

OCTOBER 2023

DIGITALIZATION IN AFRICAN PORTS NATIONAL FACT FILES

Diagnostic of Status of Current IT systems and Policy Impediments in African Ports



Acknowledgements

This report is produced by Mark Wootton, Richard Willis, Niels van Kouwen and Andrew Clark of Royal HaskoningDHV and Marko Zavadlav and Massimo Bagozzi of DBA group, and is directed by Frederik Mabeoone. The data was partly gathered by all local partners involved in the study.

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Introduction

To ensure critical supply chains continue to function in the face of increased disruption from global events and pandemics, improvements in digitalization of these supply chains and the underlying maritime and logistics supply chains are urgently needed. Improvements in digitalization can also increase competitiveness by reducing the costs of international trade and increased transparency and trading efficiency.

Further to this, changes to regulations such as those proposed by the IMO (FAL Convention) make it mandatory for all vessels and ports to exchange declarations electronically via a single window with effect from January 2024. These regulatory changes provide an additional impetus to digitalization efforts of all maritime authorities and affected stakeholders. At both a policy and strategy level, supported by appropriate legislation, the regulatory environment that exists within the country can either drive or hinder these digitalization initiatives.

With increased reliance on digitally enabled processes and supporting systems and infrastructure, the importance and focus on cyber-protection and resilience also increases accordingly.

The African Ports digitalization study aims to identify the current support or impediments to digitalization via a high level desktop review of the maritime trade, digital infrastructure and policy and regulatory environment of the countries in scope. Additionally the study aims to determine the current status of port digitalization and cyber-security using a port-level survey with the port authorities.

The National Fact Files for Maritime Digital Maturity bring together several elements of the African ports Digitalization study into a segmented, standardised and easily sharable format, divided by country.

The results from the port-level survey are included in each fact file, as a primary means to extract a country-level overview of the policy, development metrics, and comparison to the digital topics researched during the project.

Fact Files are intended to be shared and, where useful, updated regularly, to guide policy development, infrastructure investment and port-level initiatives, as a key dissemination output from this project.

Main contents

The National Fact Files are filled with indicators and information to present the scale and contents of different barriers/enablers for digitalization of ports in Africa. The digitalization status of the country's ports themselves can be seen on the last page of each country's profile.

Important general barriers and enablers for port digitalization that have been identified include the following:

1. Country's economy and trade:

Countries with a more developed economy and dependence on international trade, tend to have more demanding and extensive supply chains. Therefore, more pressure is put on ports improve their digital tools, systems and administration to accommodate such complexity.

A suitable indicator for the strength of a nation's economy (for its population) is the National Economic Output Density which can be represented by the GDP per Capita (US\$) from the National Fact Files. Other indicators for this barrier/enabler included in the fact files for further granularity, include: Human Capital Index, International Trade and the Global Competitiveness Index.

2. Institutional framework and trade facilitation:

The boundaries for the digitalization of trade for the whole supply chain are largely determined by the way a government facilitates trade. Absence, or weakness of laws and policies in a country may form a significant barrier for initiatives to digitalize trade or port operations. Alternatively, special policies, strategies or laws may encourage or even oblige port authorities and the wider supply chain actors to take-up new digital ways of working.

A suitable indicator for the level of Governmental Trade Facilitation is the OECD Trade Facilitation Index. Other supporting indicators included in the fact files, are:- CPIA score or the presence of a law/decree for a single window.

3. Supporting ICT infrastructure:

It is expected that lack of sufficient supporting ICT infrastructure may form a significant barrier for the digitalization of a port. Digital tools and systems are only as good as its supporting infrastructure. For example, cloud-based hosting is only possible in conjunction with high speed, reliable internet connectivity.

A suitable indicator for supporting ICT infrastructure is the state of the overall National ICT Infrastructure, best represented by the African Development Bank AIDI: ICT Index in the fact files. Other indicators for this barrier/enabler in the fact files are amongst others: Global Cybersecurity Index, Principal Fiber Data Networks and Internet Penetration.

4. Scale of port operations:

Larger ports tend to have a more complex supply chain which builds the need for digital ways of working and communication as well as larger budgets to invest in the supporting ICT systems and infrastructure. Large scale containerization in a port poses challenges for which a multitude of digital solutions are available. For example, a Port Community System may provide a solution for large ports to communicate and coordinate with all its stakeholders and tenants.

A suitable high-level indicator for the scale of port operations is the throughput tonnage of the port.

5. General (national) drive for digital transformation:

A country committed to become a digital society might be more eager to adopt state-of-the art solutions than more developed, but also more traditional countries. Therefore, not only the scale and quality of the current digital infrastructure is important, but also the effort to continuously improve digital infrastructure and systems.

A suitable indicator for this drive for digital transformation is the progress in national connectivity, best represented by the annual growth of internet penetration in the country over the past decade. Other indicators for this barrier/enabler in the fact files are amongst others: Network Readiness Index and Principal Fiber Data Networks in project.

6. Port organization:

The digitalization of port operations is also dependent on the views of the ports' most influential parties in using digital tools and systems. Large international terminal operators often bring with them a global standard in the digitalization of port operations.

The port management model is therefore a suitable indicator to assess the port organization and the effects of privatization on digitalization in the port. The methodology used to determine the port management model is described in the below table.

Table 1: Methodology for the port management model

Type	Infrastructure	Superstructure	Operations	Other services
Public service port	Public	Public	Public	Public
Tool port	Public	Public	Private	Public/ Private
Landlord port	Public	Private	Private	Public/ Private
Private port	Private	Private	Private	Private

Note: The port management model is dependent upon the parts of the port that fall under responsibility of public institutions or private companies.

Guide for usage

In the fact files often the source and date of the indicator has been given. Two additional forms of information may be added to the sourcing here:

- **Region Avg.:**
If this is presented next to the indicator it means that the source could not provide the indicator for that specific country. In this case an average has been taken from all bordering countries for which data is available.
- **African Avg.:**
If this is presented next to a number/indicator it means that this indicator is an average of all African countries within the scope of the study.

If the source date of an indicator can vary due to availability, the source date is also indicated on the National Fact Files.

Table 2: Description of indicators of the National Fact Files

Indicator	Description
Country statistics	
Population	The size of the population can be an indication of the demand for goods and services and hence the size of the national supply chain. This excludes transshipment.
GDP	GDP is an indicator of the size and capability of the national economy as a whole.
GDP per Capita	GDP per Capita is an indicator of the economic prosperity in a country regardless of its size.
Human Capital Index	The index indicates how much capital each country loses through lack of education and health. Scale: 0-1.
International Trade	Indicates the importance of (international) trade for the country economy.
Export	Indicates how much is being exported from the nation's economy.
Export to African nations	Indicates how much export goes to neighbouring nations and can be an indication of the connection to landlocked countries.
Import	Indicates how much is being imported into the nation's economy.
Import from African nations	Indicates how much is imported from neighbouring nations and can be an indication of the connection to landlocked countries.
Global Competitiveness Index	This index captures the microeconomic and macroeconomic foundations of national competitiveness.
Port statistics	
Port model	The port model is an indicator of government responsibility in port operations and management and the level of privatization.
Trade volumes	This is an indicator of the scale of port operations.
Vessels handled	This is an indicator of the scale of port operations.
ICT infrastructure	
Network Readiness Index	Indicates the degree of readiness of countries to exploit opportunities offered by ICT. Scale 0-100.
Global Cybersecurity Index	Indicates the nations commitment to cybersecurity. Scale: 0-100.
AIDI:ICT	The Africa Infrastructure Development Index for ICT of the Africa Development Bank measures the status and development of ICT infrastructure: Scale 0-100.
Internet penetration	Indicates the scale of ICT supporting connectivity and the growth of internet penetration also indicates the growth/investment in this connectivity.
Data centers	Indicates the data hosting capabilities of the country.
Cloud hosting centers	This indicates the supporting infrastructure for the use of cloud hosted infrastructure and services in the country.

Institutional Framework	
OECD: Trade facilitation indicator	Indicates the quality of procedures and controls governing the movement of goods across national borders at preferably low cost and high efficiency while safeguarding legitimate regulatory objectives. The stance of government and its agencies plays a large role in this. Scale for countries within the scope: 0-20.
Internet censorship effort	This indicator presents the effort and attempts of the government to censor information on the internet. 0 is the worldwide average, higher than 0 indicates stronger electoral principles of democracy while lower indicates more attempts of the government to censor information.
Country Policy and Institutional Assessment (CPIA)	This is an indicator of the quality of policies and institutions in a country. Scale: 0-5.

Ivory Coast

Country statistics

Population (millions):	27.5	International trade: 45% of GDP	Global Competitiveness Index:
GDP (2021):	US\$ 71.8 mn	Export: US\$ 15.9 billion	48.1
GDP per capita (2021):	US\$ 2,613.4	Where 4.0 % goes to African Nations	WCF, 2019
Human Capital Index (2020):	0.4	Import: US\$ 17.7 billion	
		Where 36.3 % is from African Nations	

National economic and trade statistics

Port statistics: Throughputs, vessel handling and its management model

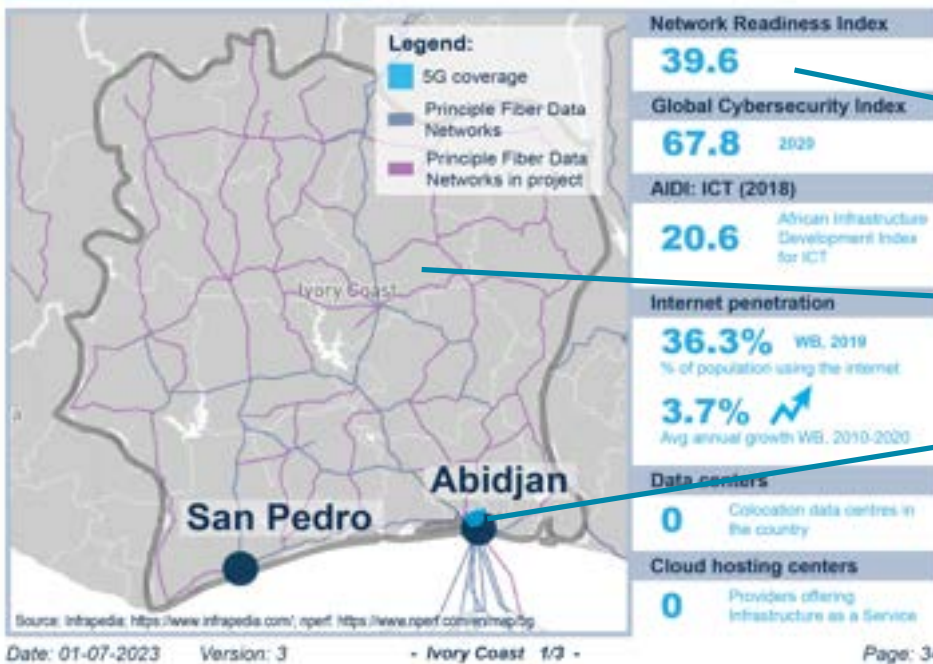
Port statistics

	Abidjan	San Pedro	
Port model:	Tool/Landlord Port	Tool/Landlord Port	Port authorities:
Trade volumes:	25,700	4,000	Abidjan: Port Autonome D'Abidjan
	730	250	San Pedro: Port Autonome De San Pedro
			Maritime authority:
Vessels handled:	5,000	400	Directorate of Maritime and Port Affairs

Port authorities per port. If it is the same for all ports only one PA will be given.

Maritime authority for this country

National ICT infrastructure



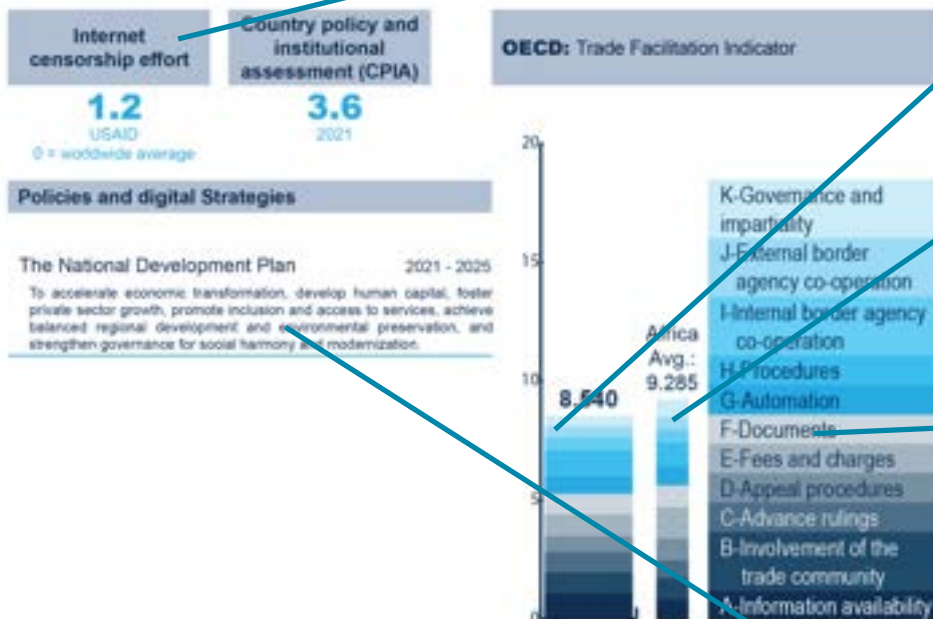
ICT infrastructure indicators with additional information on the source or indicator on the right.

Image indicating the port locations, national principle fiber optics and 5G coverage.

5G coverage is in blue

Figure 1: Guide-for-usage, page 1

Institutional Framework



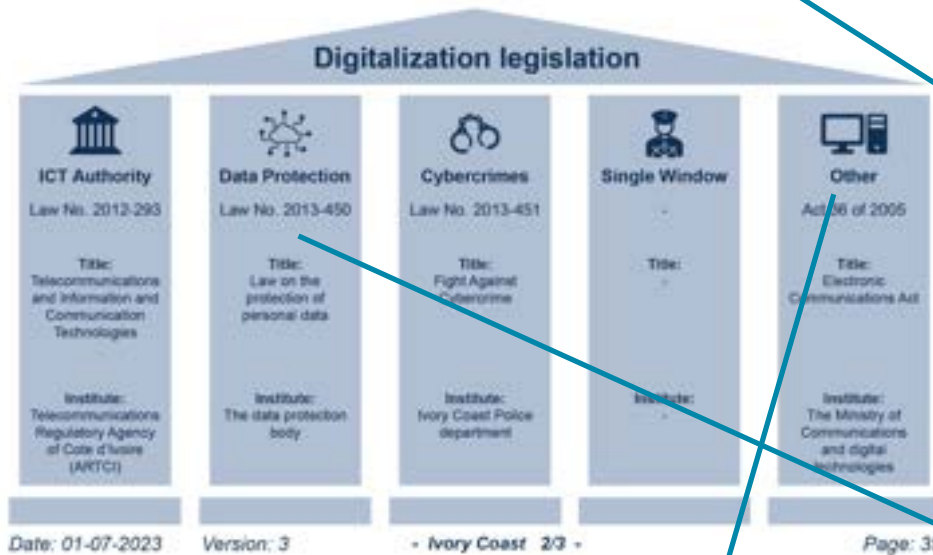
Governmental censorship of internet and online information. 0 is worldwide average, higher indicates stronger electoral principles of democracy.

Distribution of the OECD facilitation indicator score.

Distribution of OECD score averaged over all countries within the scope of this study.

Legend: Each OECD trade facilitation indicator section is indicated with a color and the name of this section is written inside this colorbar.

Policies and strategies related to digitalization in the country, that have been found in the institutional framework desk study are listed here. Next to the name the timeframe of the policy is indicated. Below a short summary of the (digitalization related) goals is written.



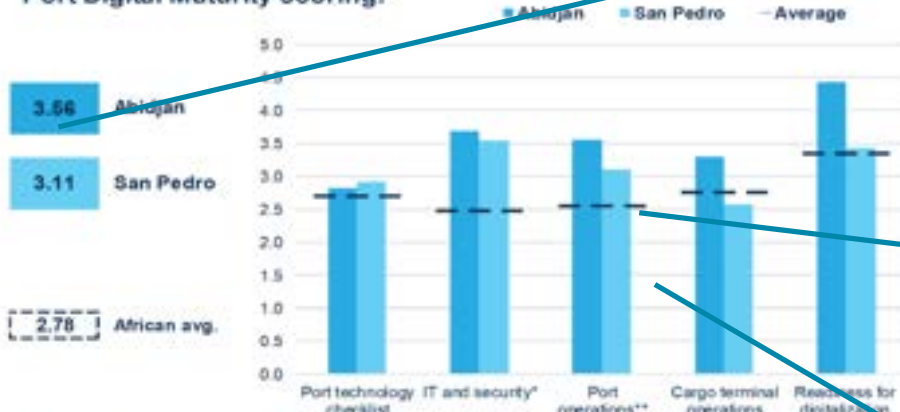
Laws that do not fall within the 4 categories but are deemed important for digitalization are given here. This is also a summary from the institutional framework.

This is a summary from the institutional framework. 4 categories of laws related to digitalization are presented here with reference number, title and institute responsible for its implementation and/or supervision.

Figure 2: Guide-for-usage, page 2

Port IT systems and services

Port Digital Maturity scoring:



National ports that are within the scope of the study. The total (average) digital maturity score for each port is indicated within the square. The color of the square indicates the color for that port in the bar charts.

The dashed line in the bar charts indicates the average score for all ports in the study for that specific category.

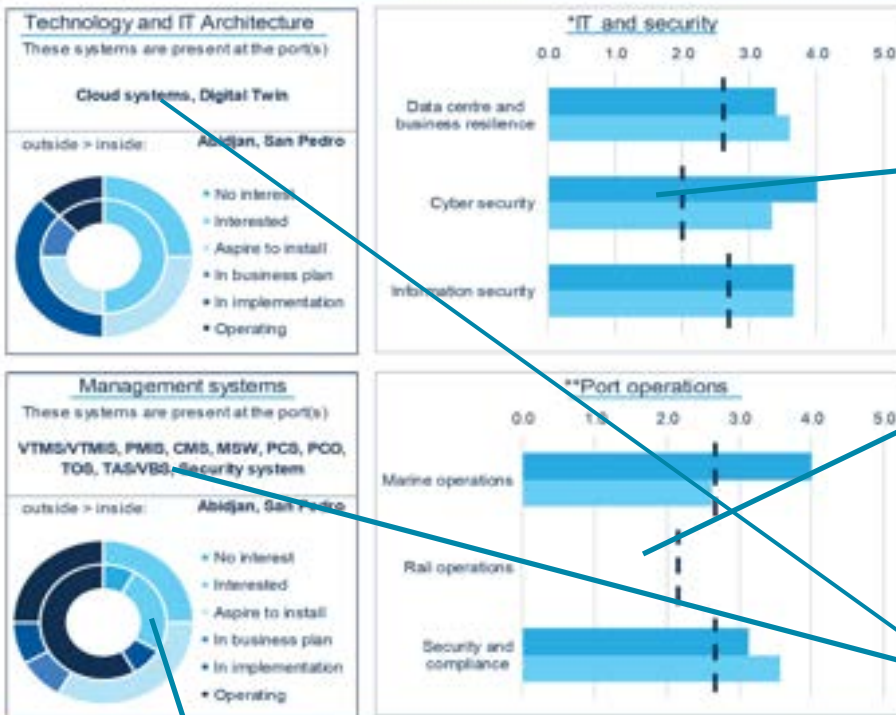
The scores for the 5 main categories.

Category 2: IT and security has 3 subcategories, these are indicated here

Category 3: port operations has 3 subcategories, these are indicated here. Often rail operations are non applicable, in that case nothing is presented there.

Systems that are operating in either of the ports are presented here.

Port Maturity breakdown:



This chart presents the distribution of the stage of development of systems in the port (not interested, aspiring, in implementation, operating, etc.). The distribution of the first port (in this case Abidjan) is presented on the outside and the second port (San Pedro) on the inside.

Figure 3: Guide-for-usage, page 3

NATIONAL FACT FILES



Angola

Country statistics

Population (millions):	34.5
GDP (2021):	US\$ 65.7 bn
GDP per capita (2021):	US\$ 1,903.7
Human Capital Index (2020):	0.4

International trade: **62% of GDP**

Export: **US\$ 33.7 billion**
Where 0.4% goes to African Nations

Import: **US\$ 18.8 billion**
Where 4.3% is from African Nations

Global Competitiveness Index:

38.1

WEF, 2019

Port statistics

	Luanda	
Port model:	Tool Port	
Trade volumes:	12,000K 650K	Tonnes TEU
Vessels handled:	3,500	per annum

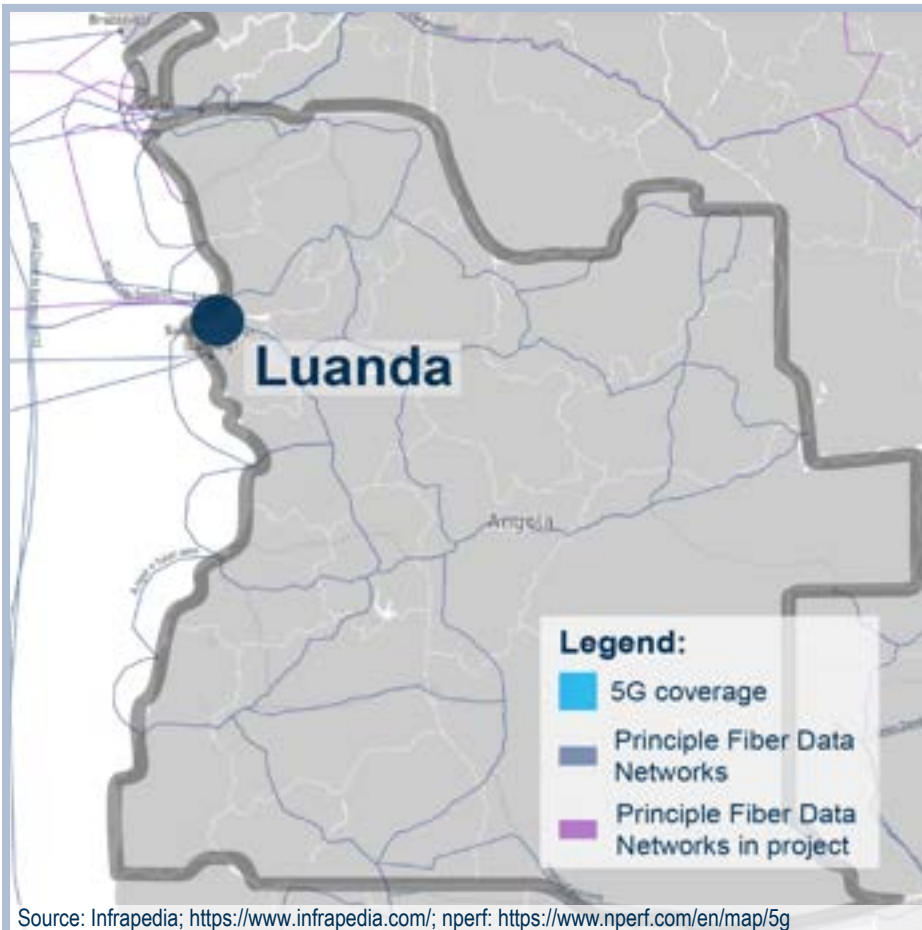
Port authorities:

Luanda Empresa Portuaria de Luanda (EPL)

Maritime authority:

Instituto Maritmo e Portuario de Angola (IMPA)

National ICT infrastructure



Network Readiness Index

27.4

Global Cybersecurity Index

13.0 2020

AIDI: ICT (2018)

11.8 African Infrastructure Development Index for ICT

Internet penetration

36.0% WB, 2020
% of population using the internet

3.3%
Avg annual growth WB, 2010-2020

Data centers

7 Colocation data centres in the country

Cloud hosting centers

1 Providers offering Infrastructure as a Service

Institutional Framework

Internet censorship effort

0.4

USAID, 0 = worldwide average

Country policy and institutional assessment (CPIA)

3.1

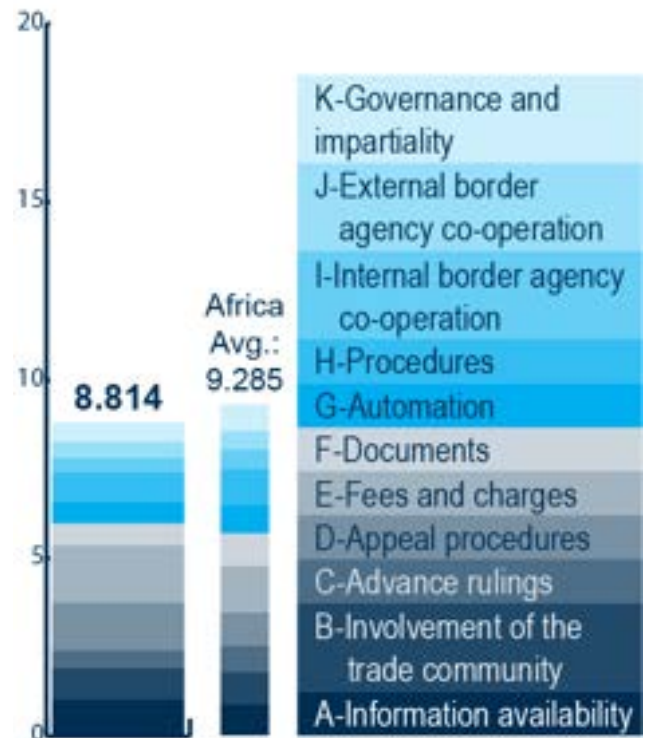
2021, Region avg.

