. Government institutions provide basic information and news on their websites and social media accounts, anyone can access the government budget, but administrative documents are not easily accessed. Legislation is available online, but usually in the format of scanned copies. Based on experts' experience, readiness to engage and empower the public exists, but the government lacks the knowledge and mechanisms to do it. One of the good examples of progress in this segment is that the Ministry of Communications and Digital Economy is organising ICT sector retreats or roundtables where the government's mission is to engage private into public sector discussions on how to improve the government service delivery covering different service lines from physical infrastructure to online services. It is very positive to see how the local ICT sector is committed to reinforcing the collaboration and coordination between the government and the private sector this way.

6.8.1 Strengths of e-consultation, e-participation, and empowerment

The overall strengths of e-consultation, e-participation and empowerment lie in the government's will to progress in those segments, and the National Development Planning Platform and Stakeholder Engagement Plan proves it. The preliminary planning process is taking place to create a working plan to engage citizens and businesses via e-channels. The needs have been identified to a moderate level, but an action plan to develop the necessary tools is not yet drafted. Currently, the private sector and citizen engagement are done mainly through physical means, and e-consultation, e-participation and empowerment formally exist through the moderate use of the National Development Planning Platform. However, there is availability to speak out towards the government through e-mails, and relevant public sector institutions' webpages outline the e-mail addresses that can be used for this type of communication and limited engagement. In addition, the government has launched several strategies and activities to increase the digital skills of its nation, such as the Private sector development and empowerment strategy 2021-2024 and the strategy for promoting technology-enabled education & science, technology and innovation 2021-2024. With extensive engagement with government ministries, institutions, industry and academic institutions, these strategies are very positive evidence of actions towards nationwide digital skills and innovation development.

6.8.2 Next steps for improving the digital maturity of digital engagement

1. Enhance already existing platform/mechanism to engage citizens in digital transformation. The general aim of (digital) engagement should be a better quality of life by being (digitally) engaged in political decision-making (advanced policy development), using government (e-) services, and having the necessary awareness and skills for these engagements. For that, people also need opportunities and access. This is particularly important for digitally vulnerable citizen groups. Therefore, we recommend mapping the digital possibilities of different (digitally vulnerable) groups regarding digital access, literacy, skills, and engagement in general, as well as the concrete needs of specific groups. Based on the mapping, develop a strategy and a plan

with recommendations, capacity-building initiatives, action proposals, pilot projects and creating opportunities for different groups to implement to get quick and tangible results in increasing digital engagement. Citizens and businesses will then be more streamlined towards new initiatives. Also, the adoption speed of changes or new services will increase significantly if open engagement is integral to the ideation, design, and other phases.

2. Develop transparency and trust between government and citizens and establish a public digital platform where government initiatives and processes can be seen publicly with the potential to comment on those activities. This can easily be tied to a government e-cabinet platform to enable accelerated information flow between the policymaker and the stakeholders. The key to building trust is the transparency and accountability of the public sector's plans, actions, impact and feedback and the credibility of the input from the citizens and the organisations. It is important to understand, show and explain the value of trust and the benefits of (digital) engagement for a democratic society. Citizens' trust in public services is a precondition for more active e-participation. There are ways to explore and utilise, and one of the functionalities of this platform could be as follows:
    a. proactive informing of plans and aims,
    b. identifying and making public misinformation threats from non-authentic sources,
    c. assessing and using traditional structures to build trust,
    d. revising and creating/updating legislation to encourage digital engagement or to offer discounts for using digital services to show the benefit,
    e. rewarding feedback from citizens using a citizen reward point system,
    f. using roadshows, talk shows, apps, and other means to get info out to the community for feedback.

6.9 Digital ecosystem & cooperation

Topic overview: Good internal and international cooperation helps to share knowledge and best practices as well as lays the foundation for international cooperation. To benefit from the advantages that digital governance can provide for international relations (trade, free movement, research, education, etc.), it is important for states to take part in international cooperation (regional or other). Such cooperation helps states to learn from one another and develop joint projects.

The overall digital maturity of the digital ecosystem and cooperation in The Gambia is developing.

Digital businesses, industries, companies, and entrepreneurs in The Gambia - developing:

Description of level: Digital businesses, industries, companies, and entrepreneurs is on a developing level with a multitude of stakeholders actively participating in the industry for several years, including in the development of national electronic infrastructure. Digital businesses models are emerging amongst entrepreneurs and digitalisation adopted across industries. There is already some adoption of IT taking place that are showing an example to others. Awareness of digital innovation opportunities is on the rise.

Current situation: The Gambian government has done an excellent job accelerating innovation in digital space over the past years. Several programs have been launched that have served as a platform and a lighthouse for implementing digital tools and business models amongst enterprises. Gambia has successfully joined the international UNDP accelerator lab network and Senegambia Adult Internship Program.

The private sector-founded Innovate Gambia initiative has been created to digitise Gambia and increase women's empowerment with the Women Boss program, and European Union-funded YEP Tech Startup Support Programme has been created to grow Gambian tech startups. In addition, some startups. Some Gambian-origin entrepreneurs have directed their efforts to developing local digital innovation ecosystems such as PointClick and Jokkolabs. Jokkolabs is a great example of an independent non-profit organisation that started an open innovation ecosystem and a virtual cluster for social transformation based on an organic community of entrepreneurs and a network of innovation centres promoting startups and entrepreneurship, ICT and education, digital literacy, digital inclusion and internet rights and freedom. Amongst other things, Jokkolabs Banjul is also involved in Open Data Charter as a Steward on the implementation and has been running the YMCA Computer Training Centre and Digital Studio. This is empowered by national strategies such as The Gambia TEE & STI Strategy 2021-2024, The Gambia ICT Human Capital Strategy 2021-2024, Strategy for Youth and Women Development & Empowerment Through ICTs 2021-2024 that outline long-term goals and the long list of necessary actions to grow countries digital economy.

There is a Disruptive Lab and other co-working space initiatives that are great support for the digital businesses' growth. Startup Incubator Gambia has been established by one of the leading high-tech entrepreneurs facilitating incubation, acceleration and design thinking programs, including networking, mentoring, and more. Over the last five years, more than 1500 entrepreneurs have received value from those programs. There is a growing entrepreneur's network in place, and business incubation programs have been recognised as a platform for the growth of new-generation enterprises. In addition, several very good other strategies were launched several years ago, such as the private sector development and empowerment strategy 2021-2024, which constitutes enterprise development, investment and business climate with clear goals and ambitions. The plans and execution have had numerous positive outcomes, but The Government's digital economy policies and programs lack resources to boost innovation on the entrepreneurship scene. The freshly created Ministry of Communications and Digital Development has shown strong intentions to initiate the growth of jobs in information and communication technologies.

The government has recognised the opportunity for private sector-led growth in digital transformation in public-private partnerships. The School of Communication and Information Technology provides excellent support for developing talent in the industry. But there is room for improvement in raising the quality of the education there. Increasing the number of computer hardware in the teaching process and improving the overall depth of the courses will help that. The local venture capital scene is underdeveloped, with arguably only a few seed investments in its history. Exploration of how to tap into the large diaspora of the Gambian nation across the world is needed. The diaspora numbers stand between 120 000-200 000, with an estimated annual contribution to The Gambian economy of over USD 200 million with the potential of ca USD 600 million in investments per annum.

For example, cross-industry development opportunities in digitisation have been, for example, accelerated with government leadership with Strategy for Agricultural Development and

Modernization Through ICTs – 2021-2024, which goals are strengthening existing agriculture services, the launch of high-impact feasible services, the preparation and linking of databases. Compared to the potential of Gambian companies have, a limited number of businesses still use digital business models. However, a significant number of companies emerging from the startup ecosystem have focused their business models on harnessing information and communication technologies. Their business models have been focused on e-commerce, edutech, health tech etc. The Gambia's small and medium size companies are witnessing too many barriers to entering and winning the public procurement process to provide innovation to the government. Traditional industries lack resources and awareness on how to harness the potential of digital technologies to increase their competitiveness. Gambian IT leaders have pointed out the low number and low quality of IT graduates and that employers need to retrain them as they start their first job in the industry. In addition, foreign multinationals have yet to discover The Gambia as a digital business investment destination, and more work is needed to achieve that status.

National cooperation with other sectors – developing:

Level description: Government engages at least one of the following stakeholders in the process of digital transformation: national academic, civil society or private sector stakeholders in the process of digital transformation.

Current situation: Some cooperation exists between the government and other sectors. The private sector is more actively involved through various committees, but civil society involvement is limited. The private sector feels that being part of committees gives them a voice. Some public sector consultations are taking place, but these are one-off initiatives rather than the norm. The private sector and civil society feel their involvement in digitalisation is not enough, and their needs are not considered/prioritised.

There is a disconnect between government investments and actual needs. For instance, it was highlighted that the current skillset of the labour market does not meet the expectations of the companies and the government. It was highlighted that more collaboration regarding upskilling should occur as the private sector has the competence and can educate the government. The government leads policy development, but other sectors want their input to be heard. It was suggested that this could reduce the fragmentation of various government policies and make them more coherent.

There are existing action plans to encourage industry and government partnerships to grow and diffuse innovation and leverage opportunities for innovation and increase productivity in service delivery, such as highlighted in the action plan of Strategy for Promoting Technology Driven Social and Community Services Provision and Delivery. These include specific goals, such as partnership agreements by stakeholders on R&D new business cases for social and community service provision and so on, with deadlines and some budgeting.

The public-private partnership was highlighted as important by both the ministries and the private sector with already successful examples. For example, the Ministry of Communications and Digital Economy hosted an ICT sector retreat event, which was highlighted as a great first step to involve the private sector in The Gambia's development. However, such initiatives should not remain one-off events, and more systematic working groups should be formed to involve other sectors actively. From the NGO perspective, collaboration with the Ministry of Finance and Economic Affairs is working, but there needs to be more cooperation with other ministries. It was emphasised that NGOs should be involved from the beginning, especially

regarding policymaking. For non-governmental organisations, it was also unclear which ministries coordinate what.

Outlining that roles and mandates between ministries should be made more transparent. Some cooperation with the universities is also taking place, but the provided education was not considered to meet the market's demands. Overall, academia, the private sector and NGOs are sporadically involved in digital transformation processes, but the approach is not systematic.