OECD: Trade Facilitation Indicator

Policies and digital Strategies

National Development Plan: on Information and Communication Technology 2018 - 2022

The goals are to enhance ICT infrastructure and services, promote efficient public services, develop a skilled workforce, foster an innovative ICT industry, and strengthen cybersecurity measures in Angola.



Digitalization legislation



ICT Authority

-

Title:
-

Institute:
-



Data Protection

Law No. 22/1

Title:
On the Protection of Personal Data

Institute:
The Ministry of Telecommunications and Information Technology ('MTTI')



Cybercrimes

Law, No. 7/17

Title:
Protection of Information Systems and Networks Law (Protecção das Redes e Sistemas Informáticos)

Institute:
Ministry of Telecommunications and Information Technologies



Single Window

-

Title:
-

Institute:
-



Other

-

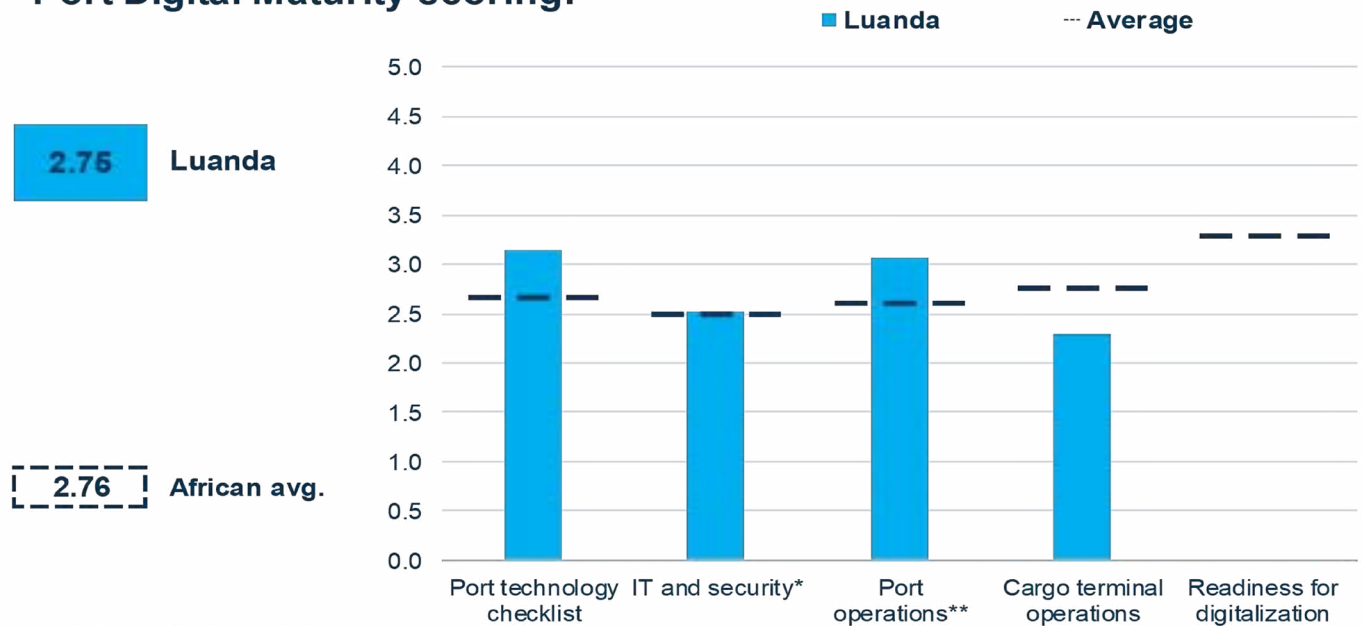
Title:
-

Institute:
-

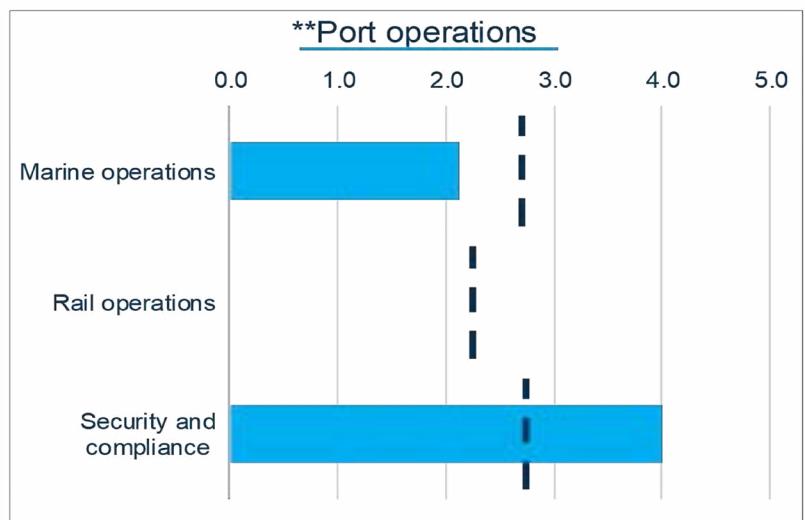
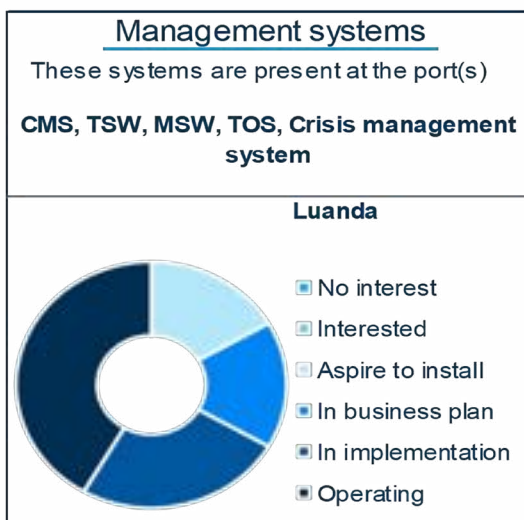
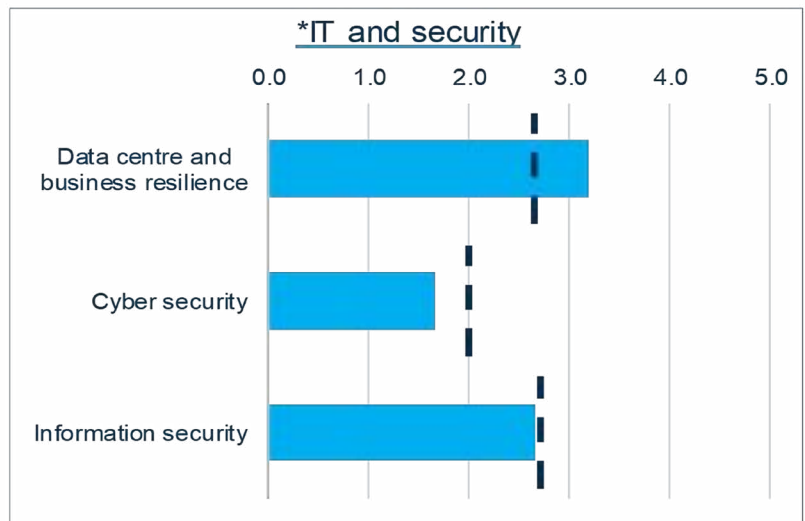
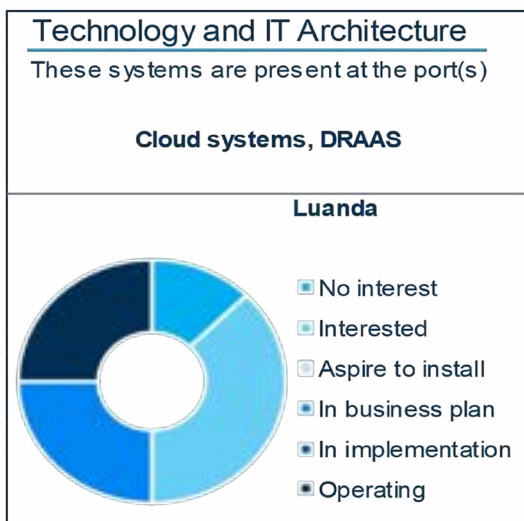
Port IT systems and services

Note; Data is not obtained from an interview but from desktop research and expert judgement

Port Digital Maturity scoring:



Port Maturity breakdown:



Cabo Verde

Country statistics

Population (millions):	0.6
GDP (2021):	US\$ 2.1 bn
GDP per capita (2021):	US\$ 3,557.8
Human Capital Index (2020):	

International trade: **77% of GDP**

Export: **US\$ 0.3 billion**
Where 2.8% goes to African Nations

Import: **US\$ 1.0 billion**
Where 0.8% is from African Nations

Global Competitiveness Index:

50.8

WEF, 2019

Port statistics

Praia		
Port model:	Public Service Port	
Trade volumes:	400K	Tonnes
	27K	TEU
Vessels handled:	1,135	per annum

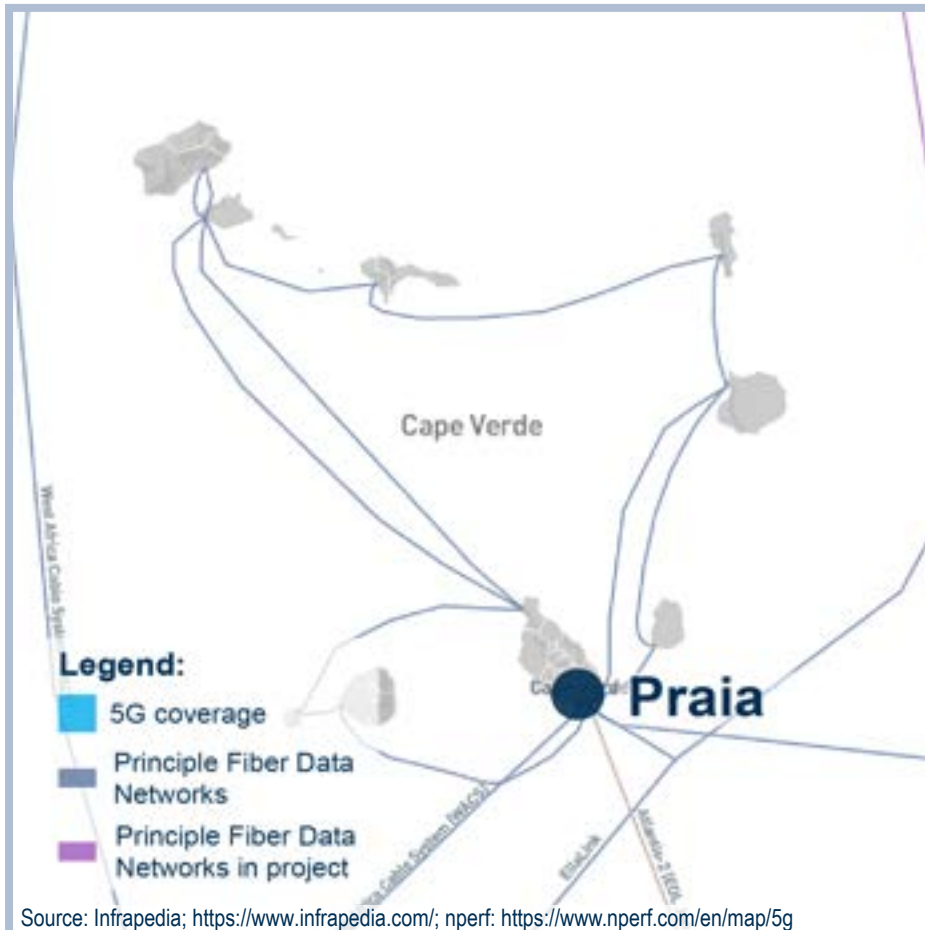
Port authorities:

Praia ENAPOR

Maritime authority:

Cape Verde Maritime Administration/The Instituto Marítimo Portuário (IMP)

National ICT infrastructure



Network Readiness Index

41.7

Global Cybersecurity Index

17.7 2020

AIDI: ICT (2018)

25.3 African Infrastructure Development Index for ICT

Internet penetration

64.5% WB, 2020
% of population using the internet

3.5%
Avg annual growth WB, 2010-2020

Data centers

0 Colocation data centres in the country

Cloud hosting centers

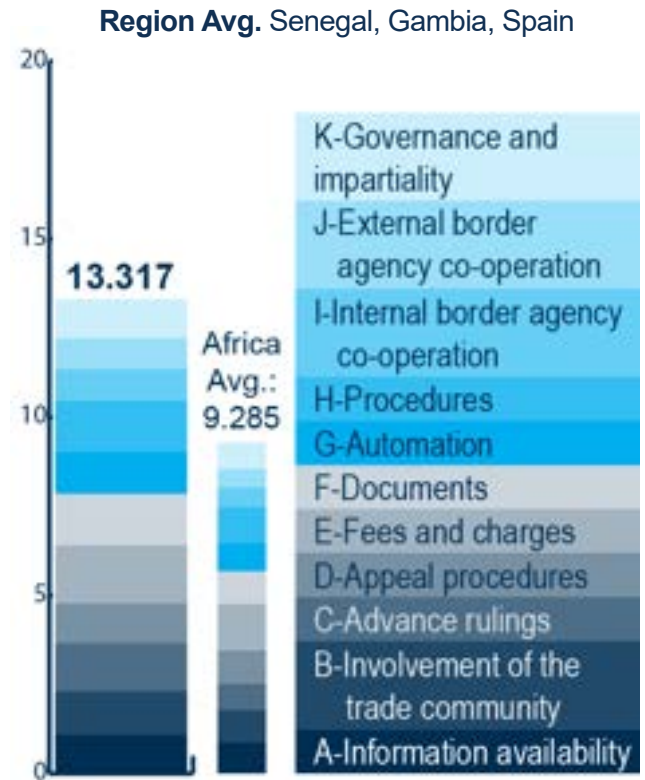
0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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2.0
USAID, 0 = worldwide average

3.8
2021



Policies and digital Strategies

Strategy for the Digital Governance of Cape Verde 2021 - 2024

The objectives encompass digital public services, streamlined processes, information access, interaction, infrastructure and security, technology, legislation, digital literacy, and good governance for the State's digital transformation.






The Strategic Programme for the Information Society 2005 -

A government close to the citizens and empower innovation, governance, quality of life, and economic opportunities through six pillars focusing on accessibility, empowerment, governance, and context, which include stimulating, investing, leadership, and measurement.

National Cybersecurity Strategy 2016 -

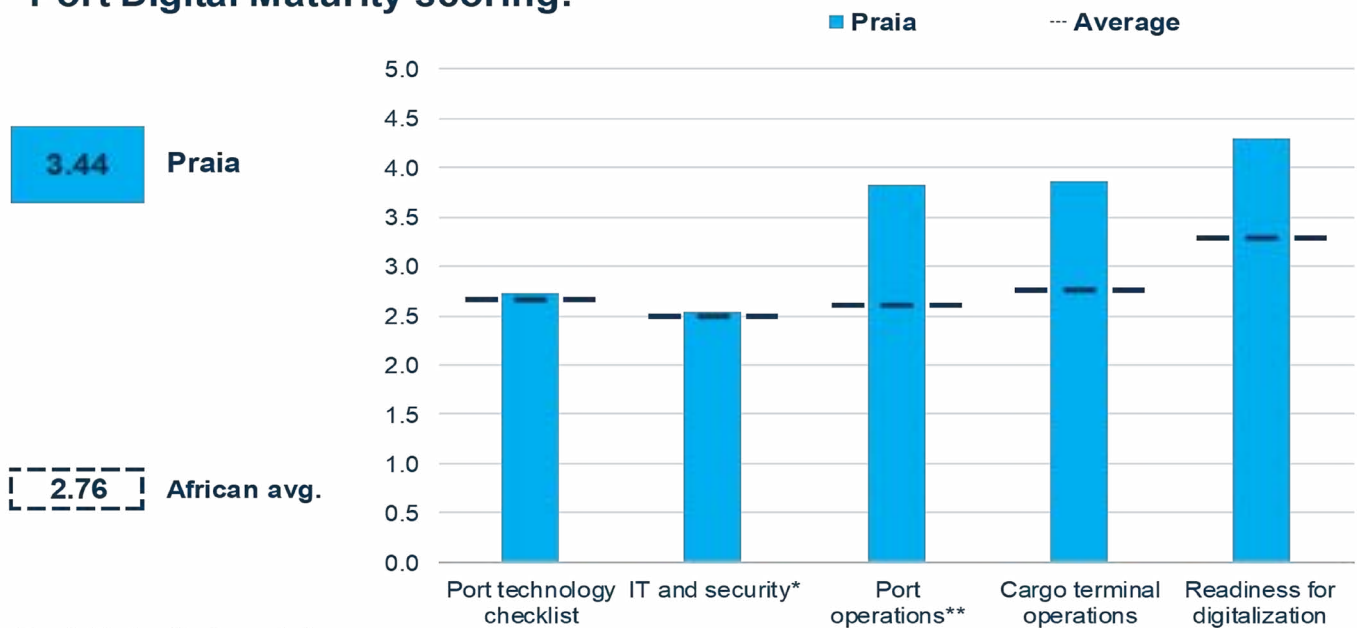
Aims to safeguard information systems and networks from cyber threats through a comprehensive framework for governance, risk management, and incident response.

Digitalization legislation

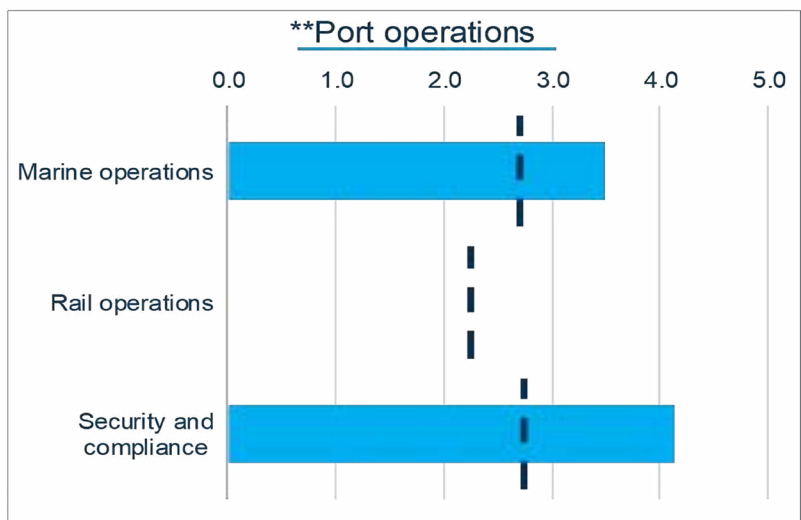
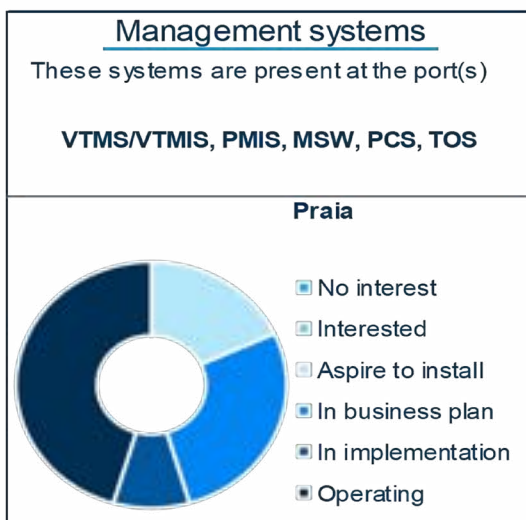
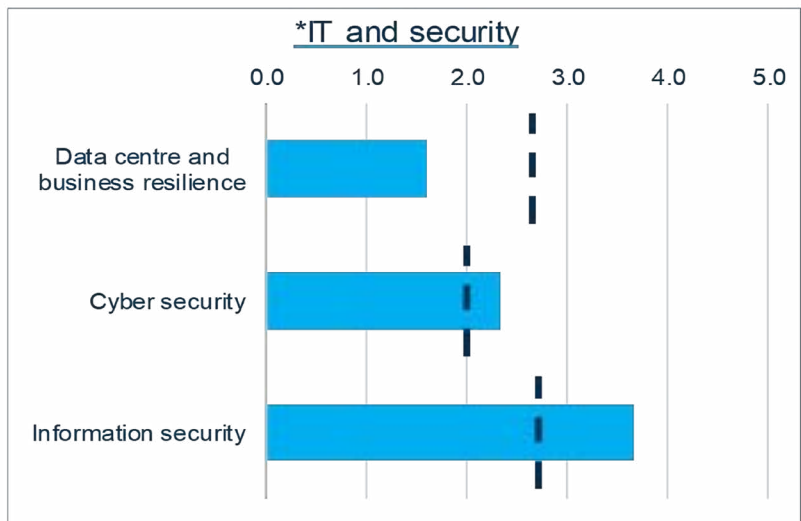
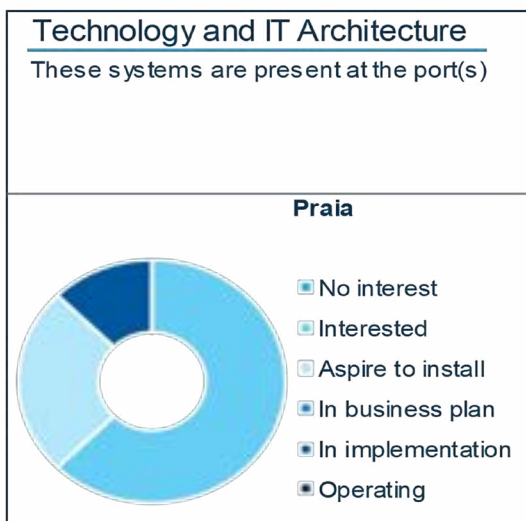
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Law No. 17/ VIII/2019 Title: Electronic Communications Law Institute: National Regulatory Authority	 Law No. 133/V/2001 Title: On the Protection of Personal Data Institute: National Commission of Data Protection ('CNPD')	 Law No. 8/ IX/2017 Title: Law on Cybercrime Institute: Polícia Nacional de Cabo Verde (National Police of Cape Verde)	 - Title: - Institute: -	 - Title: - Institute: -

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Cameroon

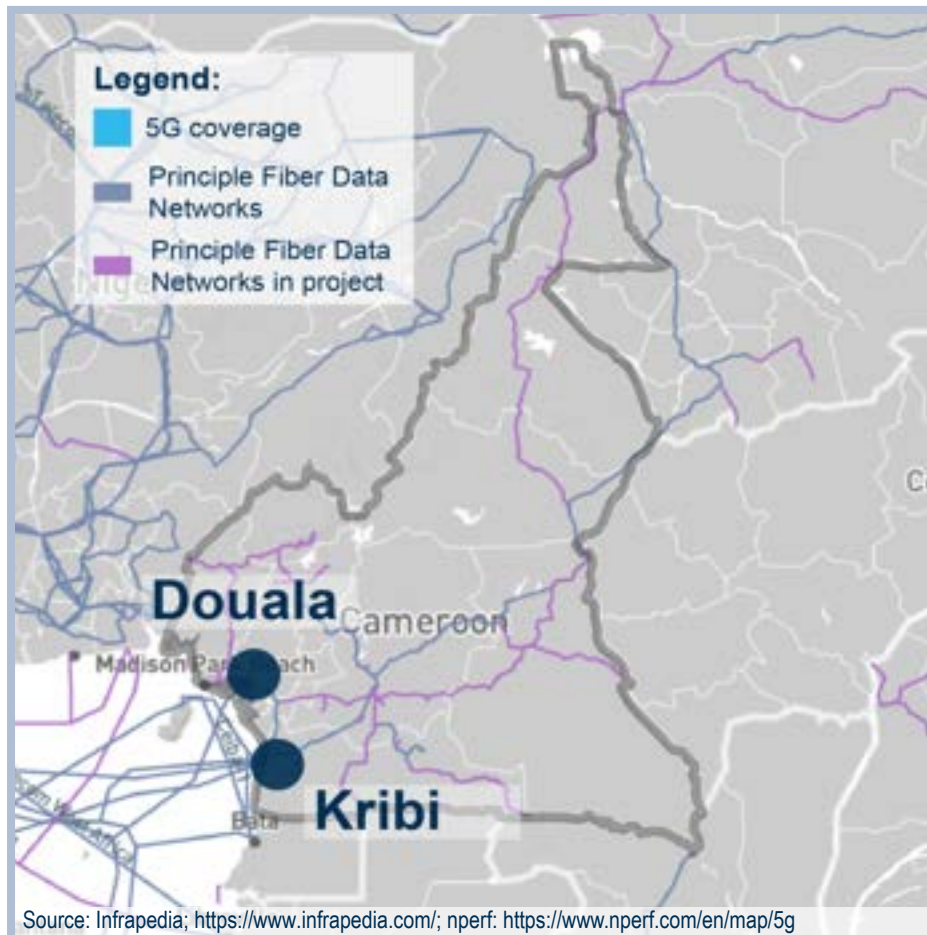
Country statistics

Population (millions):	27.2	International trade: 37% of GDP	Global Competitiveness Index: 46.0 WEF, 2019
GDP (2021):	US\$ 45.3 bn	Export: US\$ 4.1 billion Where 0.8% goes to African Nations	
GDP per capita (2021):	US\$ 1,666.9	Import: US\$ 6.1 billion Where 8.2% is from African Nations	
Human Capital Index (2020):	0.4		

Port statistics

	Douala	Kribi		Port authorities:
Port model:	Landlord Port	Landlord Port		Douala: Port Autonome de Douala Kribi: Port Autonome de Kribi
Trade volumes:	11,800K	150K	Tonnes	
	380K	240K	TEU	
Vessels handled:	3,300	250	per annum	Maritime authority: Directorate of Maritime Affairs and inland waterways

National ICT infrastructure



Network Readiness Index	33.7
Global Cybersecurity Index	45.6 2020
AIDI: ICT (2018)	21.5 African Infrastructure Development Index for ICT
Internet penetration	37.8% WB, 2020 % of population using the internet
	3.4% ↗ Avg annual growth WB, 2010-2020
Data centers	1 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
--	--	--

-0.7

USAID, 0 = worldwide average

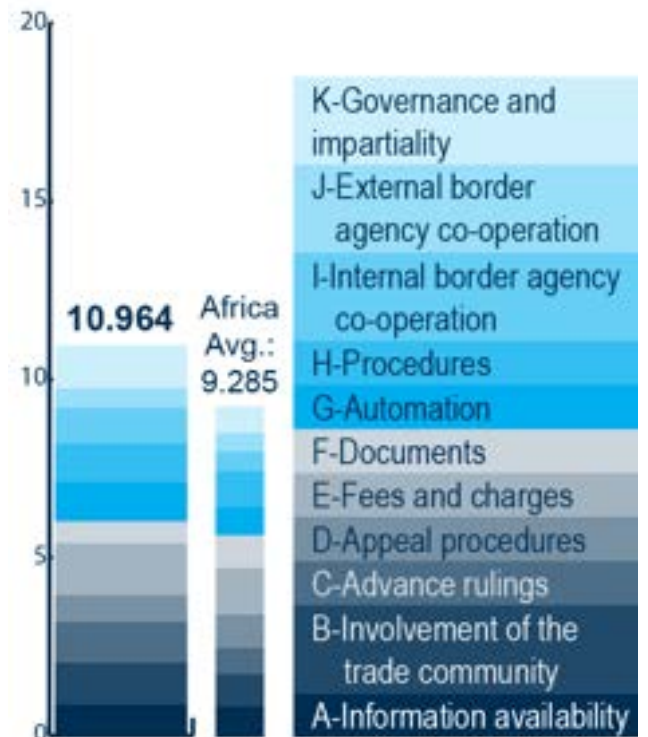
3.3

2021

Policies and digital Strategies

Cameroon Digital 2020 2015 - 2020

Aims to drive digital development, fight poverty, and boost economic growth through cross-cutting actions like governance improvement, human capital strengthening, and adequate financial resources.