> ***International cooperation on digital governance – developing:***
> ***Level description: Representatives of the country take part in international cooperation organisations and occasional projects. Best legislative practice is implemented in some areas of digital governance.***

Current situation: International cooperation is taking place at the level of international organisations and on a project basis. For example, implementing specific information systems with other countries, mainly from Africa. Such cooperation from one side serves to share the experience The Gambia has had, for example, related to financial management system implementations.

As government funding for ICT is limited, donor-funded projects are prevalent. Although a systematic approach to donor-funded projects is missing, some coordination is taking place by the Ministry of Finance and Economic Affairs. Cooperation is seen as key in successfully carrying out such projects and successfully securing funding. The Ministry of Communications and Digital Economy and the Ministry of Finance and Economic Affairs play a crucial role in securing external funding. In addition, Gambian international relations are often led by the Ministry of Foreign Affairs, International Cooperation and Gambians Abroad, which has had successful high-level meetings with EU delegations in recent years with an aim to deepen the existing good relationships and cooperation[45].

There is little international cooperation taking place regarding policy and standardisation. It exists mainly from a donor financing perspective, e.g., regarding official statistics. Legislative changes take a long time and are not seen to support international cooperation. This is highlighted by both the public sector organisations and the NGOs, who sometimes need to provide relevant data to support their projects, which they either do not have access to or don't exist.

6.9.1 Strengths of the digital ecosystem & cooperation

Over the last few years Gambian private sector has shown substantial growth of digital business growth, and the number of new companies with digital business models is growing. The startup community is on the rise, and several cross-border and local incubators-accelerators have been launched to boost innovation growth. The government emphasises ICT entrepreneurship as one of the core elements in its development policies and aims to enforce more actions to succeed in partnership with the private sector. Strong international cooperation is taking place, primarily related to international organisations. Significant collaborations have been developed with European Union and World Bank. Best practices from developed systems are shared between countries, especially from Africa. National

45 Press releases of the Ministry of Foreign Affairs, International Cooperation and Gambians Abroad, November 15, 2022 https://www.mofa.gm/gambia-eu-cooperation-partnership-consultative-meeting, and January 17, 2023 https://www.mofa.gm/political- dialogue-between-government-gambia-and-european-union

cooperation with the private sector exists in some areas, for example, where the private sector is involved via committees. The private sector feels they are listened to and heard if they contribute to a committee.

6.9.2 Next steps for improving the digital maturity of the digital ecosystem & cooperation

1. Invest in The Gambian higher education system to further increase the number and quality of software development courses across the country. Ensure each student's computer hardware availability and enforce practical problem-solving challenges through the IT/ICT syllabus.
2. Develop a public-private partnership programme based on "Ecole42", a unique IT programming education program. Include local tech entrepreneurs and diaspora funding for the necessary infrastructure of the Ecole42-like program to kick-start this additional layer of IT education in different parts of Gambia. This will provide high-tech career opportunities and high-paid jobs for young talent across the country and speed-up digital innovation entrepreneurship.
3. Establish a national startup ecosystem development unit under The Gambian Investment & Export Promotion Agency. Build systematic relationships and collaborations with existing startup community platforms to intensify cooperation in tackling challenges and harnessing opportunities of the startup industry. Enable the startup ecosystem development unit to run regular digital startups community networking events and knowledge-sharing platforms and assign the investor relations development and venture capital market development (locals, international, incl. diaspora based).
4. Raise the awareness of opportunities of how digital tools and digital business models can increase the competitiveness of Gambian companies both locally and internationally and across traditional industries. This can be achieved, for example, with online promotions, experience sharing and best practice workshops.
5. Develop a systematic roadmap on how government can harness all the private sector opportunities to enable the private sector to lead the digital development of the Gambian society and economy. Include the best practices from the world to develop a measurable and achievable action plan to engage the private sector to the maximum and achieve the desired digital leadership position in the region.
6. Ensure new procurements allow local companies to participate by eliminating limiting factors such as extensive revenue and publishing the information of all procurements in one information point. Enabling local small and medium size companies to add value to public sector systems allows a progressive two-way knowledge transfer and significantly boosts the local innovation ecosystem.
7. Analyse the requirements and plan for the development of a comprehensive government procurement registry that enables local companies to participate easily in public sector innovation. In addition, it allows for more transparency and raises general awareness of government-initiated projects.
8. Plan to outsource more solutions and full services to the private sector (for example, PPP) to reduce the burden on the government and reduce bureaucracy. PPPs are crucial to achieving a successful transition to a digital economy. Therefore, the government should encourage the private sector to venture into these partnerships. This would also help to avoid the evolvement of state monopolies and give equal access to both public and private enterprises.

9. Develop a plan to systematically engage local organisations, for example, in. developing significant policies and legal frameworks.
10. Identify critical government requirements and map potential open-source solutions developed by other governments or private sector organisations. Based on the analysis, plan for a proof-of-concept project to validate this collaboration model.
11. The ministry of Digital Economy should collaborate with the Ecowas Regional Authority the GCCPC to adequately resolve cross border issues regarding Competition and consumer welfare. The ERCA are mandated to deal with cross border competition Issues within West Africa. (Digital Eco System)
12. Publish use cases of government and other sector cooperation to highlight the value such cooperation creates.
13. Reach out to other sectors and identify their data needs. Based on the analysis, prioritise investments or collaborate with government organisations to publish such data.

7 Conclusions

To conclude, most subtopics for digital readiness in The Gambia are on the emerging or developing level, while external funding is at the established level. However, it is positive that in each subtopic, some initiatives or projects create a strong potential for reaching the next level of digital transformation.

A more systematic approach is needed to reach the developing level in more areas. For that, the central coordination by MOCDE will support implementing future initiatives and existing strategies.

Based on the assessment, experts recommend paying particular attention to **IT architecture and interoperability**, **digital identity**, and **data management** on the national level, as these are the key enables for other topics. Investing in **digital services** enables the engagement of vulnerable groups and decreases the digital divide. Focusing on the most used public services, which are beneficial and convenient for people, makes it more likely they will start using them. In addition, a mobile-first approach and user-friendly and secure services will boost trust towards digital governance and create a positive hands-on experience for citizens.

Digital readiness assessment in subtopics is in the following table:

	Emerging	Developing	Established	Advanced
1. Political support and strategy		✓		
Agreement & strategy		✓		
Digital governance oversight		✓		
Supporting activities		✓		
Legal framework	✓			
2. Coordination	✓			
Organization & coordination		✓		
Arcitecture & interoperability	✓			
Digital infrastructure		✓		
Cooperation of IT managers		✓		
3. Financing model		✓		
Governmental funding		✓		
External funding			✓	
4. Cybersecurity		✓		
Policy & strategy		✓		
Legal framework	✓			
Operational management		✓		
International partnership		✓		
5. Data management, secure data exchange	✓			
Management of digital data	✓			
Legal framework	✓			
Access to data		✓		
Secure data exchange		✓		
6. Digital identity, digital signatures		✓		
Personal identification		✓		
Digital identification and signatures		✓		
Legal framework	✓			
7. Access to services	✓			
Information on public services		✓		
Availability of digital services	✓			
Digital financial services		✓		
Public service management	✓			
Awareness raising and inclusion	✓			
8. Digital engagement	✓			
Access to public information		✓		
e-consultation, e-participation, empowerment	✓			
9. Digital ecosystem and cooperation		✓		
Digital businesses, industries, companies, and entrepreneurs		✓		
National cooperation		✓		
International cooperation		✓		

Figure 9 Digital Readiness Assessment results per subtopic

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Annex 1. Description of maturity levels for digital readiness assessment

	Emerging	Developing	Established	Advanced
Political support and strategy	Political support and strategy There is no or very minimal clear prioritisation of general digital transformation goals or priorities (emerging)	Defining general digital governance priority areas is in process and compiling a national digital transformation strategy is underway (developing)	General digital governance priority areas are clearly defined and backed by adopted strategic document(s) (established)	Digital transformation is mainstreamed into strategies across all sectors. Digital ambitions and goals of the government are exemplary and recognised by international stakeholders (advanced)
	Digital governance oversight No or very minimal systematic review of general digital governance implementation is carried out. (emerging)	Compilation of general digital governance implementation plans is in progress. Digital transformation process review is sporadic (developing)	General digital governance implementation plans are adopted and published, and regularly reviewed. (established)	General strategy monitoring dashboards/networks for high-level and mid-level managers are available. Implementation plans are reviewed by independent assessors (advanced)
	Supporting activities Digital transformation communication plans are missing (emerging)	Compilation of digital governance communication plans is in progress (developing)	Digital governance communication plans are adopted and published (established)	Communication on digital transformation is part of communication strategies and activities of all public sector authorities (advanced)
	Legal framework Legal framework supporting digital governance transformation is missing or is in the initial phase: interoperability framework, government core registers (business, civil, land, tax, etc.) e-commerce, data and data protection, identity, digital signature, documents, data exchange, connectivity, telecommunications, etc. (emerging)	Legal framework supporting digital governance is at minimum level and incompatibles are identified (developing)	Legal framework supports digital governance in most aspects, electronic administrative acts have the same legal effect as paper acts (established)	Legal framework supports digital governance in all aspects and can adapt to the needs of the changing digital environment (e.g., adoption of emerging technologies) (advanced)
Coordination	Organisation & coordination Oversight of the general digital governance development in the country is missing or in the initial phase. (emerging)	An organisation or person is formally designated to oversee the general digital governance development in the country; power and competences of digital governance coordination are mandated by legislation. (developing)	The coordinating institution is well established and also responsible for managing the overall digital governance architecture. (established)	Representatives of academia, private sector, and civil society are systematically involved to contribute to policy development in the field of digital transformation. (advanced)