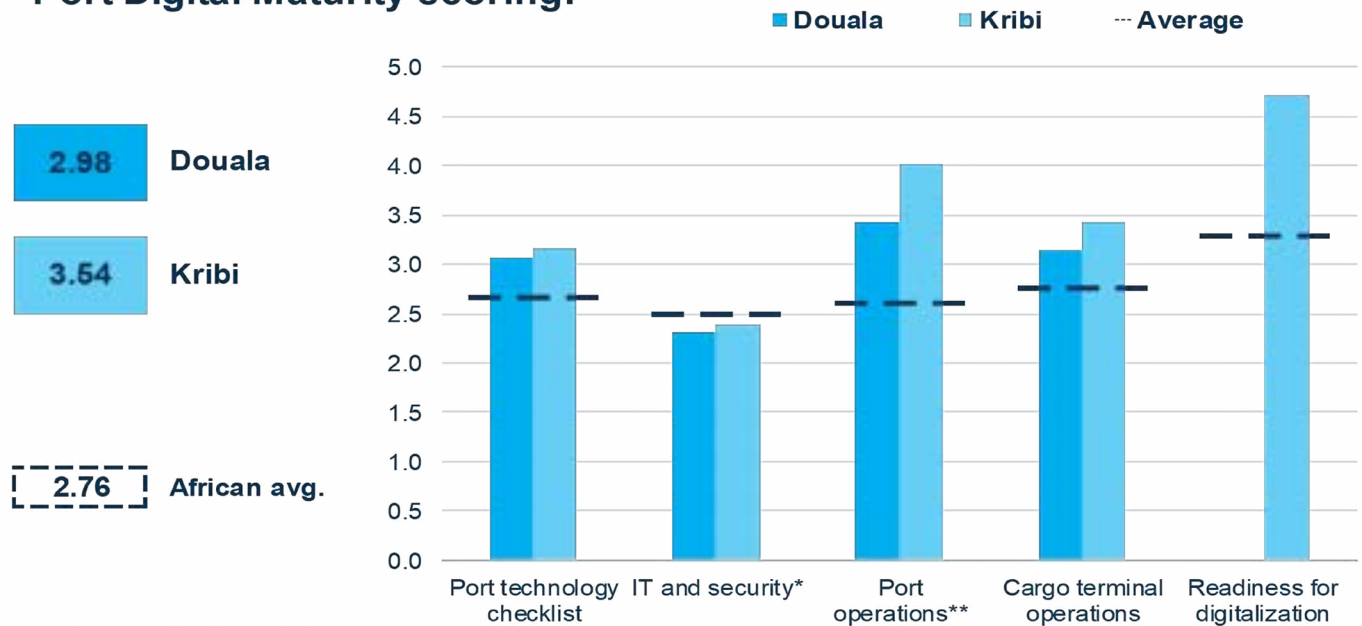
Digitalization legislation

ICT Authority	Data Protection	Cybercrimes	Single Window	Other
<p>Law No. 2010/013</p> <p>Title: Governing electronic communications</p> <p>Institute: Telecommunications Regulatory Agency (ART)</p>	<p>-</p> <p>Title: -</p> <p>Institute: -</p>	<p>Law No. 2010/012</p> <p>Title: On Cybersecurity and Cybercrime</p> <p>Institute: Ministry of Posts and Telecommunications (MINPOSTEL)</p>	<p>-</p> <p>Title: -</p> <p>Institute: -</p>	<p>-</p> <p>Title: -</p> <p>Institute: -</p>

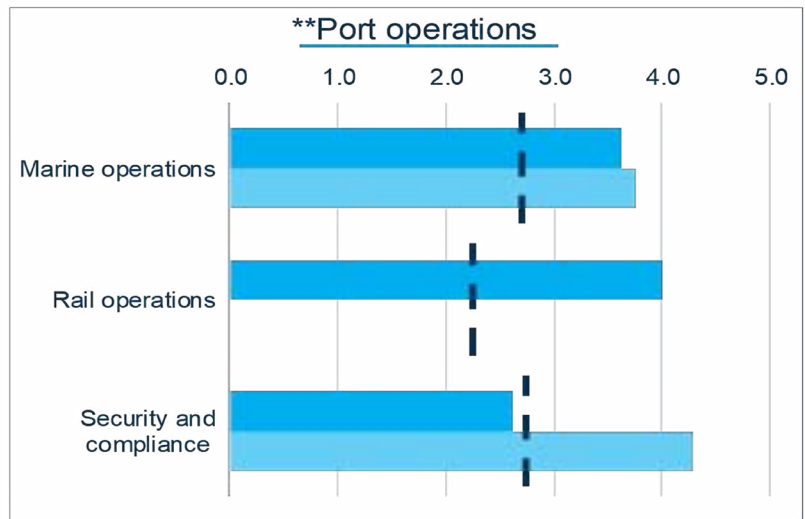
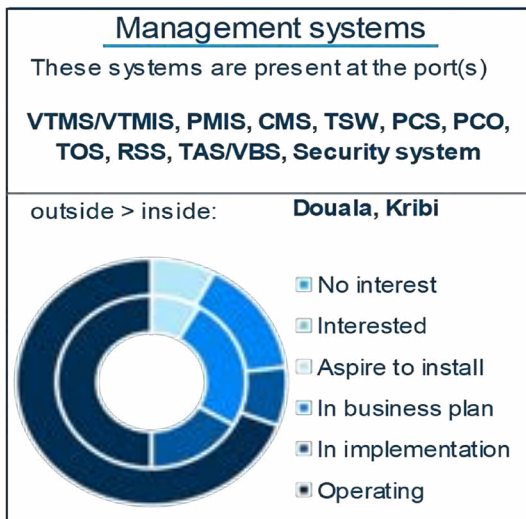
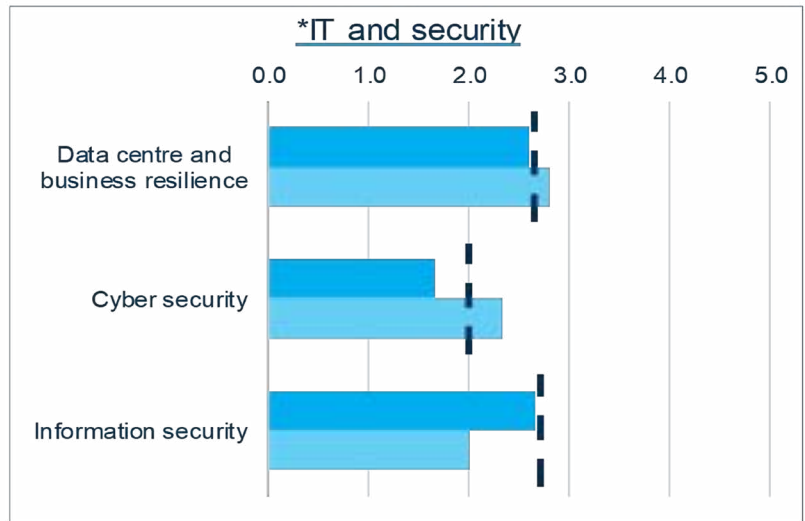
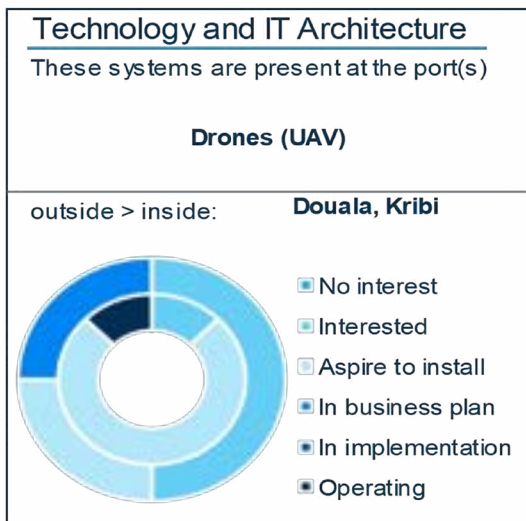
Port IT systems and services

Note; Data for Douala is not obtained from an interview but from desktop research and expert judgement

Port Digital Maturity scoring:



Port Maturity breakdown:



Comoros

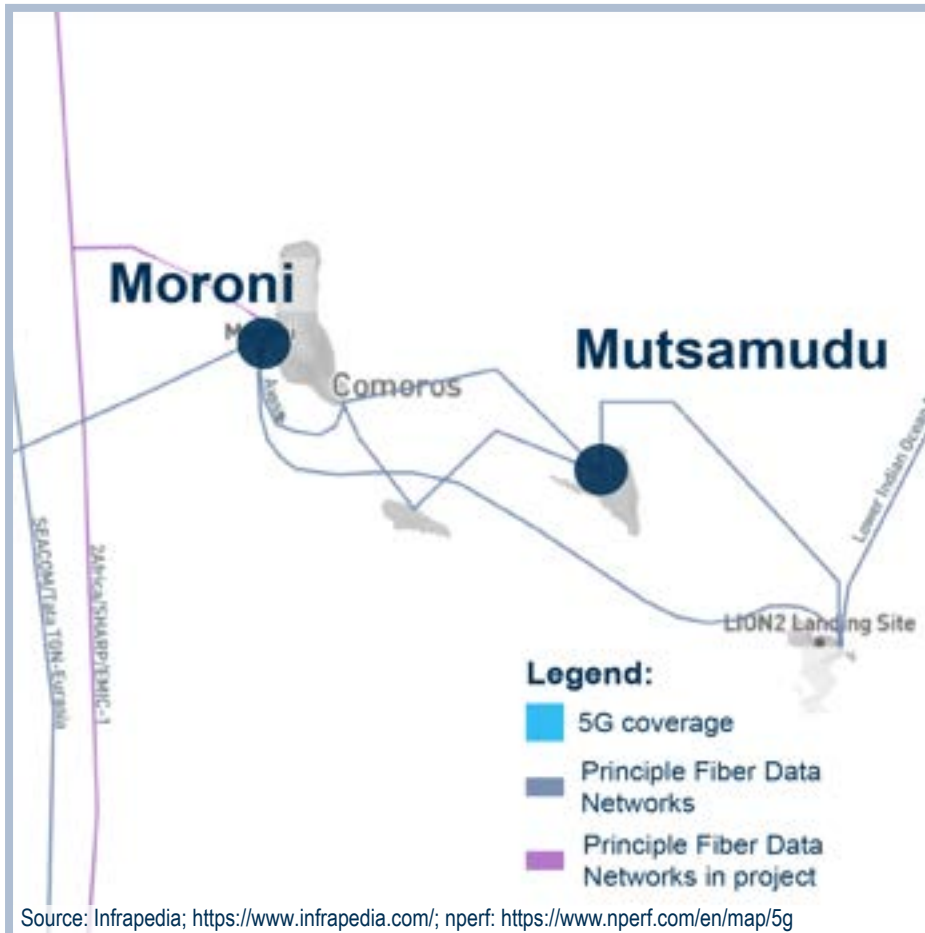
Country statistics

Population (millions):	0.8	International trade: 42% of GDP	Global Competitiveness Index: 43.1 Region avg., 2019
GDP (2021):	US\$ 1.3 bn	Export: US\$ 0.1 billion Where 3.3% goes to African Nations	
GDP per capita (2021):	US\$ 1,577.5	Import: US\$ 0.4 billion Where 8.1% is from African Nations	
Human Capital Index (2020):	0.4		

Port statistics

	Moroni	Mutsamudu		Port authorities:
Port model:	Landlord Port	Landlord Port		Moroni: Société Comorien des Ports (SCP)
Trade volumes:	270K	1,600K	Tonnes	Mutsamudu
	18.5K	35K	TEU	
Vessels handled:	70	125	per annum	Maritime authority: National Agency of Maritime Affairs (ANAM)

National ICT infrastructure



Network Readiness Index	32.2 Region avg.
Global Cybersecurity Index	3.7 2020
AIDI: ICT (2018)	9.0 African Infrastructure Development Index for ICT
Internet penetration	8.5% WB, 2017 % of population using the internet
	0.5% ↑ Avg annual growth WB, 2010-2020
Data centers	0 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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0.8
USAID, 0 = worldwide average

2.7
2021

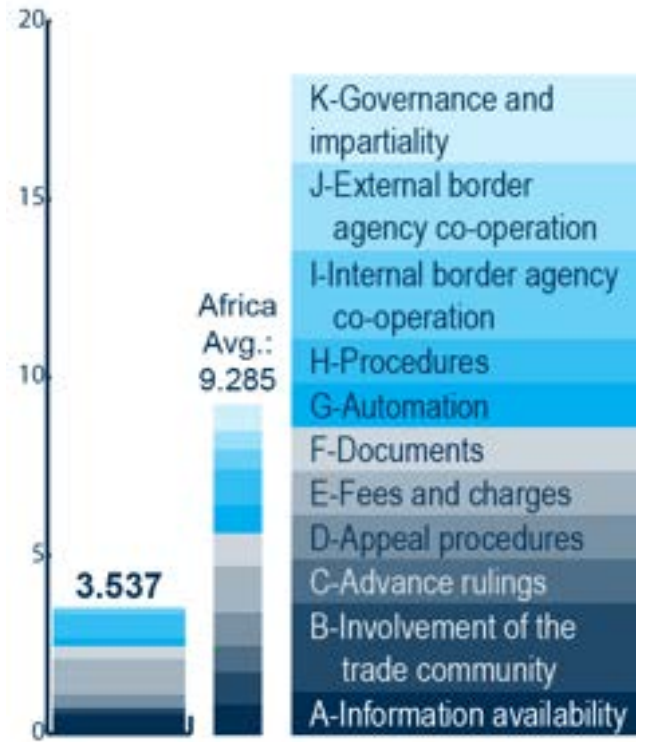
Policies and digital Strategies

Comoros Emerging Plan 2020 - 2030






The goal is for Comoros to become a hub for financial and logistical services, develop a strong industrial sector, promote ICT usage, and drive the digital revolution for economic growth and social transformation.

Comoros Digital Strategy 2028 2018 - 2028

To strengthen human capital, enhance the legal framework, ensure national cybersecurity, expand broadband coverage, improve digital services, and develop the ICT sector in Comoros.

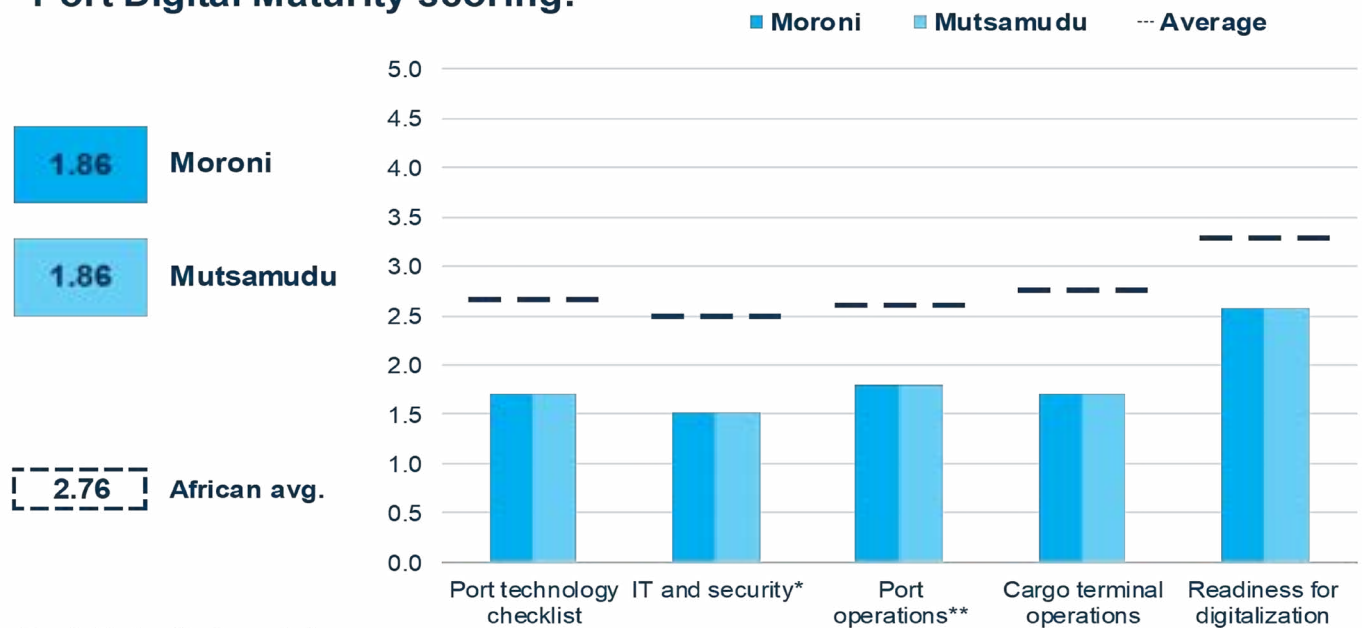


Digitalization legislation

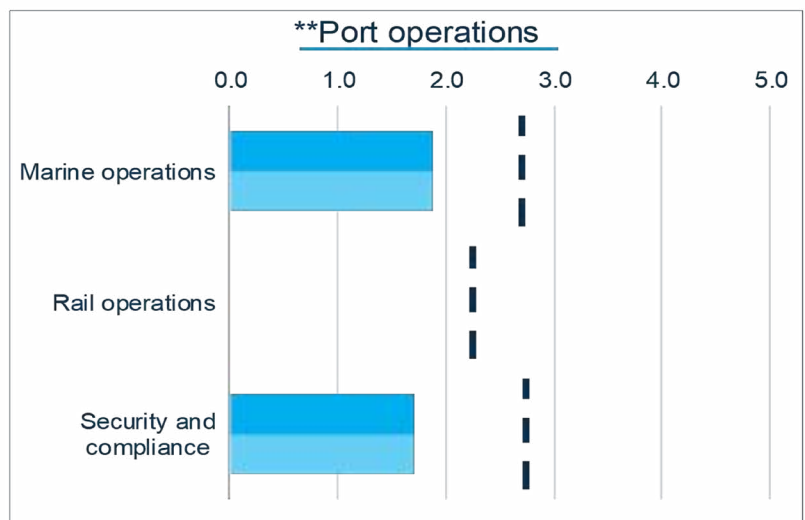
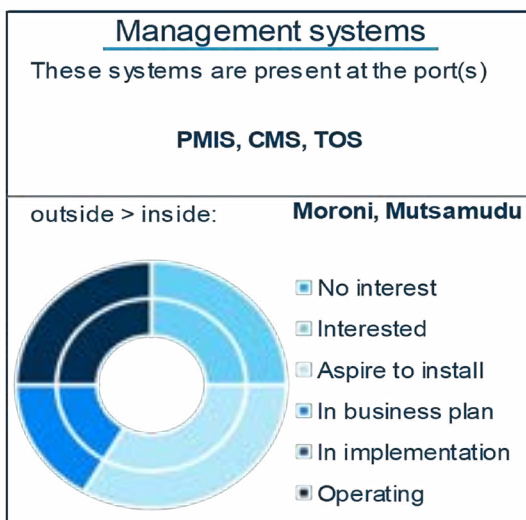
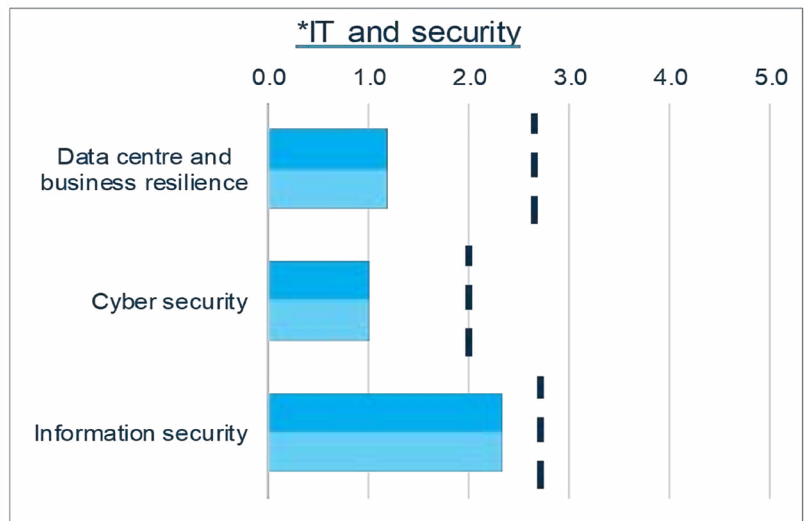
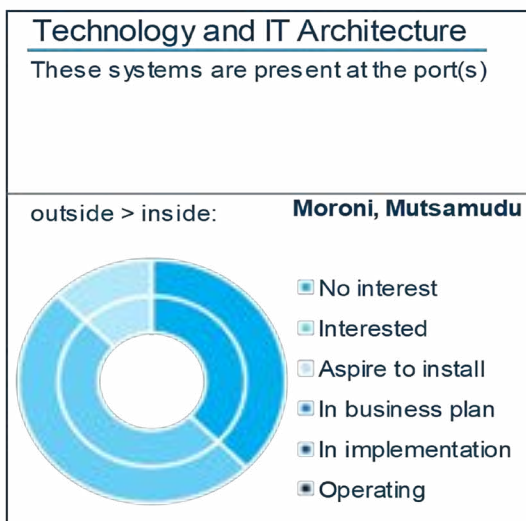
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Law No. 19-014 / PR Title: On the creation, organization and functioning of the National Agency for Digital Development Institute: Anaden – agence Nationale de développement du numérique	 Law No. 14-029/ AU Title: On the protection of personal data Institute: Anaden	 Law No. 22-003/ PR Title: On Cyber Security and Cybercrime Institute: Anaden	 - Title: - Institute: -	 Law No. 22-003/ PR Title: On online payment services and online services Institute: Anaden