Architecture & interoperability The digital government architecture and interoperability framework have not been defined or are in the initial phase. (emerging)	An initial vision for digital government architecture and interoperability framework exists. (developing)	Digital government architecture and interoperability framework are adopted and mandatory to use. (established)	In addition to a mandatory digital government architecture and interoperability framework, there are clear rules for establishment of databases and digital services, and interoperability of data. (advanced)
Digital infrastructure Countrywide mobile network coverage is missing or in the initial phase. Digital government architecture and interoperability framework is missing. Date centres and/or basic infrastructure for secure data exchange are missing. Cloud based solutions used by governmental institutions are missing (emerging)	2G or 3G mobile network covers most of the country. Digital government architecture vision and interoperability framework are used in some government institutions. Some of government institutions have their own/local data centres and rules for back-ups, basic infrastructure exists for secure data exists. Some of government institutions use cloud-based solutions, but cloud policy or strategy is missing. (developing)	4G mobile network covers most of the country. Countrywide fixed broadband or fibre optics is used by most of the government institutions. Digital government architecture and interoperability framework are adopted and used in most public institutions. Most government institutions use government data centres, legal framework (incl. secure back-up's) and infrastructure for secure data exchange exists. Most government institutions use cloud-based solutions, government cloud policy or strategy exists. (established)	5G mobile network covers most of the country. Countrywide fixed broadband or fibre optics is used by most of the government institutions, citizens, and private sector. Digital government architecture and interoperability framework are adopted and mandatory to use in public institutions, incl. there are clear rules for establishment of databases, digital services, and interoperability of data. Government has the plan to disburse and distribute digital operations and data assets across borders and into other countries exists. Effective implementation of cloud-based solution includes stakeholder and public-private partnership. (advanced)
IT managers Most ministries do not have persons in place who would oversee digital transformation within the organization. Countrywide fixed broadband or fibre optics is mostly missing or in the initial phase. (emerging)	Most ministries have CIOs /IT managers in place whose job it is to oversee digital transformation within the organization, but their roles and responsibilities are not always clear and there is little cooperation between them. Countrywide fixed broadband or fibre optics is used by some of the government institutions. (developing)	All ministries have CIOs /IT managers in place, they have clear roles and responsibilities, and cooperation mechanisms are in place. (established)	All ministries and larger public authorities have CIOs / IT managers in place who engage in effective strategic cooperation both vertically inside their organisations as well as horizontally across the public sector. (advanced)
Governmental funding			

Financing model	Ad hoc ICT budget planning and allocation. Actual funding of projects and maintenance is sporadic and depends on external factors (emerging)	A separate budget is designated for ICT and digital development at each ministry and government agency, but it does not cover the whole dimension. Budget transparency principles are defined, but ICT budget impact analysis is not fully implemented (developing)	Total costs and yearly resources for ICT and digital development are planned at the national level based on a long-term strategy. Budget planning principles are developed and enforced by law. ICT maintenance and development costs are separately budgeted (established)	Sustainable financing for ICT and digital development based on a long-term strategy and impact analysis is available. Risks arising from the cyclical planning of the state budget are considered. Public ICT development costs are justified and considered, criteria for value estimation exist (advanced)
	External funding			
	External funding for ICT and digital development is missing and/or coordination is lacking. (emerging)	External funding for ICT and digital development is coordinated from the perspective of a single organisation (in silos). (developing)	External funding for ICT and digital development across the government is coordinated by a designated authority/body, incl. procedures for applying, using, and monitoring its use. (established)	External funding for ICT and digital development across government is coordinated by a designated authority/body, cooperation with international organizations is proactive and well facilitated. (advanced)
Cybersecurity	Policy & strategy			
	National cybersecurity strategy is missing or in the initial phase. Government institutions deal with ICT/cybersecurity issues reactively and independently. Critical infrastructure assets and operators have not been identified (emerging)	A national cybersecurity strategy is adopted or approved, but an implementation plan is missing, under development or at the initial phase. Some cybersecurity requirements are set at the government institutions level. The list of CII operators exists. (developing)	A national cybersecurity strategy is adopted and implemented according to a detailed implementation plan. A mandatory ICT/cybersecurity standards and procedures are in place for government and operators of critical infrastructure (secures and protects the availability of critical assets) (also private). The list of CII operators and CII register exists and is up to date (established)	The national cybersecurity strategy is complemented by a detailed implementation plan, which is reviewed regularly. A mandatory ICT/ cybersecurity standard is in place for all digital service providers and ICT/ cybersecurity issues are addressed proactively. Cooperation between CII operators and private sector exists (advanced)
	Legal framework			
	The legal framework for cybersecurity (cybersecurity, cybercrime, etc.) is missing, outdated or inadequate. (emerging)	The basic legal framework for cybersecurity is adopted. (developing)	The legal framework for cybersecurity is in line with international standards and is regularly reviewed (established)	The legal framework for international collaboration for fighting cybercrime and other forms of cooperation is adopted. (advanced)
	Operational cybersecurity management			
	A government institution managing cyber incidents (CERT/CSIRT) is missing or lacks resources to effectively respond to cybersecurity incidents. (emerging)	The CERT/CSIRT function is in place but focusing only on the government institutions; cooperation with the private sector and cybersecurity awareness raising for the public and private sector is missing or is conducted based on single initiatives. (developing)	CERT/CSIRT is managing cybersecurity incidents across sectors following national standards and procedures, and sometimes contributes to cybersecurity awareness raising activities for the public and private sector. (established)	CERT/CSIRT is managing cybersecurity incidents across sectors following international standards and procedures, and systematically contributes to cybersecurity awareness raising activities for public and private sector. (advanced)
	Partnership			

	International cooperation and participation in international networks on cybersecurity is missing (emerging)	Participation in some regional or international networks and discussions in the field of cybersecurity exists, but implementation of international good practice is missing (developing)	Active regional or international cooperation and contribution takes place in the field of cybersecurity (exercises, exchange of experience) (established)	Significant contributions are made to cybersecurity policy debates and capacity building of other countries (advanced)
Data management, secure data exchange	Management of digital data Information about governments´ databases and other information assets (registries, servers, services, etc) is missing. Data management (governance) processes/policies/strategies are missing at government level, incl.: - data quality, - data lifecycle, - data management roles. Up to 25% of registers, databases and services are digitised. Organizations face serious data quality issues. (emerging)	Inventory about governments databases and other information assets is planned or underway. Data management (governance) processes/policies/strategies are being developed in government level but is not yet fully implemented. Up to 50% registers, databases and services are digitised. Data quality issues are being addressed, but not systematically. (developing)	Government has an overview of databases and other information assets, and it is constantly updated. Data management (governance) processes/policies/strategy are adopted at the government level, and a responsible organisation is appointed. Up to 75% registries, databases and services are digitised and in active use, digital first and once only principle is implemented in up to 50% migration management institutions. Data quality processes are methodologically implemented and followed. (established)	Government has a real-time overview of all databases and other information assets. Data management processes/ policies/ strategy are adopted in up to 90% of government institutions and data management lifecycle is an organic part of organisations' processes. Up to 90% registries, databases and services are digitised, digital first and once only principle is implemented Data quality management is an organic part of organisations' processes and is being addressed proactively. (advanced)
	Legal framework The legal framework supporting the use of digital data is missing or is in an initial phase. (emerging)	The legal framework supports the use and exchange of digital data and documents in some areas of government. (developing)	The legal framework supports the use and exchange of digital data in government institutions, reuse of data is mandatory. (established)	The legal framework supports digital first and once only principle. (advanced)
	Access to data Government registers are in paper format, registers digitalisation is at an initial phase. Exchange of digital data between government institutions is missing, or physical or unsecure carriers are used. Governments´ open data is missing or not accessible. Citizens have no access to the data government holds about them. (emerging)	Up to 50% government registers are in digitalised and accessible via digital channels. Government institutions exchange digital data at some level, but it is not coordinated or standardized. Governments´ open data is available in some sectors and/or access is limited. Citizens have limited access to the data government holds about them. (developing)	Up to 75% government registers are in digitalised and accessible via digital channels. A technical solution for secure exchange of digital data between government institutions is deployed, linking a significant number of government registers and databases. Government institutions provide up to date open data and it is accessible to all. Citizens can access the data government holds about them. (established)	Up to 90% government registers are in digitalised and accessible via digital channels. All digital data is shared between government institutions and private sector in cases prescribed by law. Private sector actively is using governments´ open data for creating new services. Citizens can see who has accessed information government holds about them. (advanced)
	Secure data exchange			

	Data exchange is missing, or physical or unsecure carriers are used. Organisations do not understand or see need and necessity for cooperation and data exchange. Standards or general agreements for data exchange do not exist. (emerging)	Government organizations exchange data at some level, but it is not standardised. (developing)	A technical solution for secure exchange of data is deployed, linking a significant number of government registers and databases. Cross-governmental data exchange approach is agreed and/or implemented. (established)	All digitised data is shared. Private sector benefits from secure data exchange with public sector. (advanced)
Digital identity, digital signatures	Personal identification			
	Register of persons is missing. A unique persistent personal identifier issued by the government (e.g., national ID number or personal code) is missing. (emerging)	Register of persons is established. A unique persistent personal identifier mechanism (national ID number) created by the government is in place and is in use in some government registers. (developing)	Register of persons is established and it is in electronic format. Single unique identifier is used across the public sector. (established)	Government institutions use digital services to access register of persons. All residents have a unique identifier originating from single source, and it is used in public registers, and services across sectors. (advanced)
	Digital identification and signatures			
	Username and password are mostly used for digital identification, digital signature is missing. Awareness raising campaigns are missing. (emerging)	Secure government issued digital identity is used in some public services. Government institutions promote use of digital identity in their sector, centralized approach is missing. (developing)	Secure government issued digital identity is used in most of public services Awareness-raising campaigns to make digital identity and signature known and usable for the public are established. (established)	Secure government issued digital identity and digital signature are used across sectors by citizens, residents (incl. migrants), and foreign cross-border identities are recognized. Secure government issued digital identity and digital signature are used by citizens in public and private sector. (advanced)
	Legal framework			
	Legal framework supporting issuance and use of digital identity and digital signature is missing. (emerging)	Digital identity and digital signatures are recognized by the law in some cases, some government institutions use digital signing internally. (developing)	Digital identity and digital signatures are recognized by the law in most of the government services, it is mandatory to sign administrative acts digitally. (established)	Digital signature is recognised by law as handwritten signature. (advanced)
Access to services	Information on public services			
	Online information about public services is missing or not systematically available. (emerging)	Information about the services and how to use them is available, but not always in sufficiently. (developing)	Information about all public services is available through different online sources. Instructions or services are accessible in several languages (also for foreign residents). (established)	Information about all public services can be found from a single online source. Instructions or services are accessible in several languages (also for foreign residents). (advanced)
	Availability of digital services			