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Congo, DR

Country statistics

Population (millions):	95.9
GDP (2021):	US\$ 55.4 bn
GDP per capita (2021):	US\$ 577.2
Human Capital Index (2020):	0.4

International trade: **80% of GDP**

Export: **US\$ 23.5 billion**
Where 22.1% goes to African Nations

Import: **US\$ 10.3 billion**
Where 43.6% is from African Nations

Global Competitiveness Index:

36.1

WEF, 2019

Port statistics

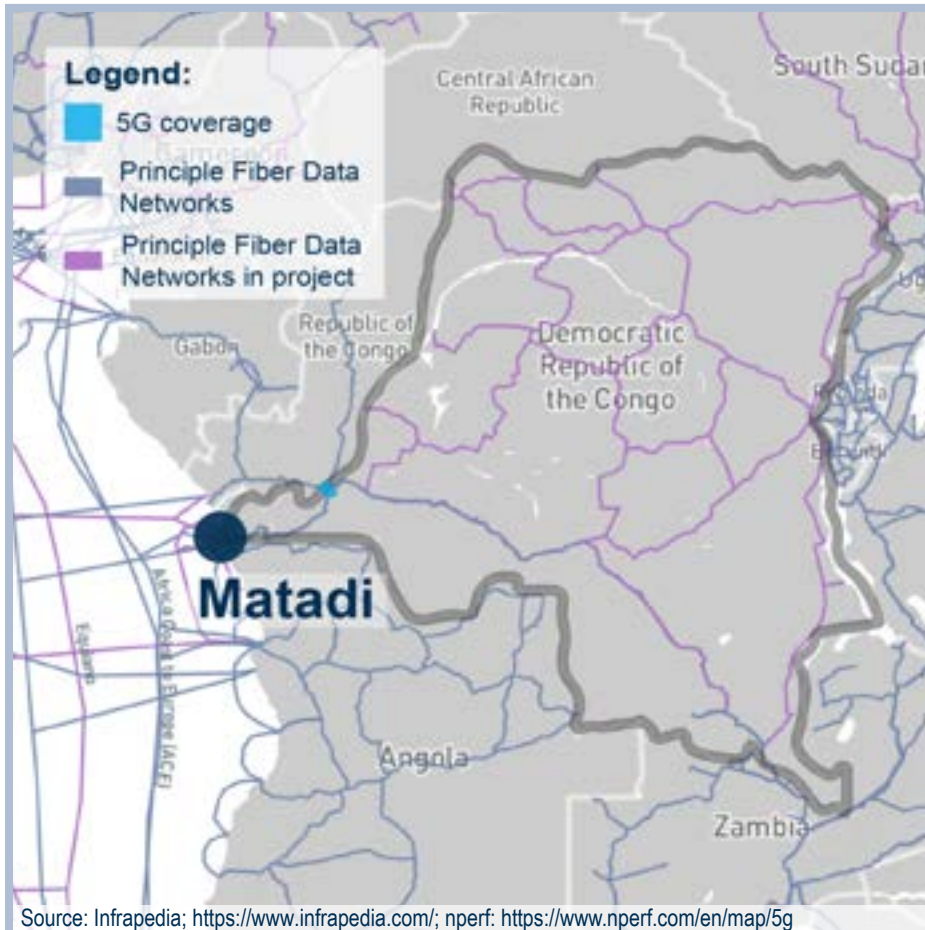
Matadi		
Port model:	Public Service/Tool Port	
Trade volumes:	3,000K	Tonnes
	73K	TEU
Vessels handled:	400	per annum

Port authorities:

Matadi Société commerciale des transports et des ports (SCTP)

Maritime authority:

National ICT infrastructure



Network Readiness Index

23.3

Global Cybersecurity Index

5.3 2020

AIDI: ICT (2018)

7.0 African Infrastructure Development Index for ICT

Internet penetration

13.6% WB, 2020
% of population using the internet

1.3%
Avg annual growth WB, 2010-2020

Data centers

1 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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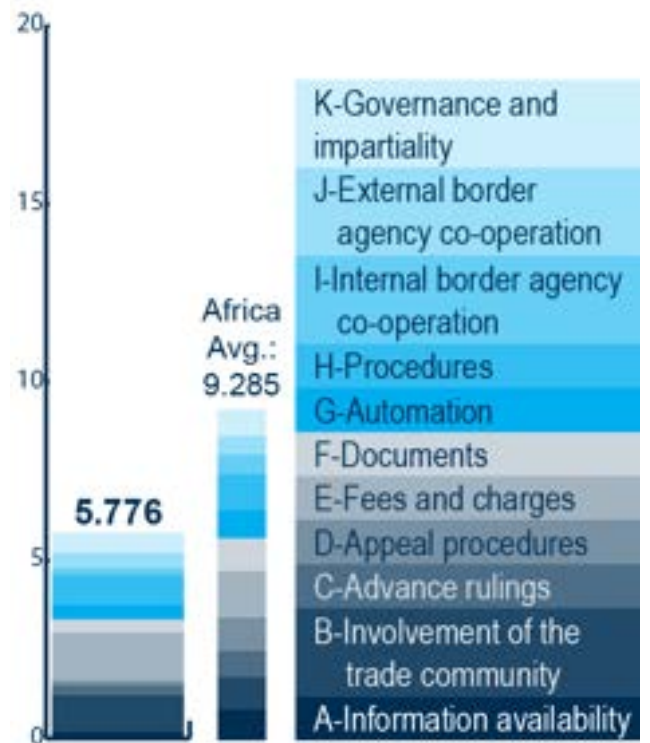
0.1
USAID, 0 = worldwide average

3.0
2021

Policies and digital Strategies

National Digital Plan 2020 - 2025
To establish and modernize infrastructure, extend telecom coverage, secure digital content access, drive digital transformation, operate fintech platforms, enhance human capital, promote national content, monitor technological progress, and advance digital promotion through public policies.

National Strategic Development Plan (PNSD) 2015 - 2050
The objectives include expanding access to digital networks and services, fostering production and supply of digital tools, diversifying digital uses and services, developing the local digital industry, building human capital, and establishing digital trust.

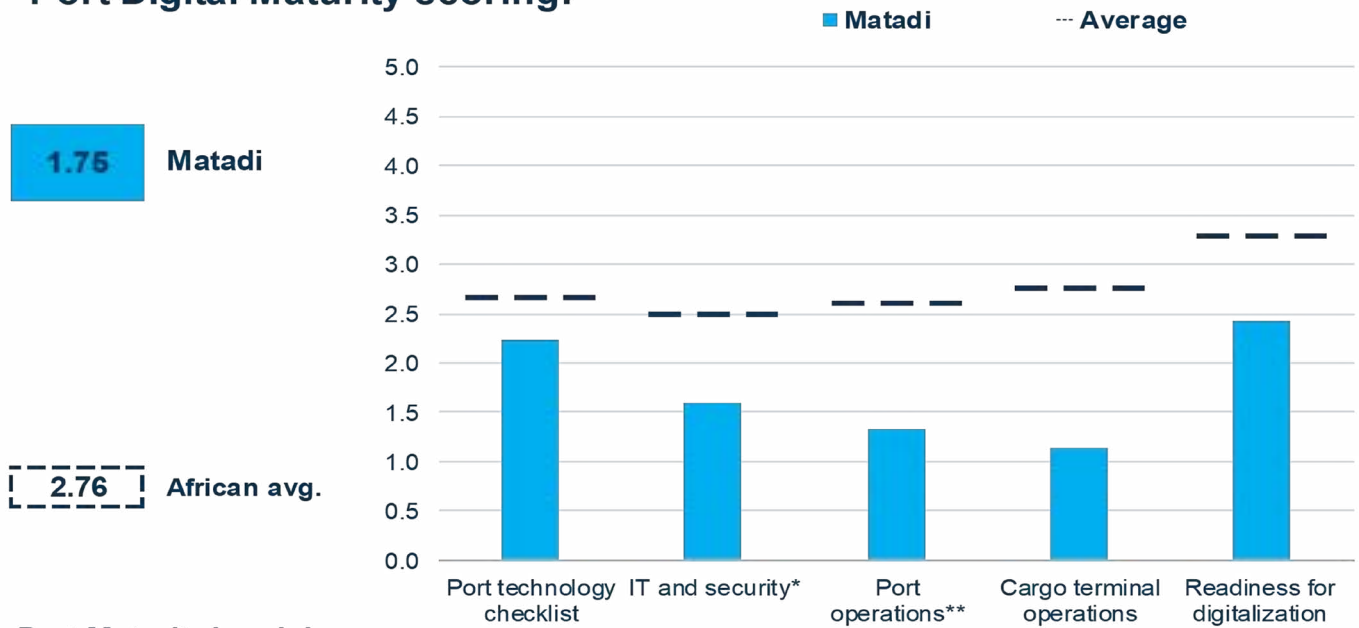


Digitalization legislation

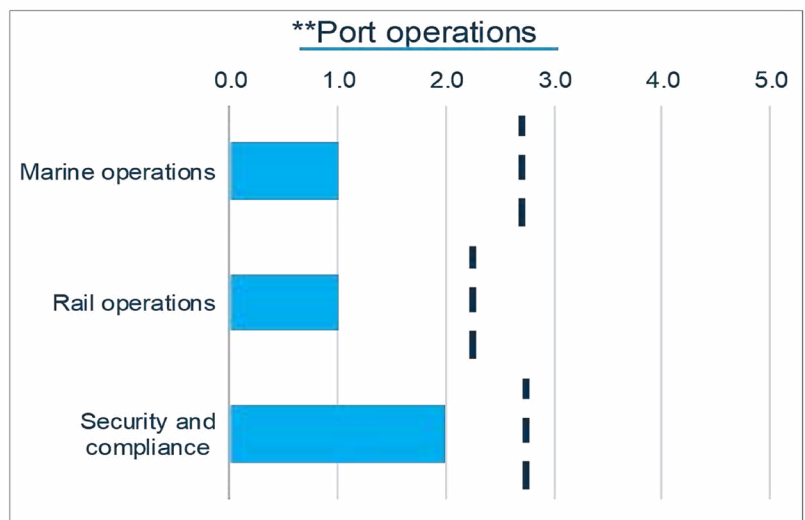
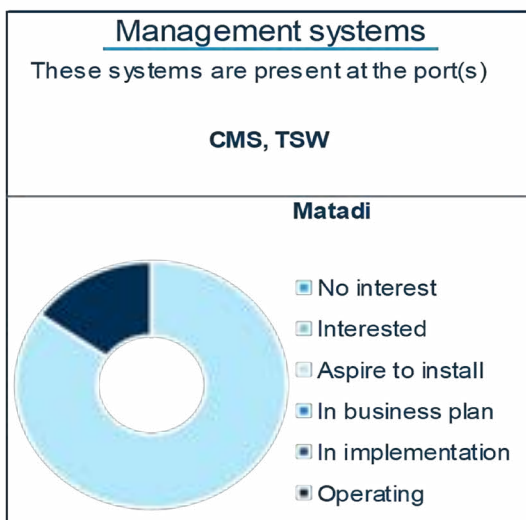
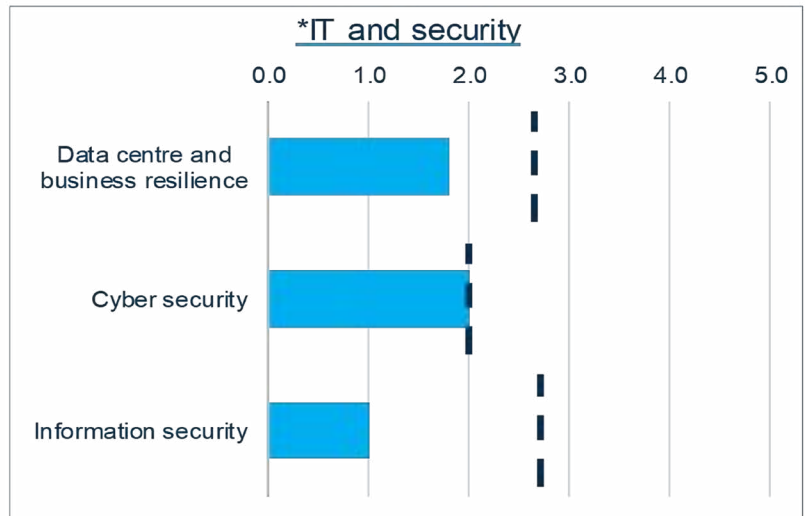
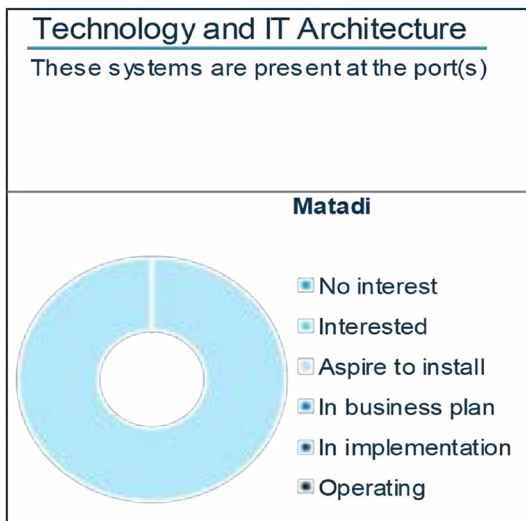
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
Law No. 013-2002	-	Law No. 23/010	-	Law No. 23/010
Title: On Telecommunications in DRC	Title: -	Title: On the digital code	Title: -	Title: On the digital code
Institute: The Ministry in charge of telecommunications and the Regulatory Authority	Institute: -	Institute: The Ministry in charge of telecommunications and the Regulatory Authority	Institute: -	Institute: The Ministry in charge of telecommunications and the Regulatory Authority

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Congo, Republic

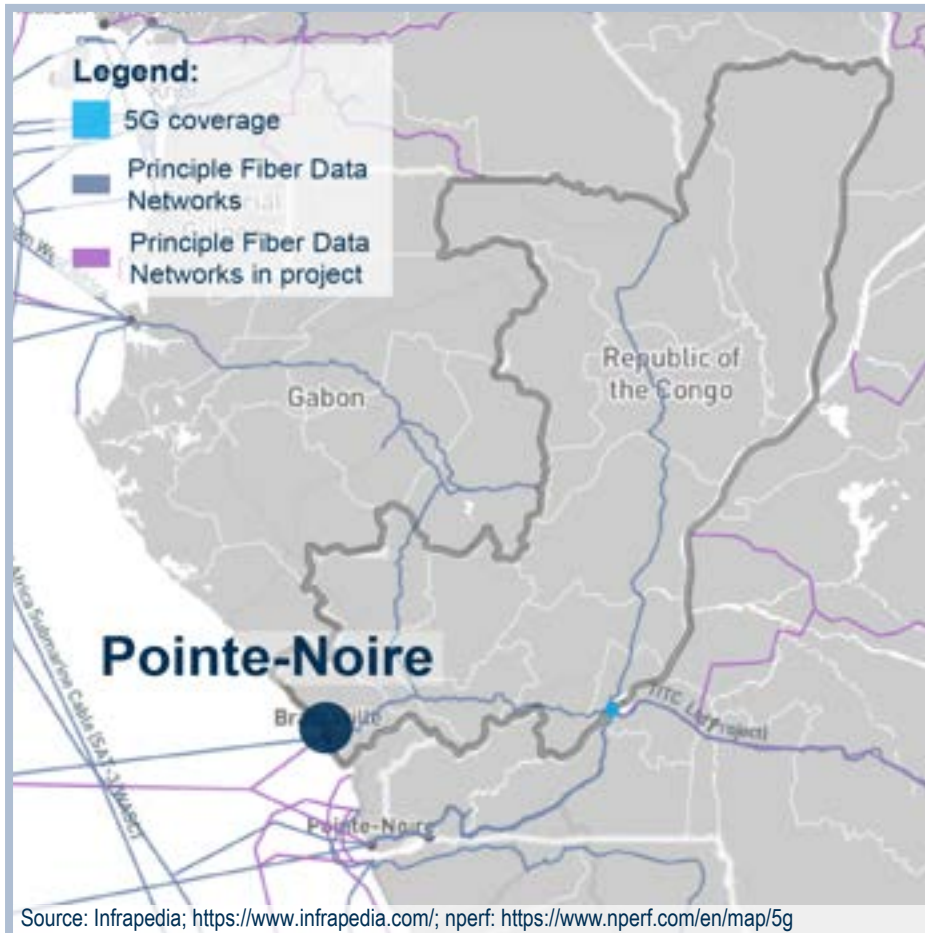
Country statistics

Population (millions):	5.8	International trade: 96% of GDP	Global Competitiveness Index: 43.2 Region avg., 2019
GDP (2021):	US\$ 13.4 bn	Export: US\$ 7.0 billion Where 2.3% goes to African Nations	
GDP per capita (2021):	US\$ 2,290.4	Import: US\$ 2.3 billion Where 17.0% is from African Nations	
Human Capital Index (2020):	0.4		

Port statistics

Pointe-Noire		Port authorities:
Port model:	Landlord Port	Pointe-Noire Port Autonome de Pointe-Noire (PAPN)
Trade volumes:	20,000K Tonnes 1,000K TEU	
Vessels handled:	1,000 per annum	Maritime authority:

National ICT infrastructure



Network Readiness Index	28.2 Region avg.
Global Cybersecurity Index	14.7 2020
AIDI: ICT (2018)	14.7 African Infrastructure Development Index for ICT
Internet penetration	8.7% WB, 2017 % of population using the internet
	0.5% Avg annual growth WB, 2010-2020
Data centers	0 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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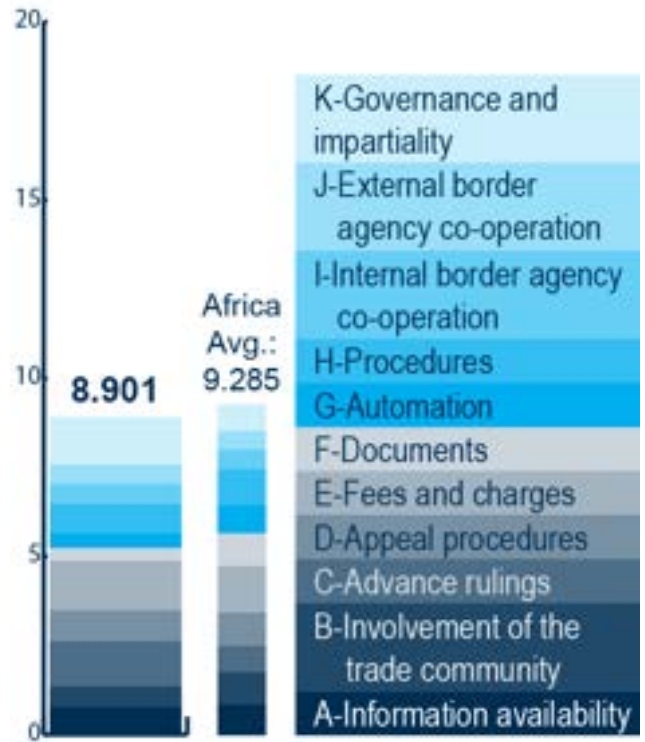
-1.5
USAID, 0 = worldwide average

2.7
2021






Policies and digital Strategies

Congo Digital 2025 2019 - 2025
To develop the digital economy in Congo by ensuring equitable access to digital services, promoting skills and innovation, modernizing public services, implementing good digital governance, and becoming a cyber reference in Central Africa through digital innovation.

The National Development Plan 2022 - 2026
The development of the digital economy, the promotion of real estate and commercial free zones.

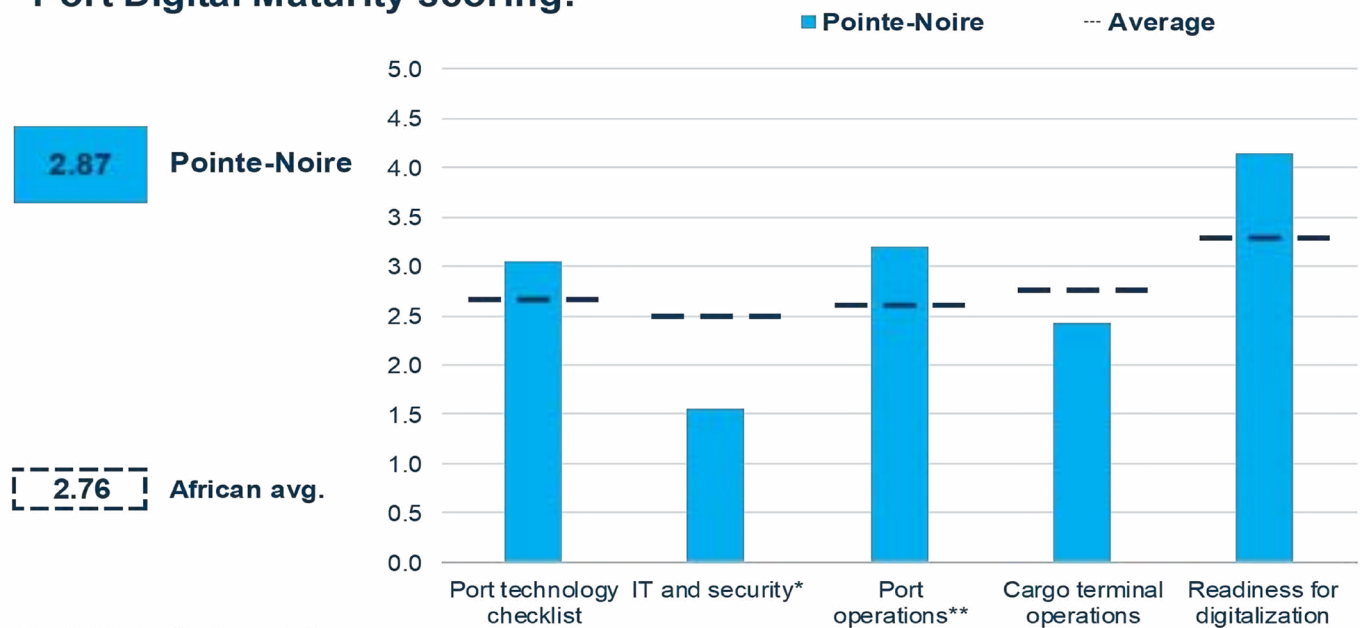


Digitalization legislation

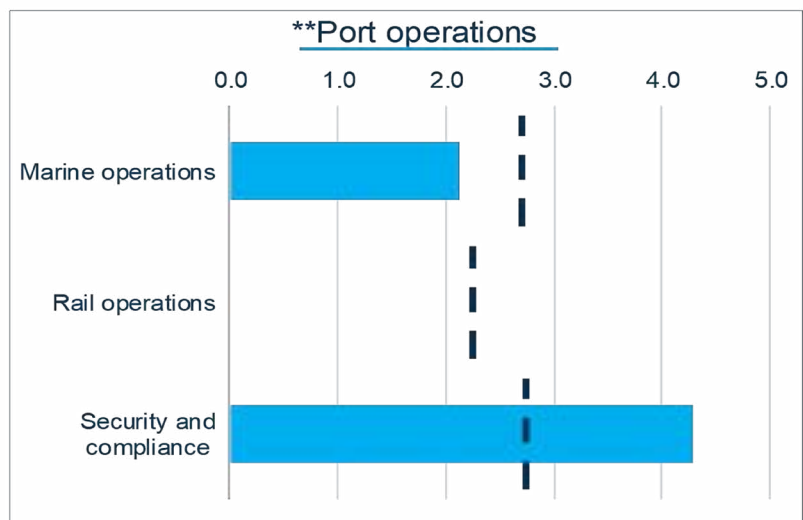
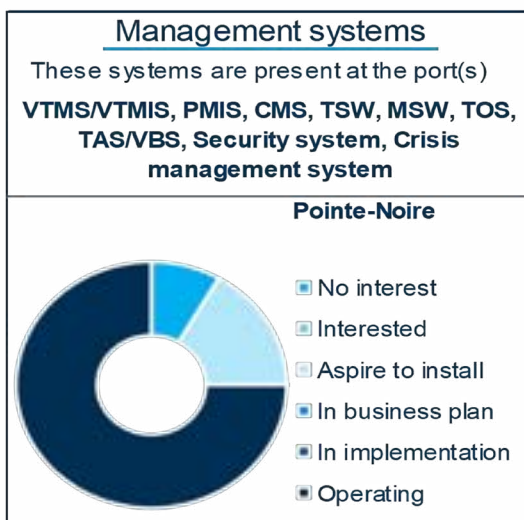
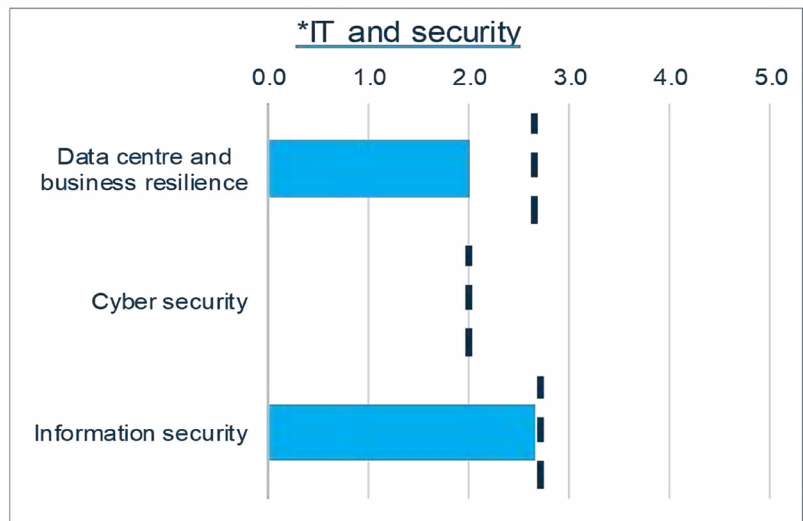
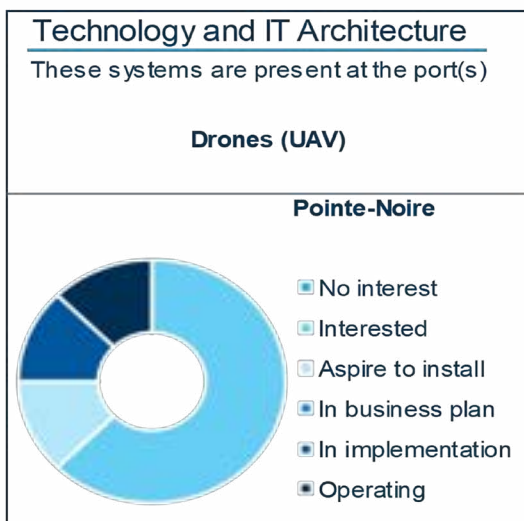
 <p>ICT Authority Law No. 11-2009</p> <p>Title: For the creation of the agency for the regulation of posts and electronic communications</p> <p>Institute: Ministry of Posts, Telecommunications and Digital Economy</p>	 <p>Data Protection Law No. 29-2019</p> <p>Title: on the Protection of Personal Data</p> <p>Institute: The national data protection authority</p>	 <p>Cybercrimes Law No. 26 and 27-2020</p> <p>Title: Fight against cybercrime</p> <p>Institute: Ministry of Foreign Affairs</p>	 <p>Single Window Law No. 16-2013</p> <p>Title: On the creation of a single window for cross-border operations</p> <p>Institute: Ministry of Transport</p>	 <p>Other Law No. 37-2019</p> <p>Title: On electronic transactions</p> <p>Institute: The regulatory agency for posts and electronic communications (ARPCE)</p>
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Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Djibouti