	Digital services are missing, or only one-way communication is provided (download of forms from the internet, manual fill in and physical submission). Usability of websites and digital services is poor. Possibility to use secure digital identity for authentication in public services is missing. Access to one's personal data in government registers is missing. Cross-border services and cooperation is missing. (emerging)	Up to 50% of digital services provide two-way communication (forms can be filled in and submitted online to trigger the process of public service). Up to 50% of websites and digital services are easy to use with different devices. Up to 50% of public digital services enable use of secure digital identity for authentication. Access to one's personal data in government registers is enabled in one or two cases. Cross-border services are provided in one or two specific cases. (developing)	Up to 75% of digital services are transactional (they offer electronic submission of prefilled forms and reuse of the existing data; the output is delivered electronically.) Up to 75% of websites and digital services are easy to use with different devices. Up to 75% of digital public services enable use of secure digital identity for authentication. Access to one's personal data in government registers is enabled in three or more cases. Cross-border services are provided in three or more specific cases. (established)	Up to 90% of digital services are personalized, automated, and/or proactive. Up to 90% of websites and digital services are easy to use with different devices and follow the WCAG 2.0 standards. Up to 90% of digital public services enable use of secure digital identity for authentication. Access to one's personal data in government registers is enabled across public sector. Cross-border services are provided across public sector, cooperation and supportive legislation exist. (advanced)
	Digital financial services Online payments are missing. (emerging)	Up to 50% of public digital services enable online payments. (developing)	Up to 75% of public digital services enable online payments, centralized payment solution is in use. (established)	Up to 90% of public digital services enable online payments, centralized payment solution is in use and payment options are standardised. (advanced)
	Public service management Management of digital services is missing. Civil society and private sector are not involved in service provision and design. (emerging)	Development and management of digital services are not centrally coordinated and financed. Civil society and private sector are involved in service provision and design in some extent. (developing)	Development of digital services is centrally coordinated and financed. Civil society and private sector are regularly involved in service provision and design. (established)	Well-established support for users is available (incl. technical support). Civil society and private sector are involved in service provision and design. (advanced)
	Awareness-raising and inclusion Awareness-raising campaigns are missing or are implemented irregularly. (emerging)	Some service usage campaigns are conducted, value perception and engagement are stated as the principles, but implementation is irregular. (developing)	Service usage campaigns are held regularly. (established)	Most of the people have good abilities to use digital government services. (advanced)
D .ig	Access to public information			

Digital ecosystem & cooperation	Universal access to information on legislation and decisions is missing or limited. (emerging) Very limited transparency of the public procurement process. (emerging)	Public access to governmental information is available, but the regulation is missing. Public procurements are published online, but not in a single portal. (developing)	Basic open government data is made available for creating new services and providing input to public policy making. All procurements are published and available in the same portal. (established)	The government promotes open, easily accessible, useful, re-usable public data in machine readable formats. The whole public procurement process from start to end is public and transparent. (advanced)
	E-consultation, e-participation & e-empowerment			
	(Digital) engagement is very limited or non-existent, as the public sector does not seek cooperation or consultations with stakeholders from the general public, civil society organizations, and other sectors. (emerging)	Online tools are available that allow citizens to provide and the government to manage and monitor feedback and input on public services. (developing)	The government engages citizens and civil society actors by using digital instruments (e.g., online tools and e-participation solutions). The government commits to and accepts the results of the process (legally binding effects). (established)	The government offers and the citizens and civil society actors take an active role in developing e-services, proposing policy options, and shaping the policy dialogue. Society's feedback is continuously monitored and considered. (advanced)
	Digital businesses, industries, companies, and entrepreneurs			
	Digital businesses models have limited use in the society and companies are not harnessing the digital tools to increase their competitive edge. Awareness of digitization opportunities in different industries is very low. (emerging)	Digital businesses models are emerging amongst entrepreneurs and digitalization adopted across industries. There is already some adoption of IT taking place that are showing an example to others. Awareness of digital innovation opportunities is on the rise. (developing)	Entrepreneurs are actively launching new digital businesses models on a local and international markets. Companies see digitalization as a means of increasing competitive edge. Awareness of digital innovation opportunities is high. (established)	Innovation driven digital businesses add significant GDP to local economy and increase the competitiveness of companies across traditional industries. Companies see digitalization as a norm to increase competitiveness on local and international markets. (advanced)
	National cooperation with other sectors			
	Digital governance related national cooperation with academic, civil society or private sector stakeholders does not exist or is rare and without direct coordination. (emerging)	Government engages at least one of the following stakeholders in the process of digital transformation: national academic, civil society or private sector stakeholders in the process of digital transformation. (developing)	Government systematically engages national academic, civil society or private sector stakeholders in the process of digital transformation. Digital transformation projects are an established form of cooperation among national stakeholders. (established)	Public-private partnership and cooperation with academic institutions is recognized as usual practice in the field of digital governance. (advanced)
	International cooperation on digital governance			