Country statistics

Population (millions):	1.1
GDP (2021):	US\$ 3.4 bn
GDP per capita (2021):	US\$ 3,050.3
Human Capital Index (2020):	

International trade: **223% of GDP**

Export: **US\$ 3.3 billion**
Where 54.1% goes to African Nations

Import: **US\$ 4.0 billion**
Where 19.5% is from African Nations

Global Competitiveness Index:

40.0

Region avg., 2019

Port statistics

Djibouti		
Port model:	Landlord Port	
Trade volumes:	6,500K	Tonnes
	1,000K	TEU
Vessels handled:	1,840	per annum

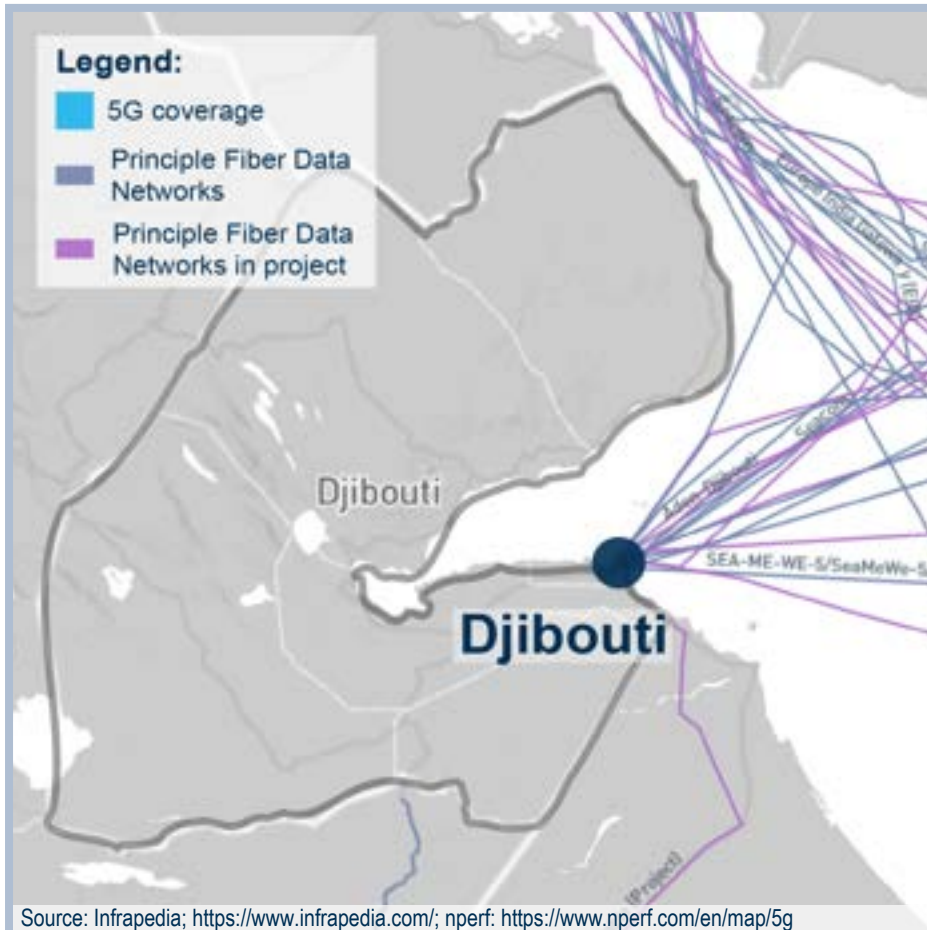
Port authorities:

Djibouti Djibouti Ports and Free Zones Authority (DPFZ)

Maritime authority:

Djibouti Maritime Authority

National ICT infrastructure



Network Readiness Index

30.0 Region avg.

Global Cybersecurity Index

1.7 2020

AIDI: ICT (2018)

11.4 African Infrastructure Development Index for ICT

Internet penetration

59.0% WB, 2020
% of population using the internet

5.3% 
Avg annual growth WB, 2010-2020

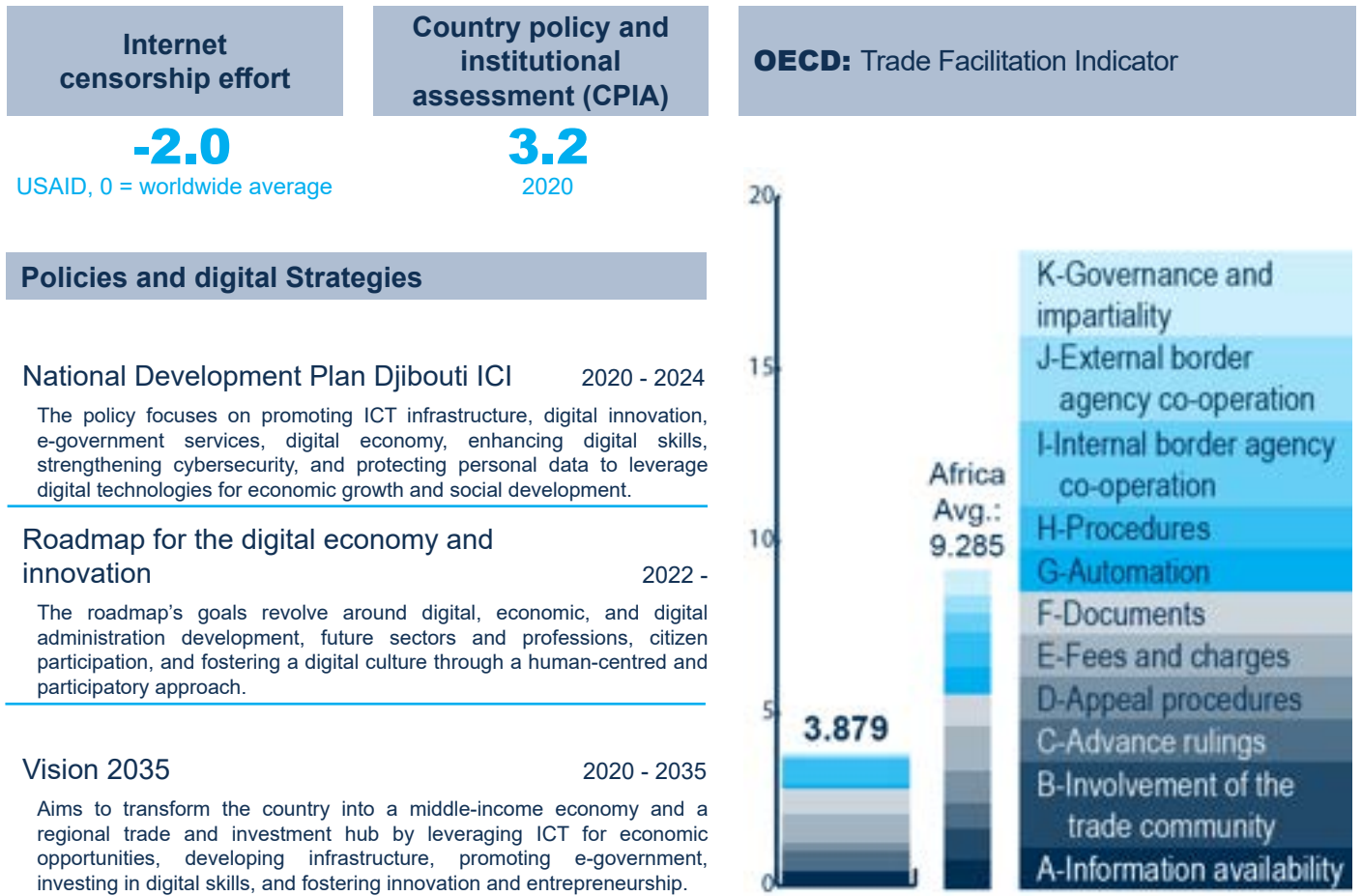
Data centers

0 Colocation data centres in the country






Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

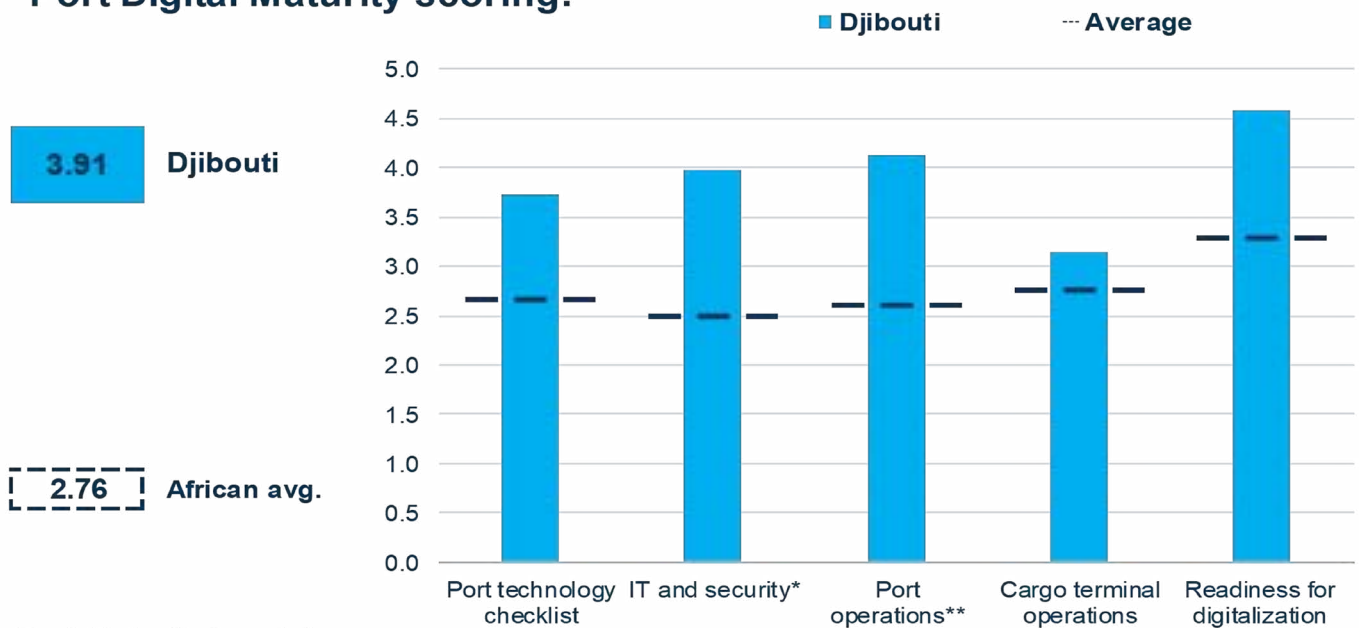


Digitalization legislation

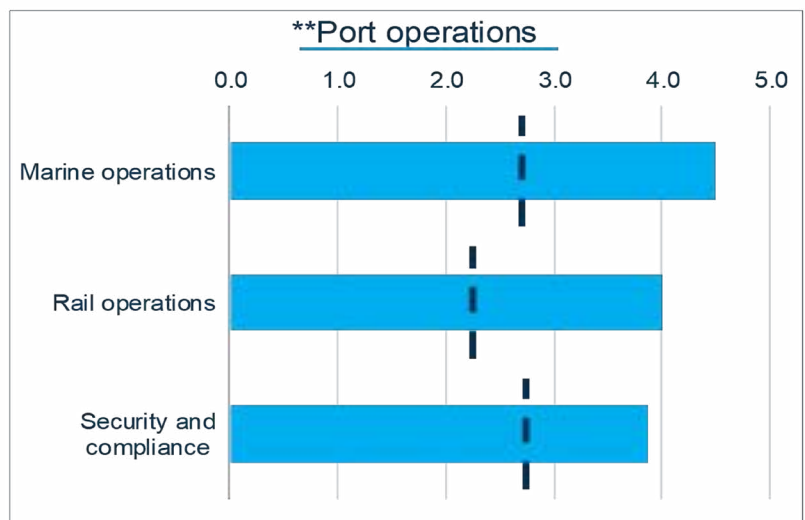
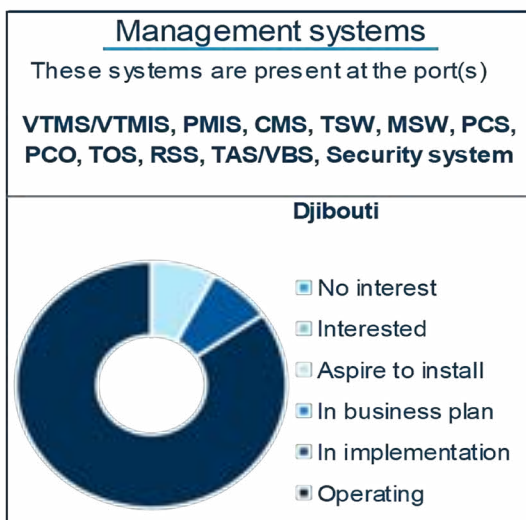
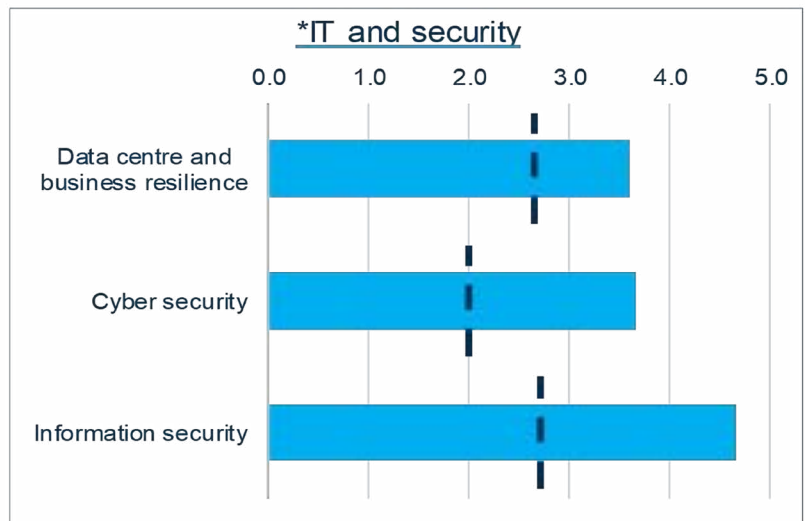
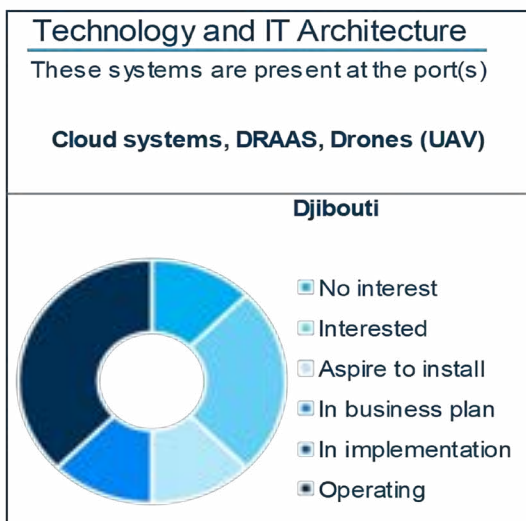
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Decree No. 2016-224/PR/MID	 Law No. 77/AN/05/5ème L	 Decree No. 2019-0149/PR/MID	 -	 Law No. 79/AN/05/5ème L
Title: On the Establishment of the National Agency for Digital Infrastructure and Frequencies (ANINF)	Title: On the Protection of Personal Data	Title: on the Establishment of the National Cybersecurity Agency (ANSSI)	Title: -	Title: on Electronic Transactions
Institute: The Ministry of Communications and Digital Economy	Institute: The Ministry of Justice	Institute: The National Cybersecurity Agency (ANSSI)	Institute: -	Institute: The Ministry of Commerce and Industry

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Gabon

Country statistics

Population (millions):	2.3
GDP (2021):	US\$ 20.2 bn
GDP per capita (2021):	US\$ 8,635.8
Human Capital Index (2020):	0.5

International trade: **72% of GDP**

Export: **US\$ 6.0 billion**
Where 0.4% goes to African Nations

Import: **US\$ 3.4 billion**
Where 6.6% is from African Nations

Global Competitiveness Index:

47.5

WEF, 2019

Port statistics

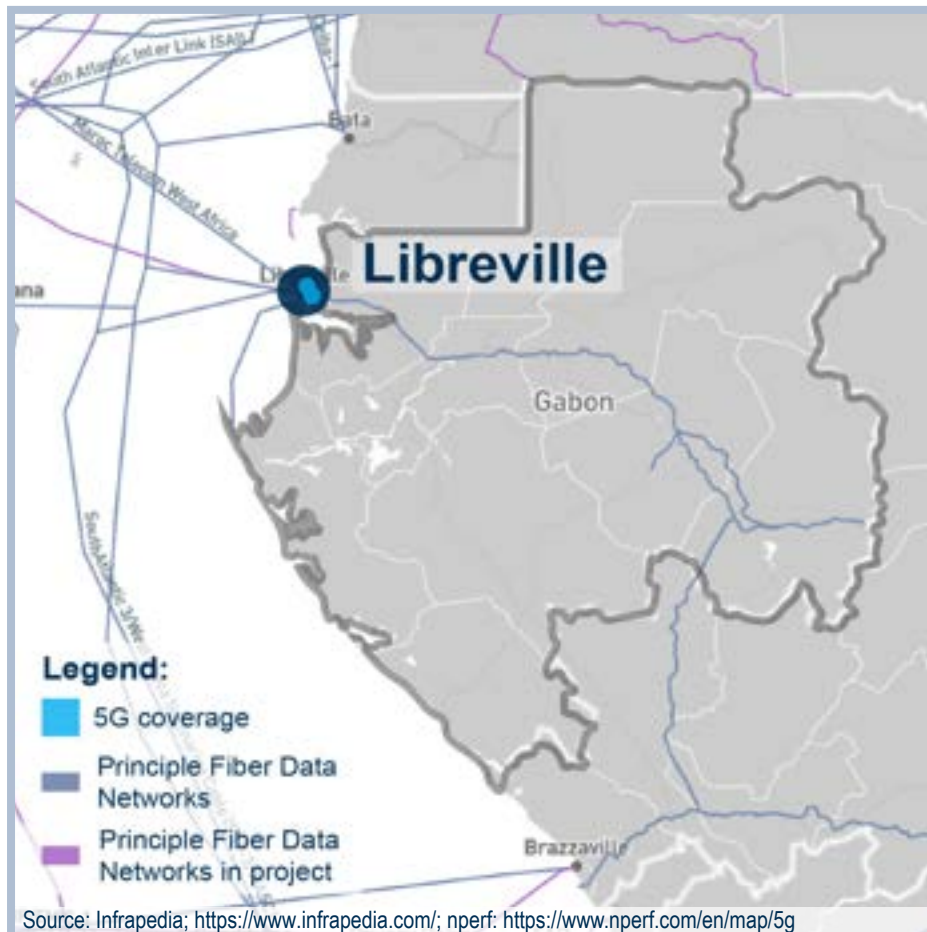
Libreville		
Port model:	Landlord Port	
Trade volumes:	1,400K	Tonnes
	400K	TEU
Vessels handled:	540	per annum

Port authorities:

Libreville Office des Ports et Rades du Gabon (OPRAG)

Maritime authority:

National ICT infrastructure



Network Readiness Index

30.3 Region avg.

Global Cybersecurity Index

11.4 2020

AIDI: ICT (2018)

26.0 African Infrastructure Development Index for ICT

Internet penetration

62.0% WB, 2020
% of population using the internet

4.9%
Avg annual growth WB, 2010-2020

Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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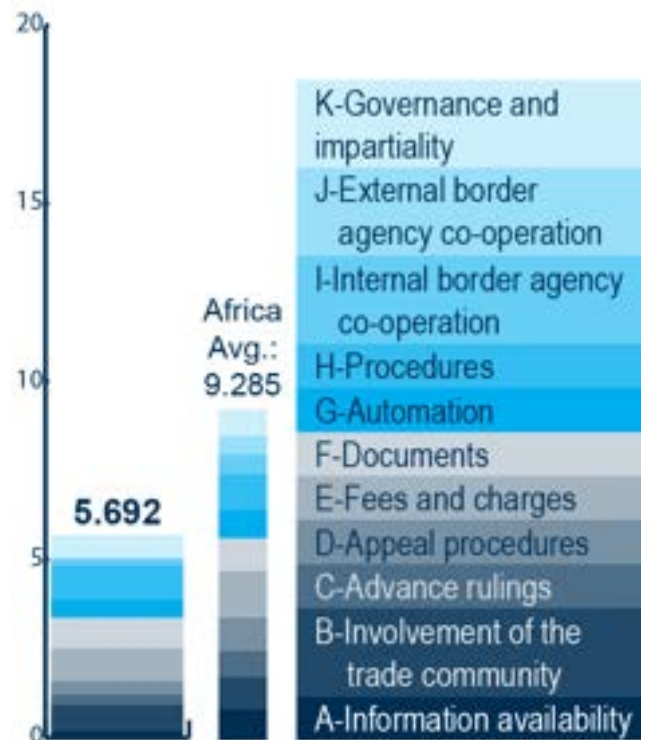
0.8
USAID, 0 = worldwide average

3.0
2021, Region avg.






Policies and digital Strategies

Gabon Digital 2025 Strategy 2016 - 2025

The strategy aims to position Gabon as a regional digital hub and expedite its digital transformation by focusing on five pillars: digital infrastructure, digital skills development, e-government, digital economy, and digital citizenship.

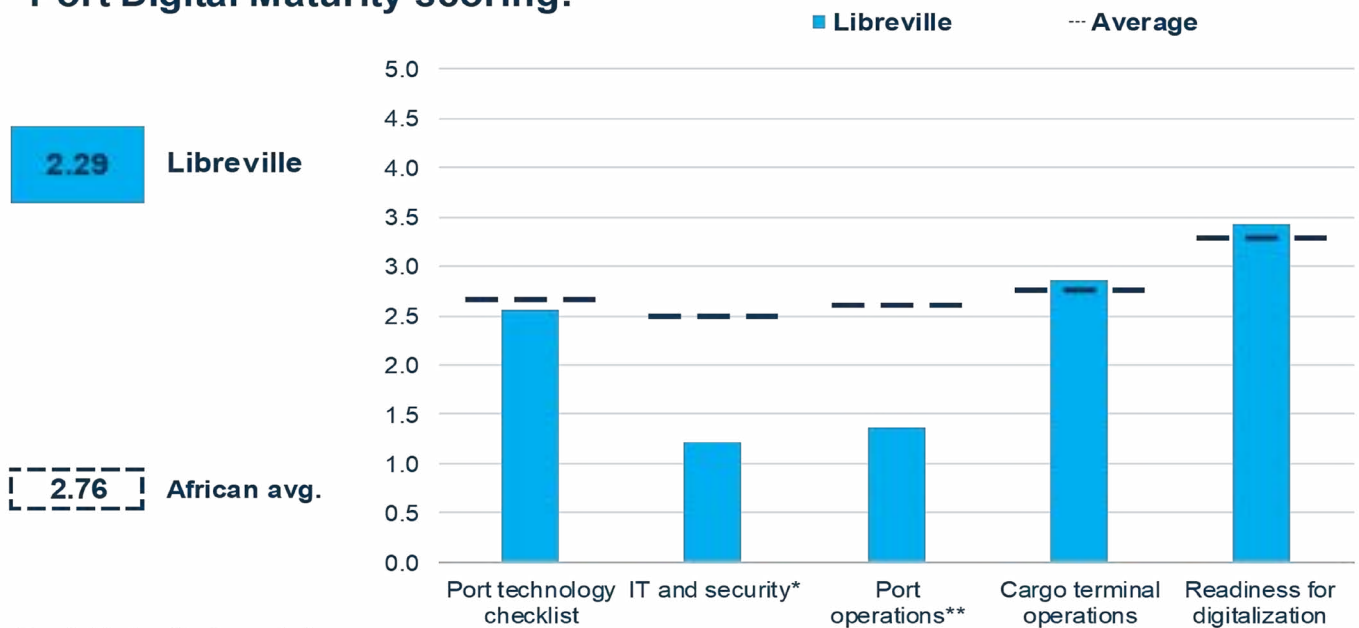


Digitalization legislation

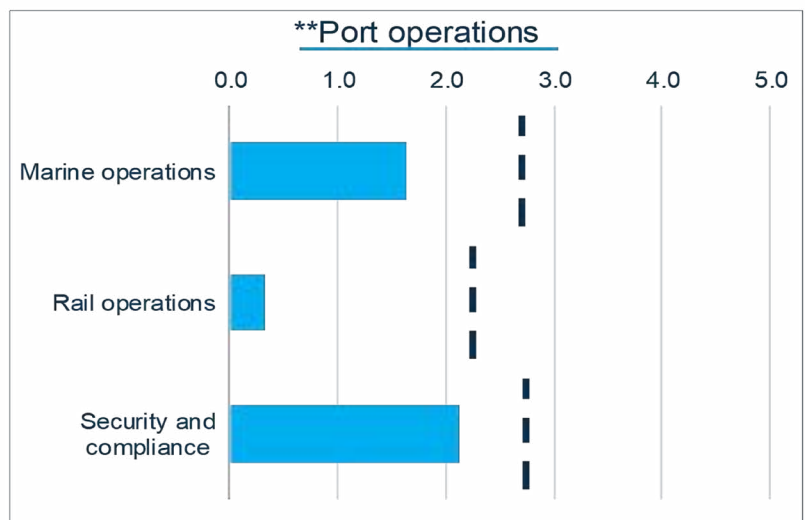
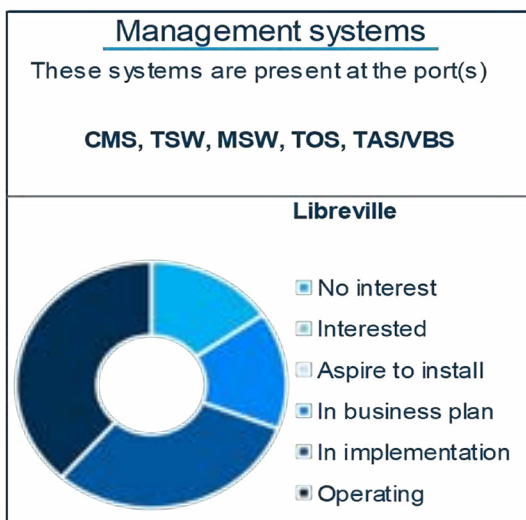
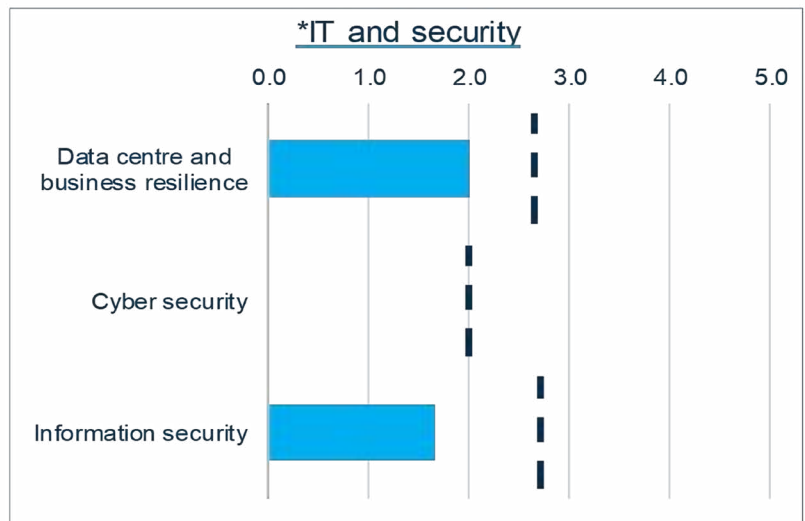
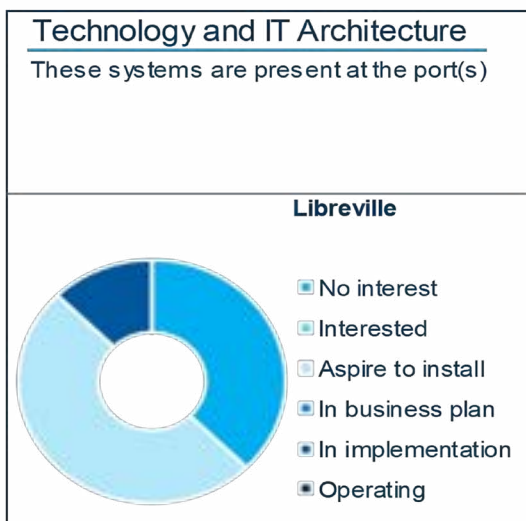
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Law No. 26/2018	 Law No. 001/2011	 Order No. 15-PR-2018	 -	 Law No. 025/2021
Title: The Electronic Communications Law	Title: on the Protection of Personal Data	Title: on the Regulation of Cybersecurity and the Fight against Cybercrime	Title: -	Title: Regulation of electronic transactions
Institute: Electronic Communications and Postal Authority ('ARCEP')	Institute: Gabon data protection authority ('CNPDCP')	Institute: Inter-Ministerial Technical Commission for the regulation of cybersecurity, electronic transactions and protection of personal data	Institute: -	Institute: Gabon data protection authority ('CNPDCP')

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Gambia

Country statistics

Population (millions):	2.6	International trade: 42% of GDP	Global Competitiveness Index: 45.9 WEF, 2019
GDP (2021):	US\$ 2.0 bn	Export: US\$ 0.1 billion Where 17.5% goes to African Nations	
GDP per capita (2021):	US\$ 772.2	Import: US\$ 0.7 billion Where 14.8% is from African Nations	
Human Capital Index (2020):	0.5		

Port statistics

Banjul		Port authorities:
Port model:	Public Service Port	Banjul Gambia Ports Authority (GPA)
Trade volumes:	700K Tonnes 140K TEU	
Vessels handled:	185 per annum	Maritime authority: The Gambia Maritime Administration

National ICT infrastructure

Source: Infrapedia; <https://www.infrapedia.com/>; nperf: <https://www.nperf.com/en/map/5g>

Network Readiness Index	33.1
Global Cybersecurity Index	32.1 2020
AIDI: ICT (2018)	20.9 African Infrastructure Development Index for ICT
Internet penetration	36.5% WB, 2020 % of population using the internet
	2.7% Avg annual growth WB, 2010-2020
Data centers	0 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

Internet censorship effort	Country policy and institutional assessment (CPIA)	OECD: Trade Facilitation Indicator
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0.8

USAID, 0 = worldwide average

3.0

2021

Policies and digital Strategies

The Gambia National Development plan 2018 - 2021

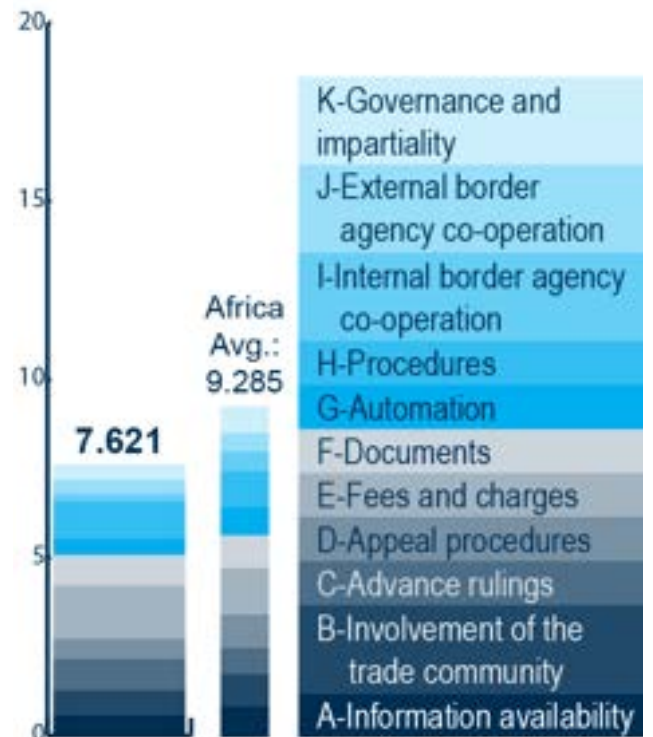
The objective is to transform The Gambia into a digital nation and create a modern information society through improved ICT infrastructure and services, aiming to increase internet usage, mobile phone access and school connectivity.

Gambia National Cyber Security Policy, Strategies and Action Plan 2020 - 2024






To identify critical information infrastructure, enhance cybersecurity capacity and frameworks, promote awareness and collaboration, ensure safety in cyberspace for vulnerable groups, coordinate the fight against cybercrime, and leverage cyberspace for social and economic development.

Data protection and privacy Policy and Strategy 2019 - 2024

To develop data protection and privacy laws, establish institutional frameworks, implement international best practices, ensure safeguards for personal data processing, provide additional protections for children and vulnerable groups, and establish an independent Authority.

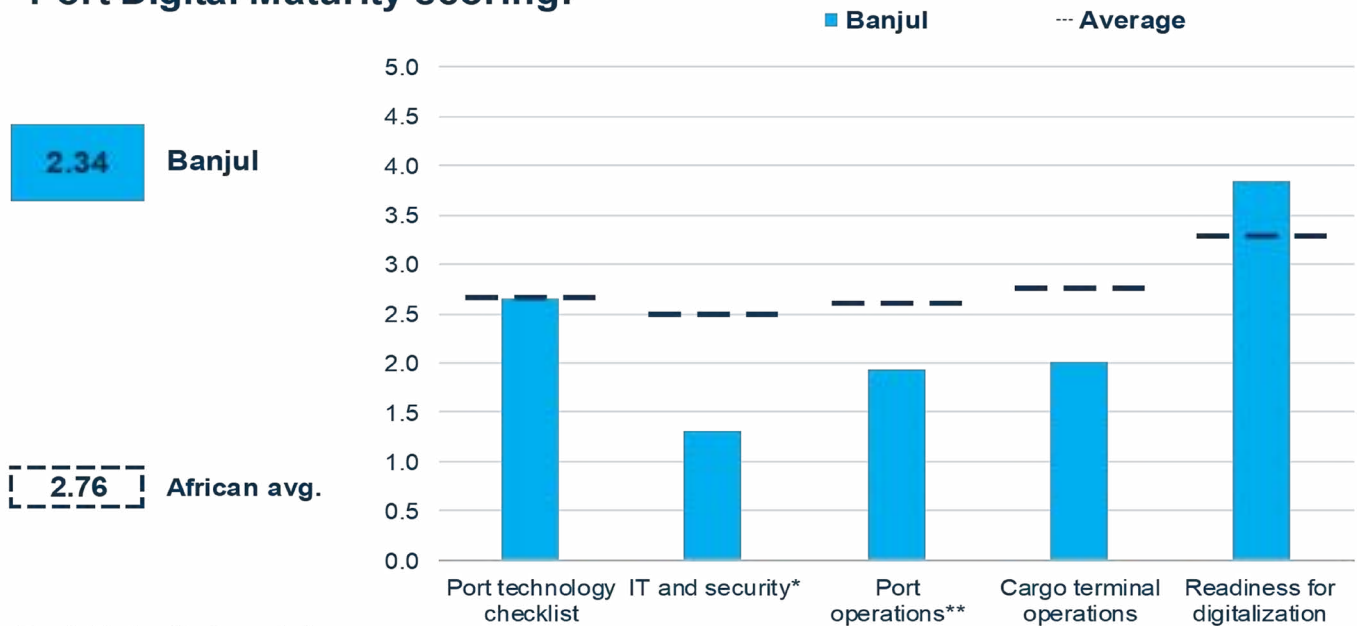


Digitalization legislation

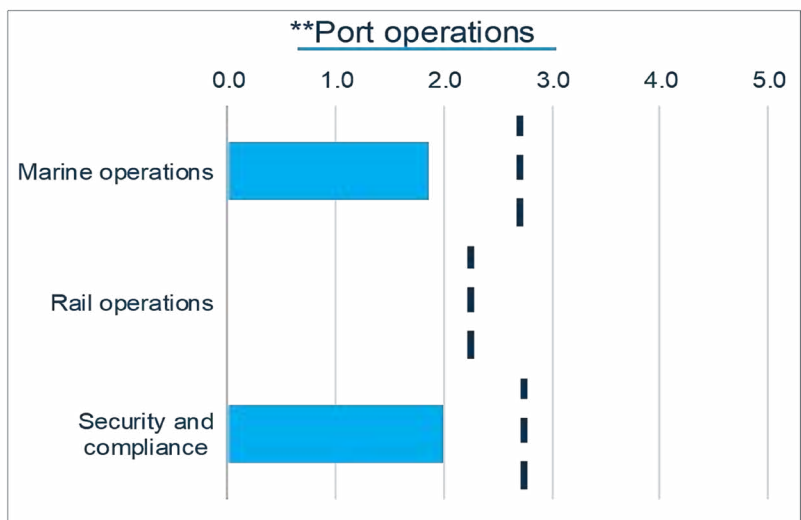
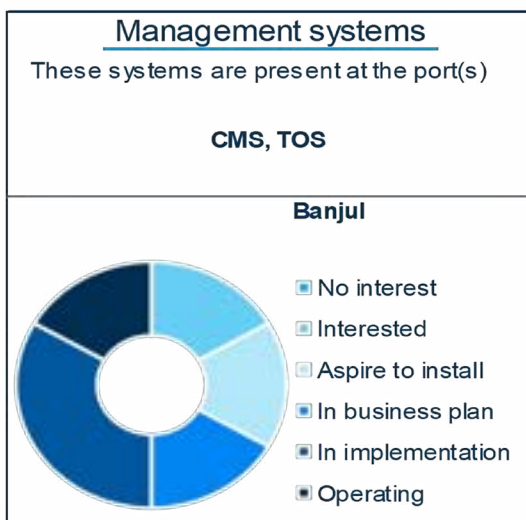
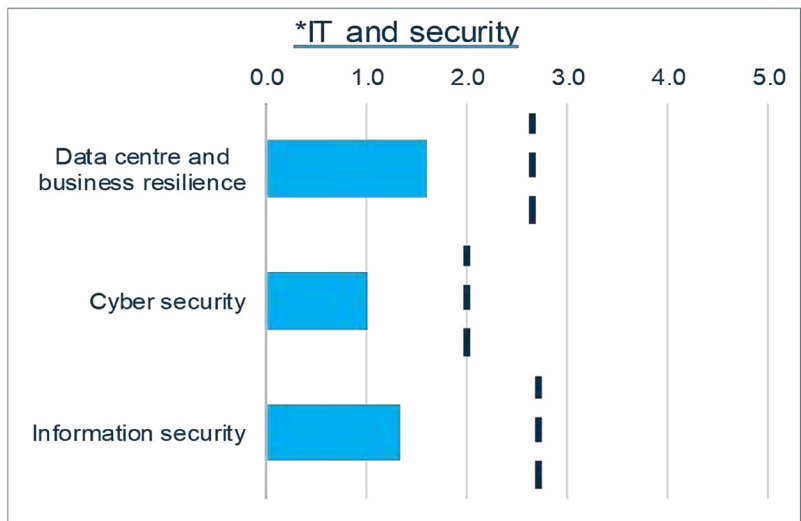
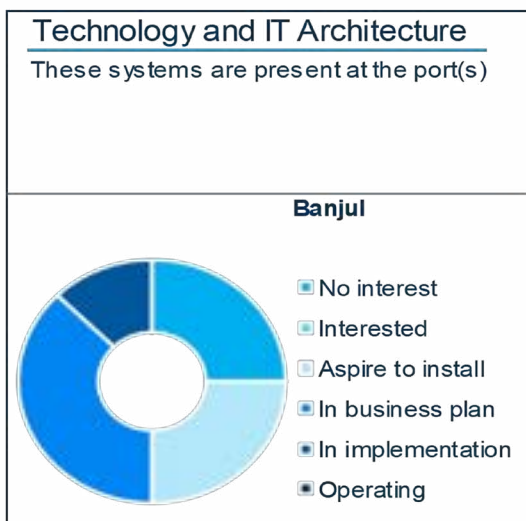
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Law No. 3 of 2019	 -	 Under develop-ment	 -	 Law No. 2 of 2009
Title: The Gambia information and communication technology agency act	Title: -	Title: The Gambia Cybercrime Bill	Title: -	Title: The information and communications act
Institute: The Public Utilities Regulatory Authority (PURA)	Institute: -	Institute: The ministry of information and communication infrastructure	Institute: -	Institute: The Public Utilities Regulatory Authority (PURA)

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Ghana

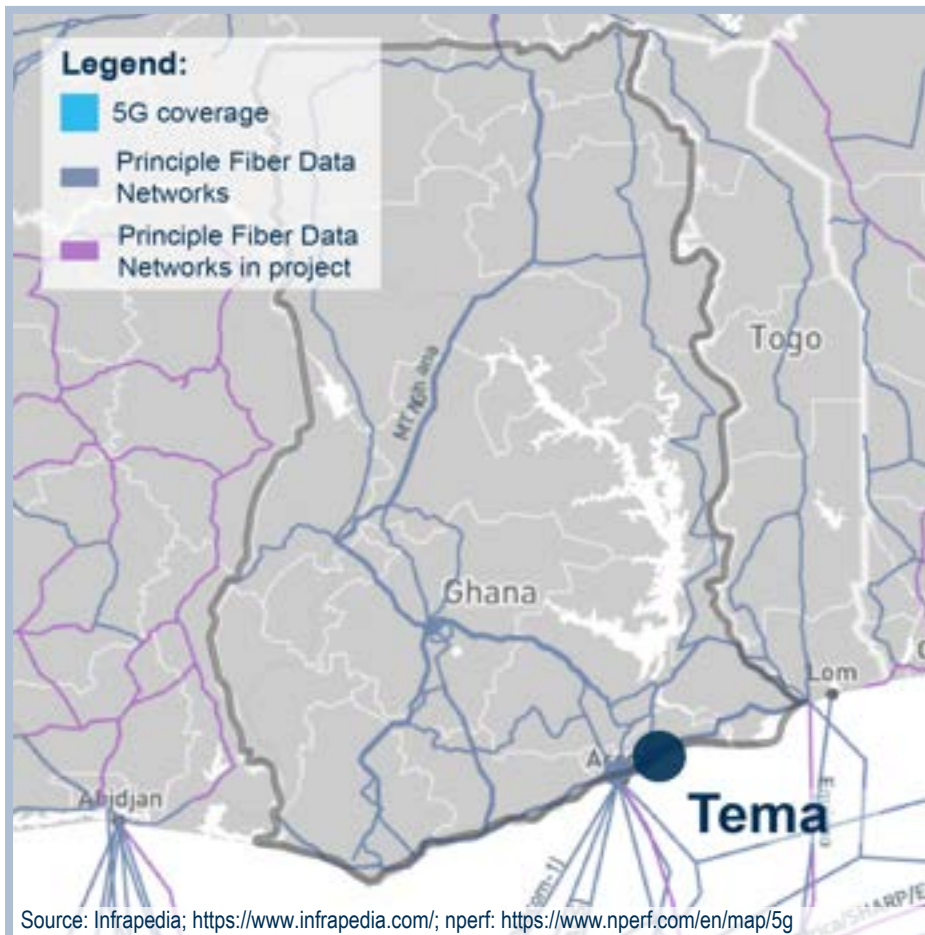
Country statistics

Population (millions):	32.8	International trade: 58% of GDP	Global Competitiveness Index: 51.2 WEF, 2019
GDP (2021):	US\$ 79.2 bn	Export: US\$ 23.9 billion Where 6.3% goes to African Nations	
GDP per capita (2021):	US\$ 2,410.9	Import: US\$ 26.0 billion Where 10.8% is from African Nations	
Human Capital Index (2020):	0.5		

Port statistics

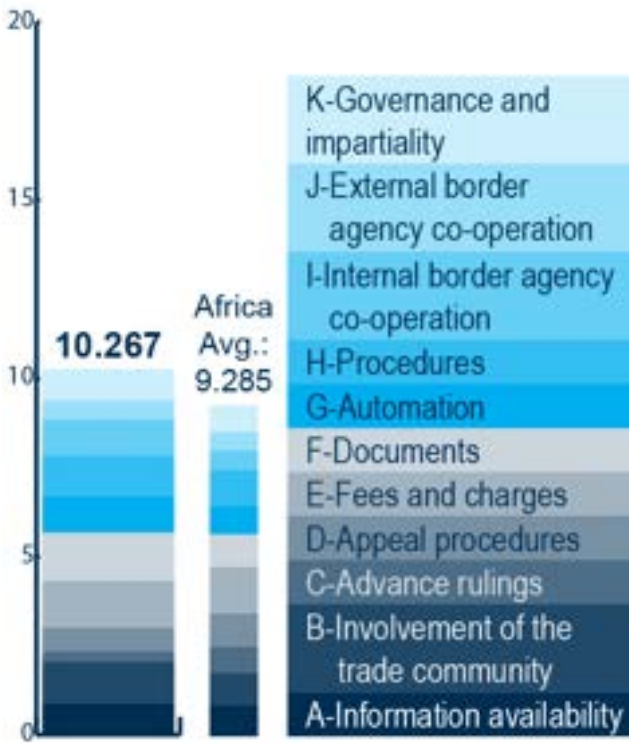
Tema			Port authorities:
Port model:	Tool/Landlord Port		Tema Ghana Ports and Harbours Authority (GPHA)
Trade volumes:	23,000K	Tonnes	
	1,500K	TEU	
Vessels handled:	2,000	per annum	Maritime authority: Ghana Maritime Authority (GMA)

National ICT infrastructure







Network Readiness Index	38.9
Global Cybersecurity Index	86.7 2020
AIDI: ICT (2018)	22.1 African Infrastructure Development Index for ICT
Internet penetration	68.6% WB, 2021 % of population using the internet
	5.5% Avg annual growth WB, 2010-2020
Data centers	5 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