	Best regional legislative practice is not considered. Digital governance related international cooperation is sporadic and not directly coordinated. (emerging)	Representatives of the country take part in international cooperation organizations and occasional projects. Best legislative practice is implemented in some areas of digital governance. (developing)	The country takes part in international projects and exchange of experience linked to digital governance in an active and coordinated manner. Best regional legislative practice is implemented. (established)	Digital government vision and principles are aligned with international/regional standards ensuring compatibility. The legal environment supports cross-border services and cooperation. Cross-border interoperability is possible or exists. The state contributes to digital transformation capacity building of other countries or states. (advanced)

Annex 2. List of interviews and meetings

eGA experts conducted 24 interviews with the following 17 stakeholders both onsite and online:
Ministry of Communications and Digital Economy
September 20, 2022 (online)
October 12, 2022 (online)
October 17, 2022 (onsite)
October 21, 2022 (onsite)
Ministry of Finance and Economic Affairs
October 10, 2022 (online)
October 17, 2022 (onsite)
November 10, 2022 (online)
December 7, 1011 (onsite)
Public Utilities Regulatory Authority (PURA)
December 7, 1011 (onsite)
Ministry of Higher Education, Research, Science and Technology
October 18, 2022 (onsite)
The Gambia Investment and Export Agency (GiEPA)
October 18, 2022 (onsite)
Discussions with ICT sector representatives at ICT Sector Retreat
October 18, 2022 (onsite)
National Association of Cooperative Credit Unions of The Gambia
October 20, 2022 (onsite)
Jokkolabs Banjul
October 20, 2022 (onsite)
Cayor Enterprises
October 20, 2022 (onsite)
The Gambia Cybersecurity and Incidence Response Team (Gm-CiRT)
November 9, 2022 (online)
Ministry of Trade, Regional Integration and Employment
November 16, 2022 (online)
Ministry of Gender and Women's Affairs
November 24, 2022 (online)
The Gambia Bureau of Statistics
December 7, 2022 (onsite)
January 9, 2023 (online)
Office of the President
December 7, 2022 (onsite)
InSIST Global Gambia
December 8, 2022 (onsite)
The Association of Non-Governmental Organizations in The Gambia (TANGO)
December 8, 2022 (onsite)
The Gambia Telecommunication Company
December 9, 2022 (onsite)
eGA experts also conducted the following workshops in Banjul:
Workshop on Digital Economy - October 19, 2022
Workshop on Data Management and Open Data - December 6, 2022

Annex 3. Abbreviations & terms

Acronym	Definition
2G/3G/4G/5G	Second/Third/fourth/fifth generation of wireless mobile telecommunications technology
API	Application Programming Interface
CERT	Computer Emergency Response Team
CDO	Chief Data Officer
CII	Critical Information Infrastructure
CIO	Chief Information Officer
CIRT	Computer Incident Response Team
CISO	Chief Information Security Officer
COVID-19	Novel Coronavirus (2019-nCoV)
CSIRT	Computer Security Incident Response Team
CTO	Chief Technology Officer
CS	Cybersecurity
DCAT-AP	Data Catalogue Vocabulary Application Profile
DPO	Data Protection Officer
eGA	e-Governance Academy
EU	European Union
GBOS	The Gambian Bureau of Statistics
GDP	Gross Domestic Product
GIP	Government Interoperability Platform
GIS	Geographic Information System
GiEPA	The Gambia Investment & Export Promotion Agency
gmCSIRT	The Gambian Computer Emergency Response Team
ICT	Information and Communications Technology
IFC	International Finance Corporation
IT	Information Technology
MDA	Ministries, Departments and Agencies
Mobile-ID	Digital identification and signature solution via mobile phone
MOCDE	Ministry of Communications and Digital Economy
MoFEA	Ministry of Finance and Economic Affairs
NGO	Non-Governmental Organisation
Acronym	Definition
PKI	Public Key Infrastructure
PURA	The Gambia Public Utilities Regulatory Authority
SME	Small Medium Enterprise
TANGO	The Association of Non-Governmental Organizations in The Gambia
USAID	United States Agency for International Development
WB	Word Bank

Terms:

Digital-first means a shift in government and service development from favouring traditional channels to prioritising digital ones.

Once only means that government must use and re-use already collected information or data, and it is forbidden to ask for the same information from the citizen again.

Cross-border services mean services provided by public institutions that either enables owners of foreign digital identity to use the service by authenticating themselves using the same foreign identity tool and or are provided based on the data exchanges between different countries.

High-value data means data re-use which is associated with significant benefits for society, the environment, and the economy, in particular, because of their suitability for the creation of value-added services, applications, and new, high-quality, and decent jobs, and of the number of potential beneficiaries of the value-added services and applications based on those datasets.

Mobile first means a service design process where a mobile version will be created first, which is afterwards adapted to larger screens. It is the contrary approach to the traditional design process, which starts with a desktop site and then is adapted to smaller screens. It means that websites ate built with mobile users in mind, with the primary goal of improving these mobile users' experience.

A voice bot system is an AI-powered robot that can carry a voice conversation with a user.

Privacy by design is an approach that considers privacy throughout the engineering and design process.

To learn more about Ministry of Communications and Digital Economy, The Gambia and its policy, projects and programs, please kindly visit its Website :

https://mocde.gov.gm/ or contact via email at : info@mocde.gov.gm

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