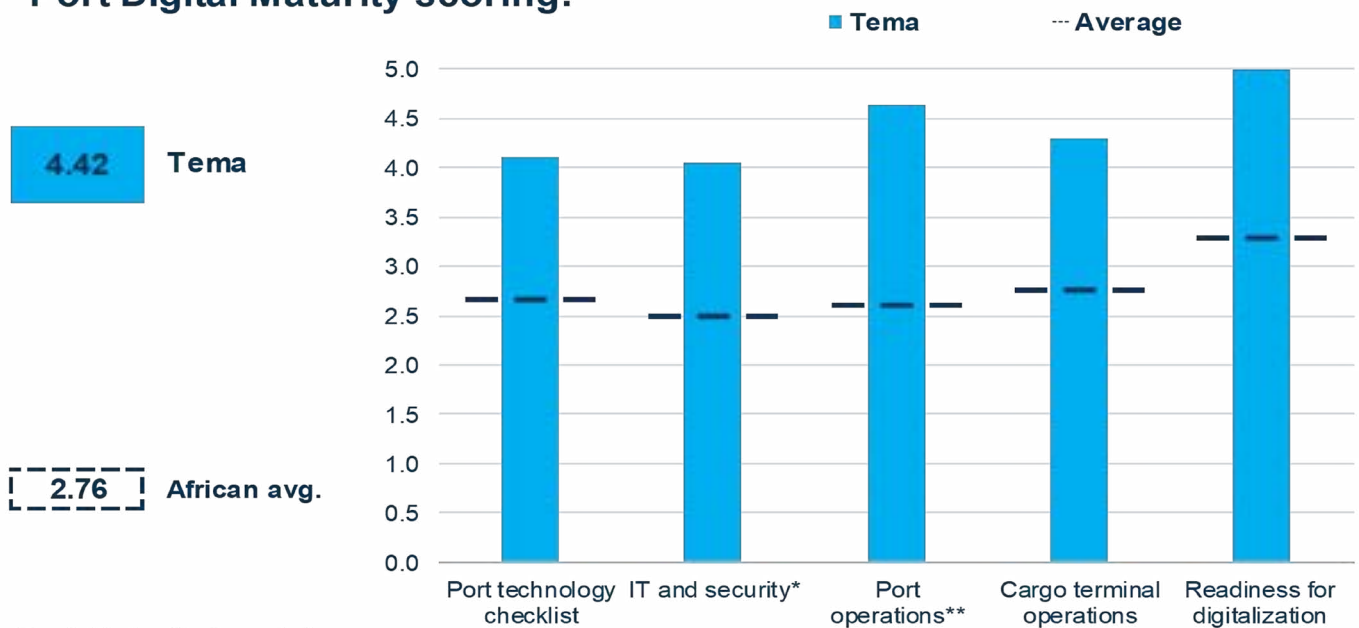
<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
<p>1.8 USAID, 0 = worldwide average</p>	<p>3.0 2021</p>	
<p>Policies and digital Strategies</p>		
<p>Digital Ghana Agenda 2018 - To digitise Government services, build a biometric National Identity register, deploy a digital property addressing system, mobile money interoperability and institutionalise paperless port operations among others.</p>		
<p>The Ghana ICT for digital development (ICT4AD) policy 2003 - 2023 To enable ICT deployment, develop the ICT industry, modernize sectors, enhance capacity, improve education and healthcare, modernize public services, develop infrastructure, guide e-government and e-commerce, promote gender equality, establish legal frameworks, and ICT standards.</p>		
<p>National Science, Technology and Innovation Policy 2010 - 2020 The objective is to enhance scientific and technological capabilities, foster inter-institutional collaboration, improve infrastructure for research and innovation, support trade and competitiveness, and promote a culture of science and technology in Ghana.</p>		

Digitalization legislation

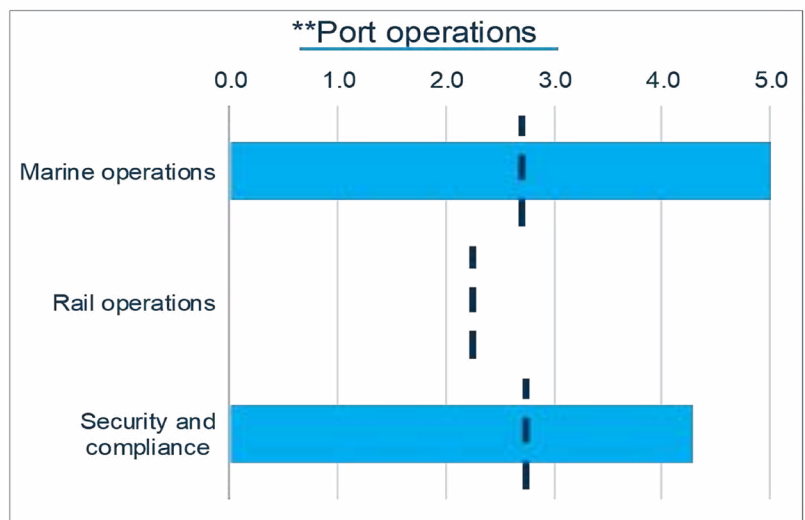
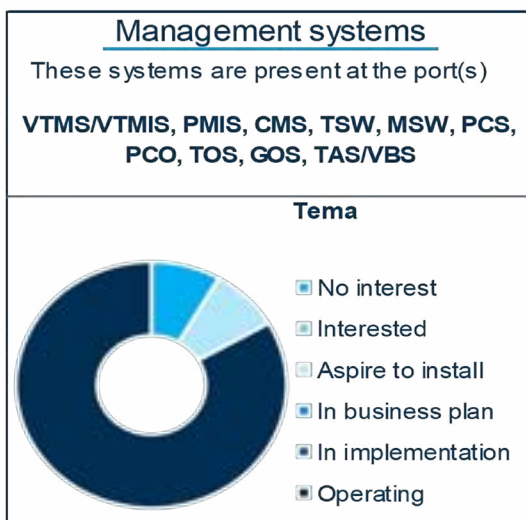
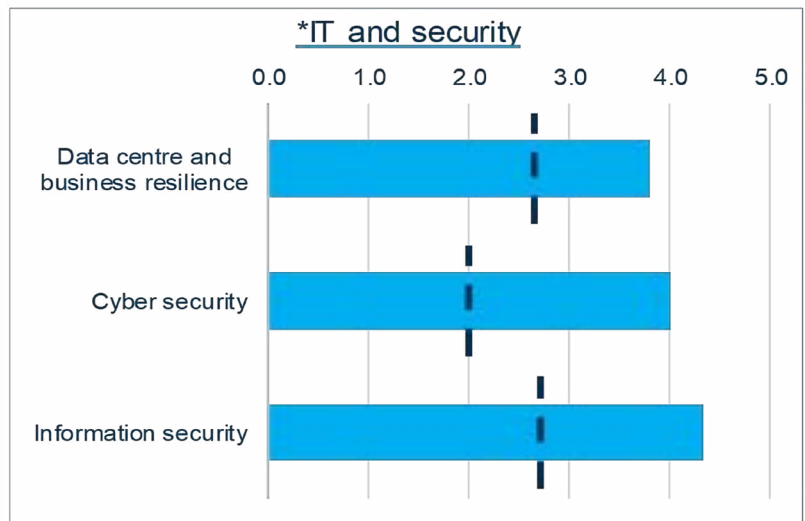
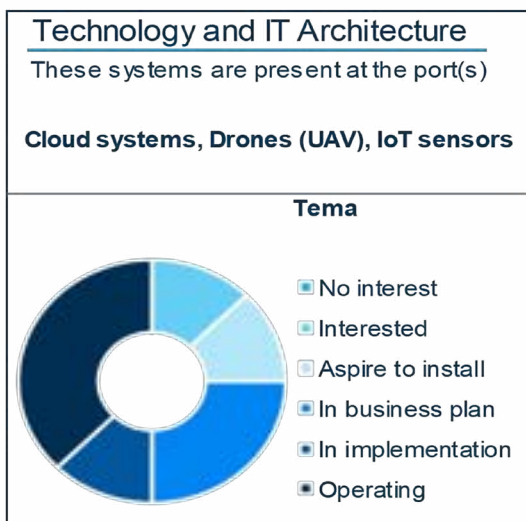
 <p>ICT Authority Act 769, 2008</p> <p>Title: National Communications Authority Act</p> <p>Institute: National Communications Authority</p>	 <p>Data Protection Act 843, 2012</p> <p>Title: Data Protection Act</p> <p>Institute: National Communications Authority</p>	 <p>Cybercrimes Act 1038, 2020</p> <p>Title: Cybersecurity Act</p> <p>Institute: National Communications Authority</p>	 <p>Single Window (Act 923, 2016); Amendment L.I. 2248</p> <p>Title: Customs Regulations Act</p> <p>Institute: The Ministry of Finance</p>	 <p>Other Act 775, 2008</p> <p>Title: Electronic Communications Act</p> <p>Institute: National Communications Authority</p>
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Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Guinea

Country statistics

Population (millions):	13.5
GDP (2021):	US\$ 16.1 bn
GDP per capita (2021):	US\$ 1,189.2
Human Capital Index (2020):	0.4

International trade: **132% of GDP**

Export: **US\$ 10.5 billion**
Where 0.1% goes to African Nations

Import: **US\$ 5.3 billion**
Where 8.3% is from African Nations

Global Competitiveness Index:

46.1

WEF, 2019

Port statistics

Conakry		
Port model:	Landlord Port	
Trade volumes:	10,600K	Tonnes
	240K	TEU
Vessels handled:	1,180	per annum

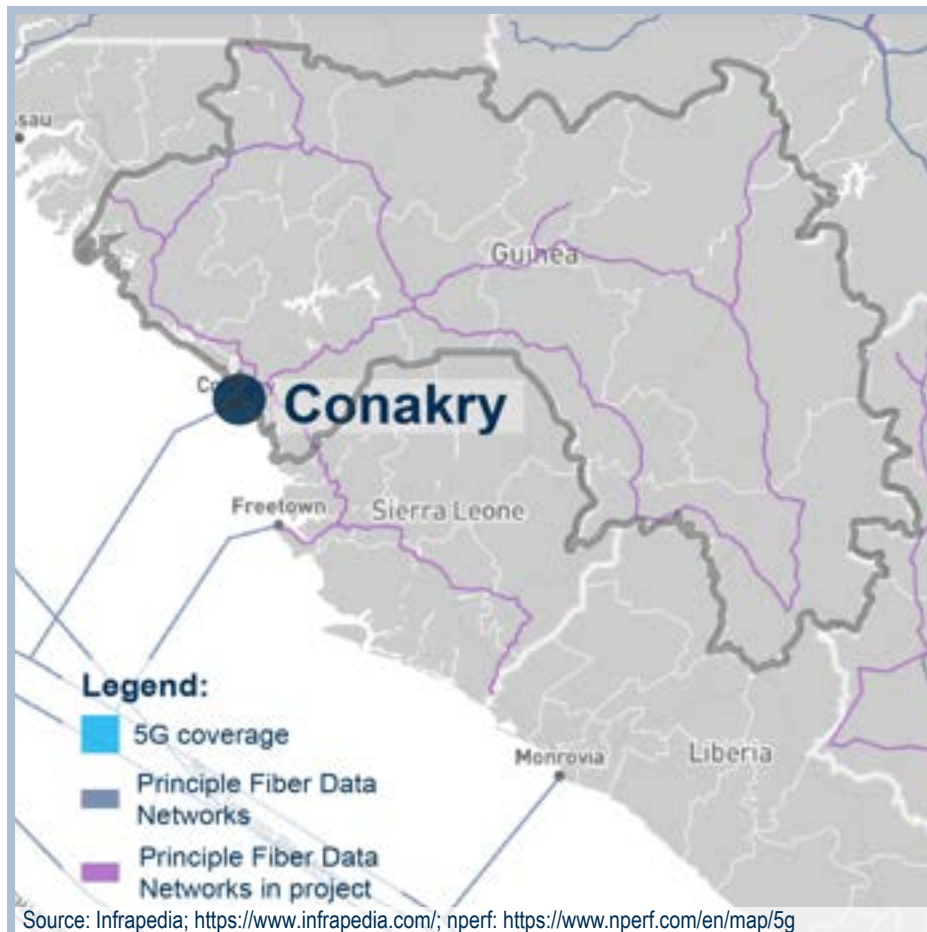
Port authorities:

Conakry Port Autonome Conracky

Maritime authority:

Guinean Maritime Administration

National ICT infrastructure



Network Readiness Index

28.9

Global Cybersecurity Index

20.5 2020

AIDI: ICT (2018)

8.8 African Infrastructure Development Index for ICT

Internet penetration

26.0% WB, 2020
% of population using the internet

2.5%
Avg annual growth WB, 2010-2020

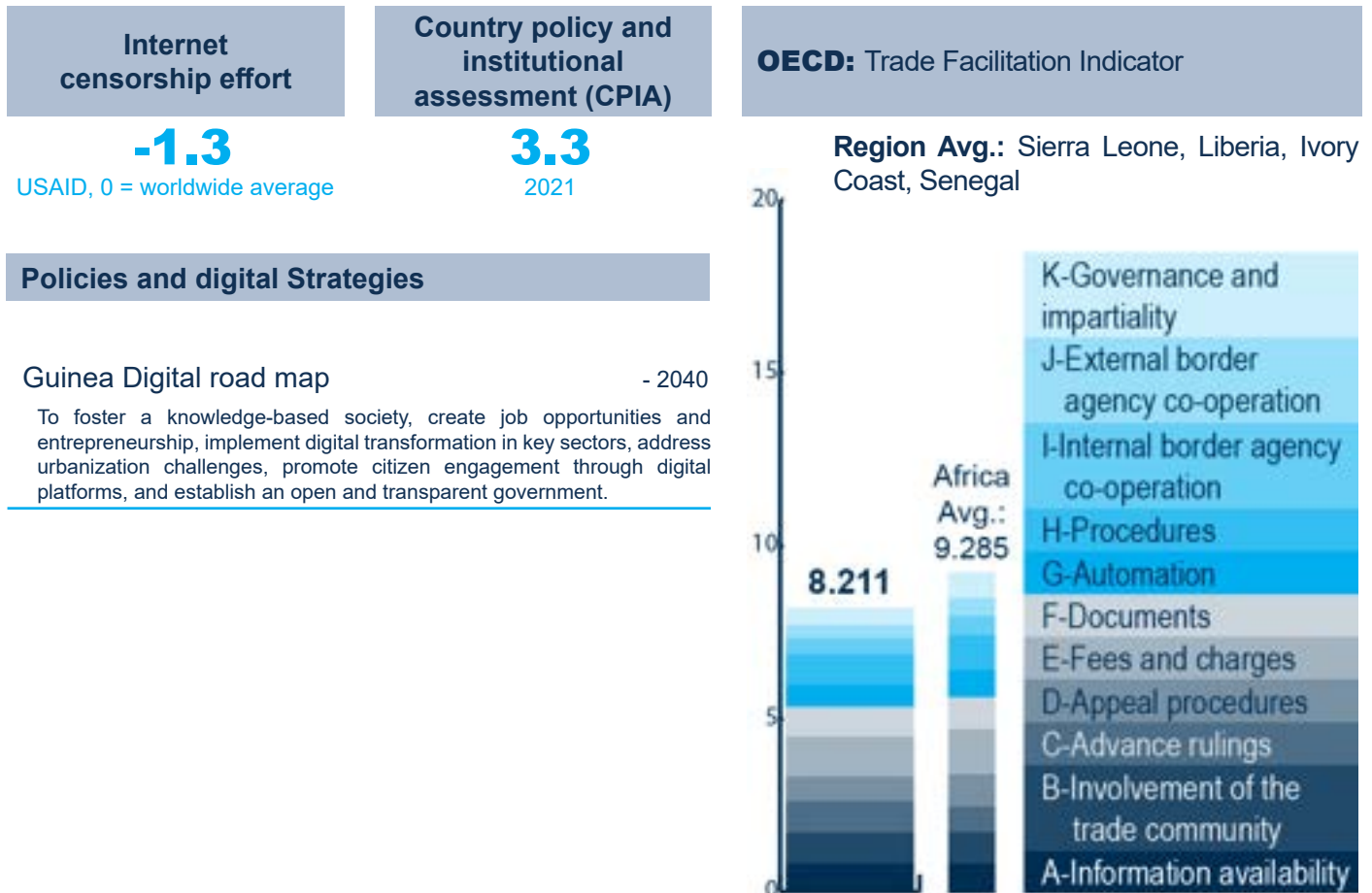
Data centers

0 Colocation data centres in the country






Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

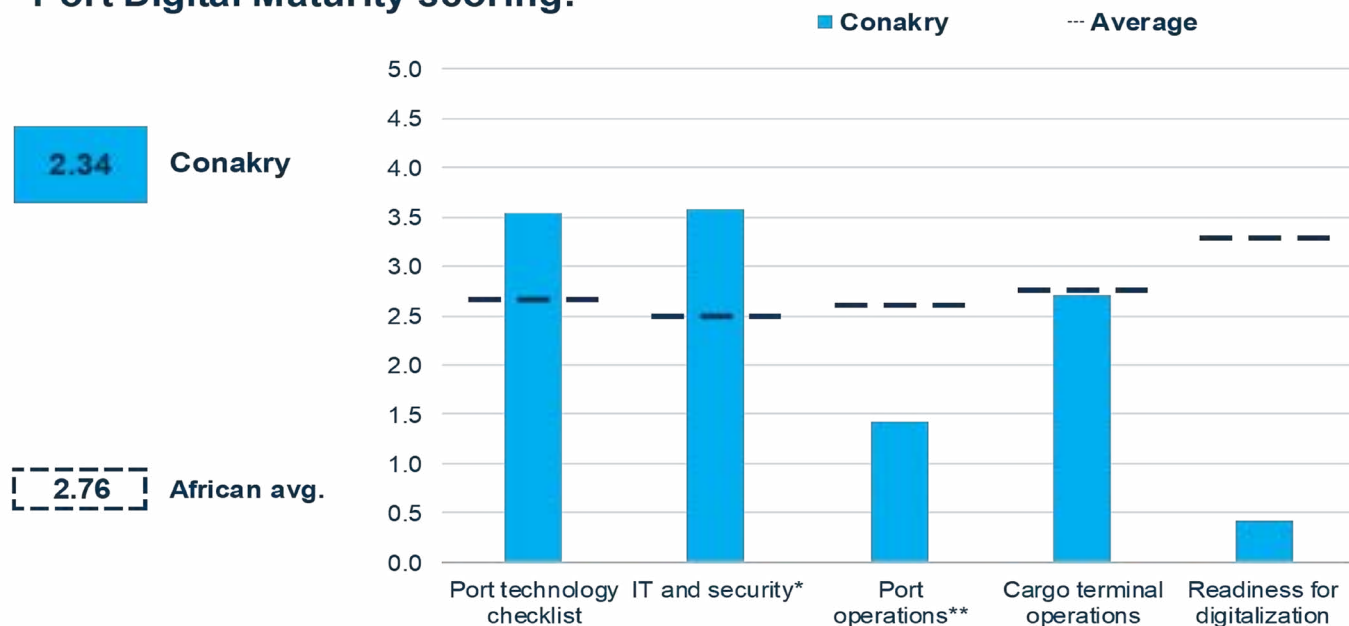


Digitalization legislation

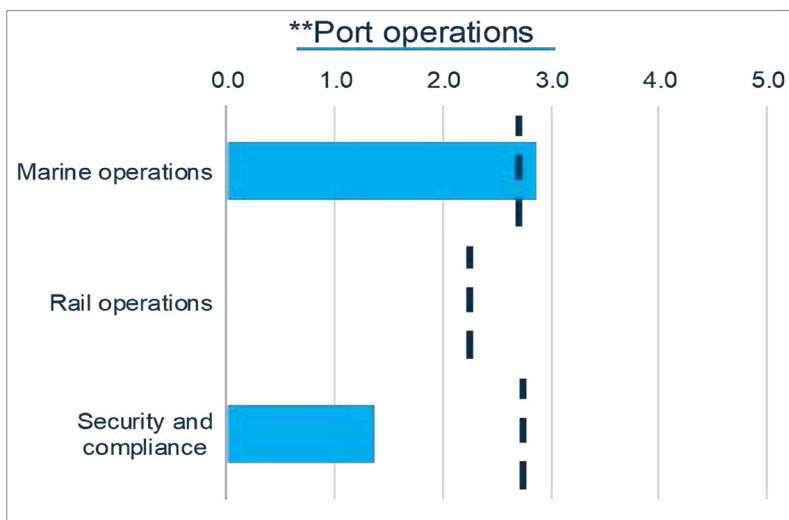
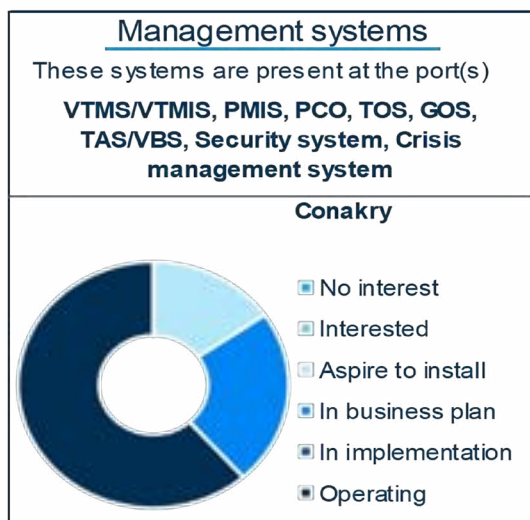
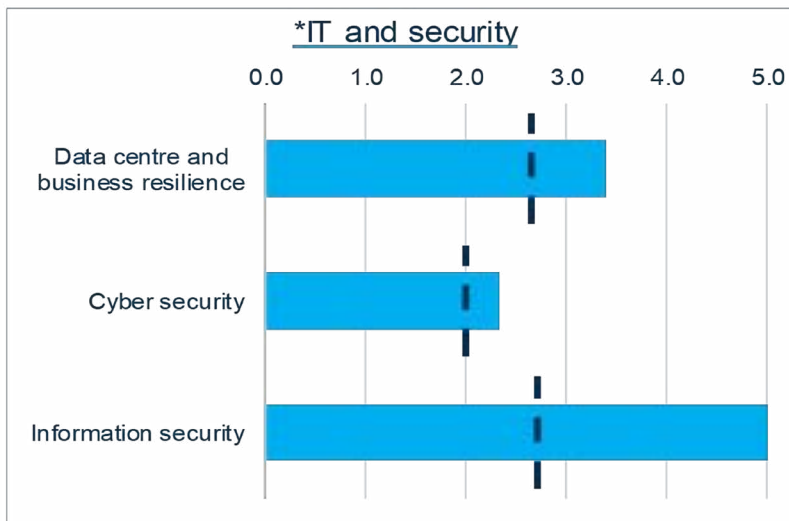
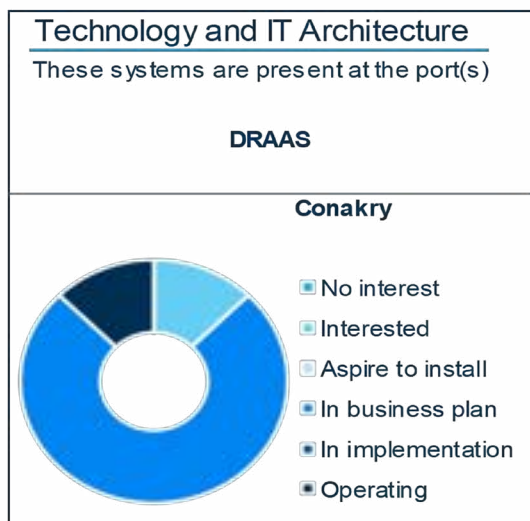
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Law No. L/2016/037/AN	 Law No. L/2016/037/AN	 Law No. L/2016/037/AN	 -	 Law No. L/2016/035/AN
Title: on Cybersecurity and Personal Data Protection Law	Title: on Cybersecurity and Personal Data Protection Law	Title: on Cybersecurity and Personal Data Protection Law	Title: -	Title: on electronic transactions in the Republic of Guinea
Institute: The Regulatory Authority for Posts and Telecommunications (ARPT)	Institute: The Regulatory Authority for Posts and Telecommunications (ARPT)	Institute: The Regulatory Authority for Posts and Telecommunications (ARPT)	Institute: -	Institute: The Ministry of Posts, telecommunications and Digital economy

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Guinea-Bissau

Country statistics

Population (millions):	2.1
GDP (2020):	US\$ 1.6 bn
GDP per capita (2021):	US\$ 795.1
Human Capital Index (2020):	

International trade: **44% of GDP**

Export: **US\$ 0.2 billion**
Where 4.7% goes to African Nations

Import: **US\$ 0.5 billion**
Where 20.7% is from African Nations

Global Competitiveness Index:

47.2

Region avg., 2019

Port statistics

Bissau		
Port model:	Public Service Port	
Trade volumes:	600	Tonnes
	61K	TEU
Vessels handled:	290	per annum

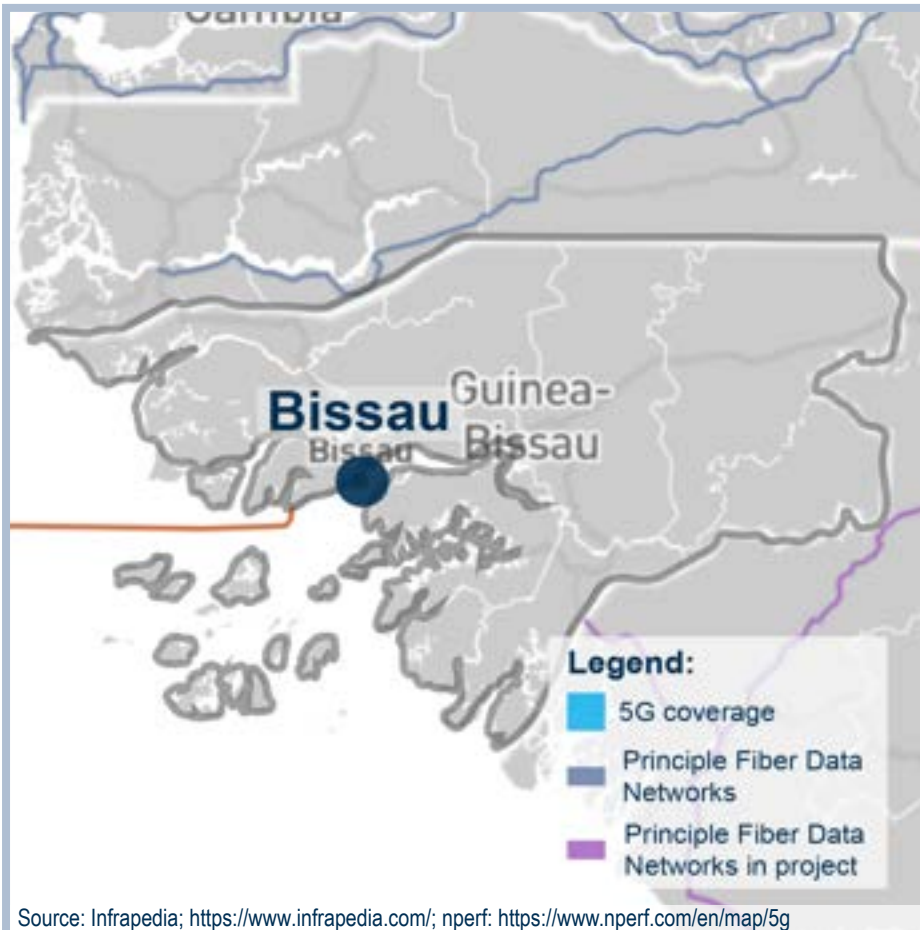
Port authorities:

Bissau Port of Bissau (APGB)

Maritime authority:

Direcção Geral da Marinha Mercante (DGMM)

National ICT infrastructure



Network Readiness Index

33.9 Region avg.

Global Cybersecurity Index

9.9 2020

AIDI: ICT (2018)

8.8 African Infrastructure Development Index for ICT

Internet penetration

22.9% WB, 2020
% of population using the internet

2.1%
Avg annual growth WB, 2010-2020

Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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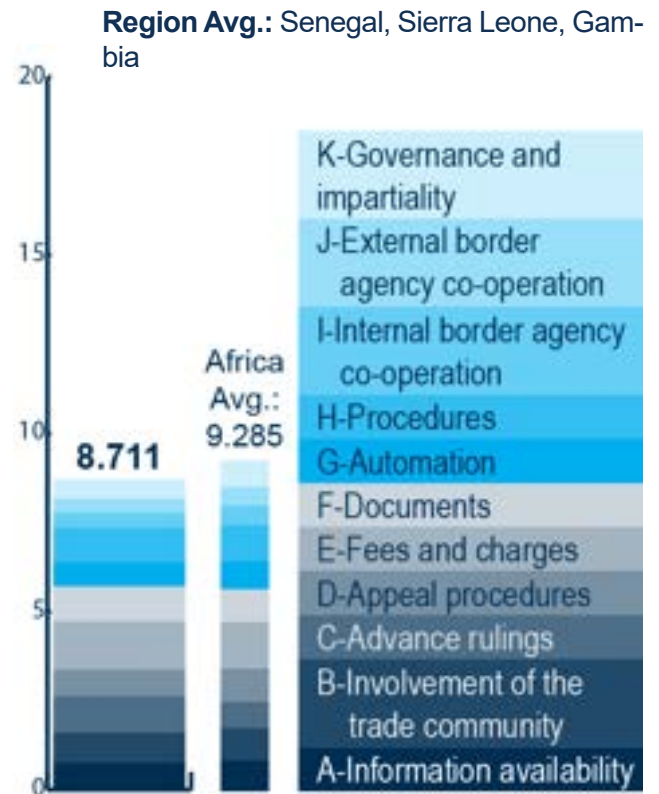
0.5
USAID, 0 = worldwide average

2.4
2021

Policies and digital Strategies

Global Rationalisation Plan 2020 - 2026

The e-Government program aims to drive digital inclusion, enhance service efficiency, ensure essential functions availability, and promote democratic participation for citizens and businesses.

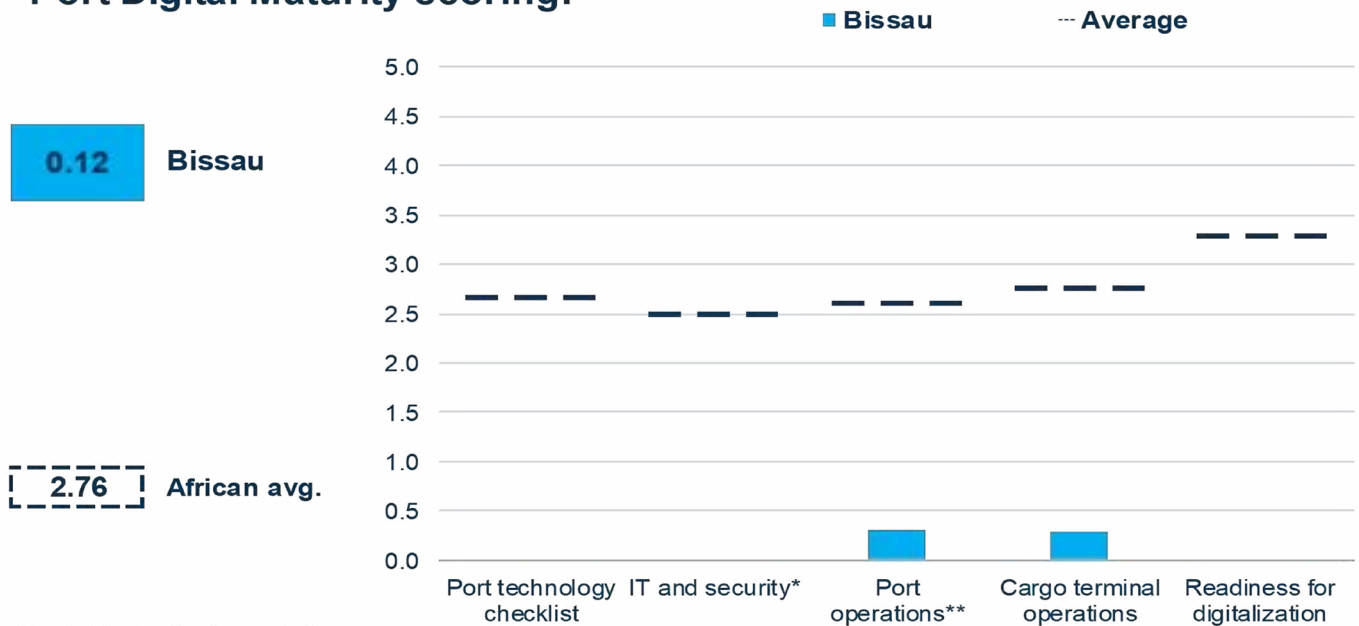


Digitalization legislation

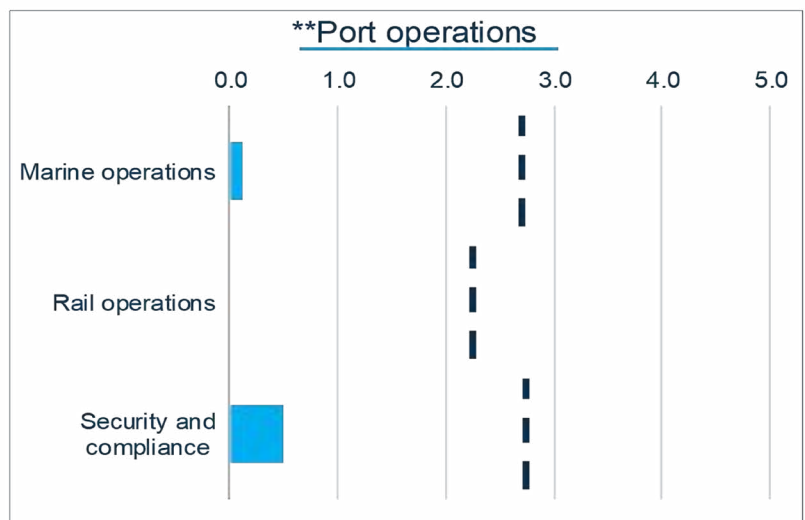
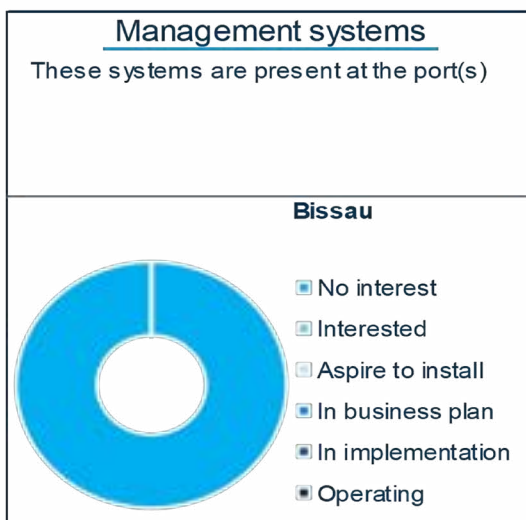
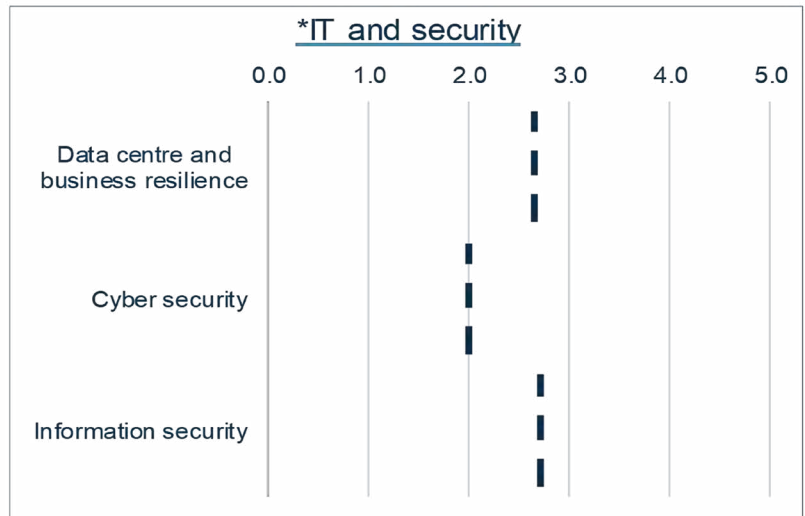
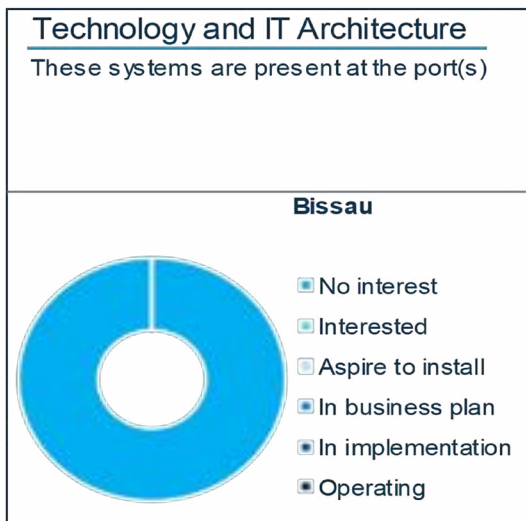
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
-	-	-	-	-
Title: Law on the establishment of ITMA exists but cannot be found.	Title: -	Title: -	Title: -	Title: -
Institute: The Technological Institute for the Modernization of the Administration (ITMA)	Institute: -	Institute: -	Institute: -	Institute: -

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Ivory Coast

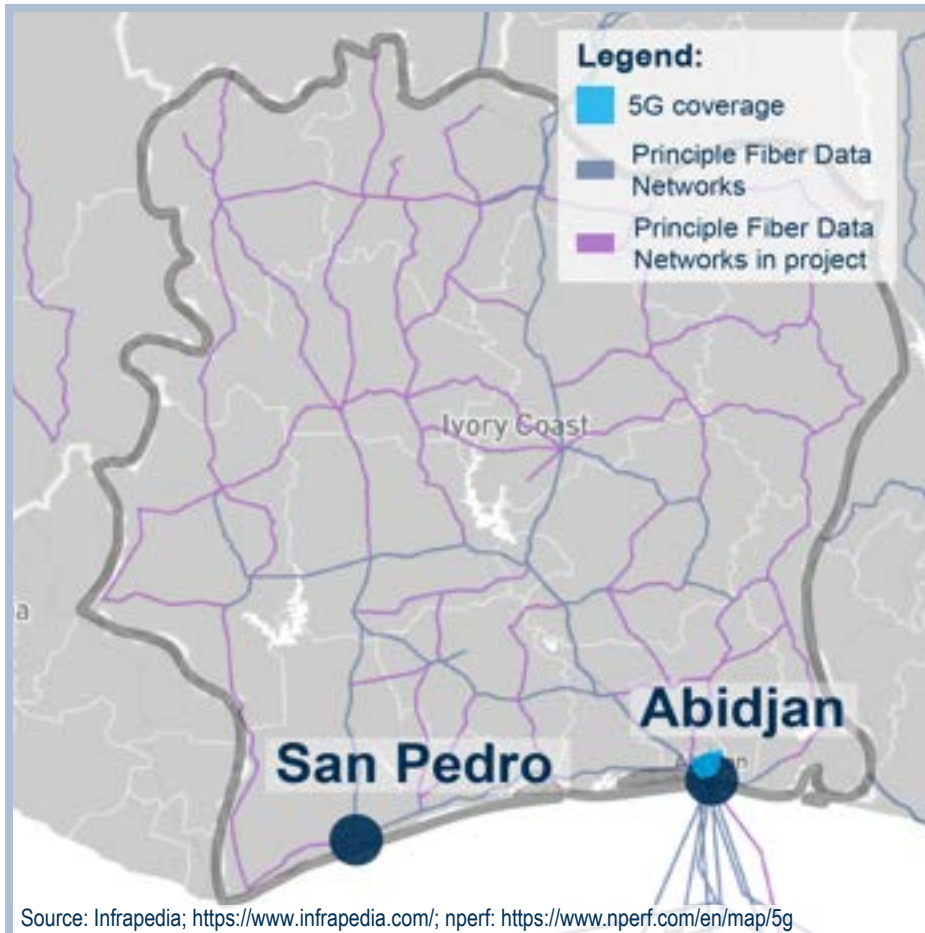
Country statistics

Population (millions):	27.5	International trade: 45% of GDP	Global Competitiveness Index: 48.1 WEF, 2019
GDP (2021):	US\$ 71.8 bn	Export: US\$ 15.9 billion Where 4.0% goes to African Nations	
GDP per capita (2021):	US\$ 2,613.4	Import: US\$ 17.7 billion Where 36.3% is from African Nations	
Human Capital Index (2020):	0.4		

Port statistics

	Abidjan	San Pedro		Port authorities:
Port model:	Tool/Landlord Port	Tool/Landlord Port		Abidjan: Port Autonome D 'Abidjan San Pedro: Port Autonome De San Pedro
Trade volumes:	25,700K	4,000K	Tonnes	
	730K	250K	TEU	
Vessels handled:	5,000	400	per annum	Maritime authority: Directorate of Maritime and Port Affairs

National ICT infrastructure



Network Readiness Index	39.6
Global Cybersecurity Index	67.8 2020
AIDI: ICT (2018)	20.6 African Infrastructure Development Index for ICT
Internet penetration	36.3% WB, 2019 % of population using the internet
	3.7% ↗ Avg annual growth WB, 2010-2020
Data centers	0 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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1.2

USAID, 0 = worldwide average

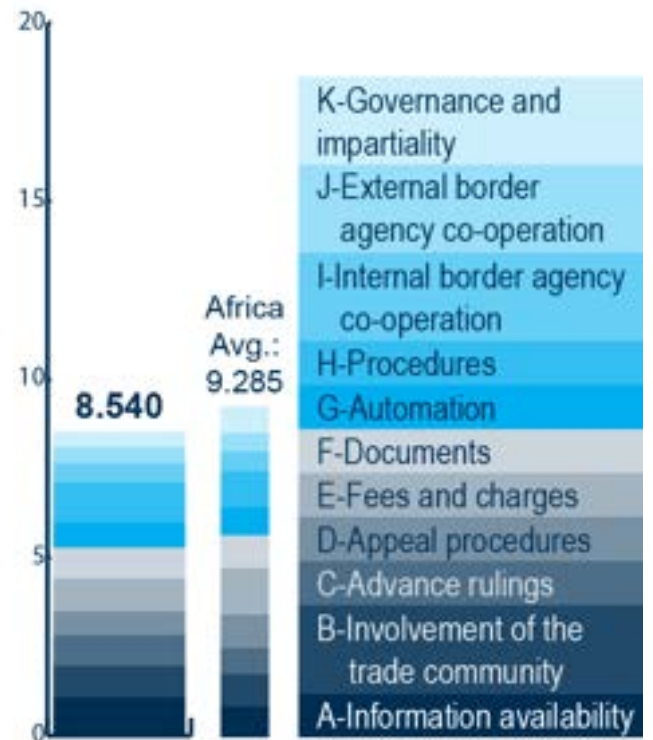
3.6

2021

Policies and digital Strategies

The National Development Plan 2021 - 2025

To accelerate economic transformation, develop human capital, foster private sector growth, promote inclusion and access to services, achieve balanced regional development and environmental preservation, and strengthen governance for social harmony and modernization.

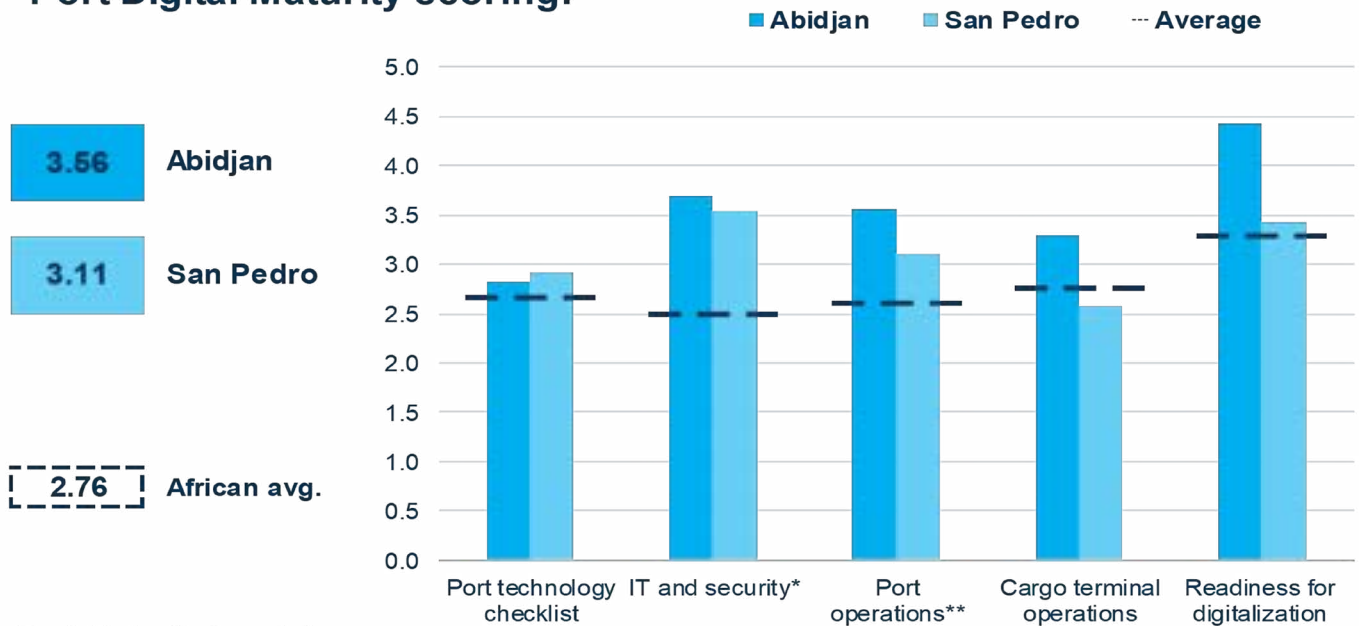


Digitalization legislation

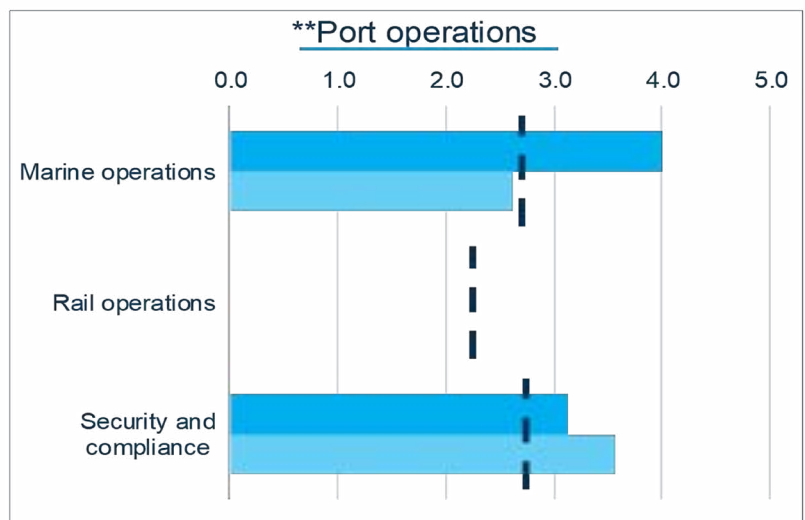
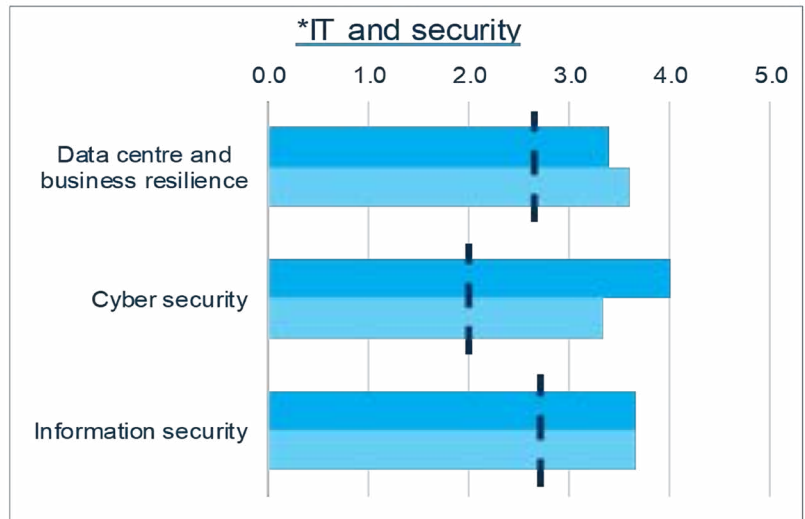
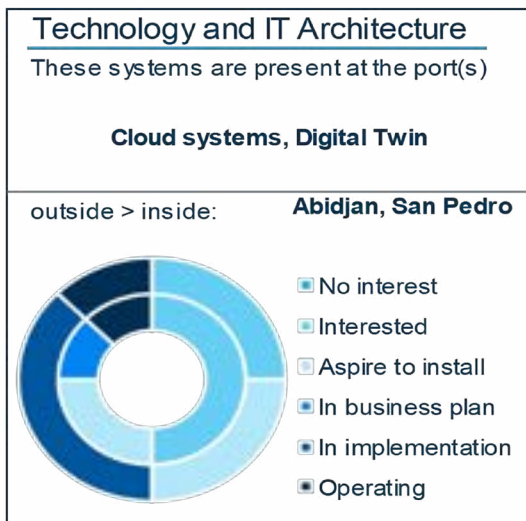
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
Law No. 2012-293	Law No. 2013-450	Law No. 2013-451	-	Act 36 of 2005
Title: Telecommunications and Information and Communication Technologies	Title: Law on the protection of personal data	Title: Fight Against Cybercrime	Title: -	Title: Electronic Communications Act
Institute: Telecommunications Regulatory Agency of Cote d'Ivoire (ARTCI)	Institute: The data protection body	Institute: Ivory Coast Police department	Institute: -	Institute: The Ministry of Communications and digital technologies

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Kenya

Country statistics

Population (millions):	53.0
GDP (2021):	US\$ 109.7 bn
GDP per capita (2021):	US\$ 2,069.7
Human Capital Index (2020):	0.5

International trade: **31% of GDP**

Export: **US\$ 11.4 billion**
Where 18.1% goes to African Nations

Import: **US\$ 23.6 billion**
Where 18.1% is from African Nations

Global Competitiveness Index:

54.1

WEF, 2019

Port statistics

	Mombasa	Lamu	
Port model:	Tool Port	Tool/Landlord Port	
Trade volumes:	34,500K	1	Tonnes
	1,400K	1	TEU
Vessels handled:	1,700	1	per annum

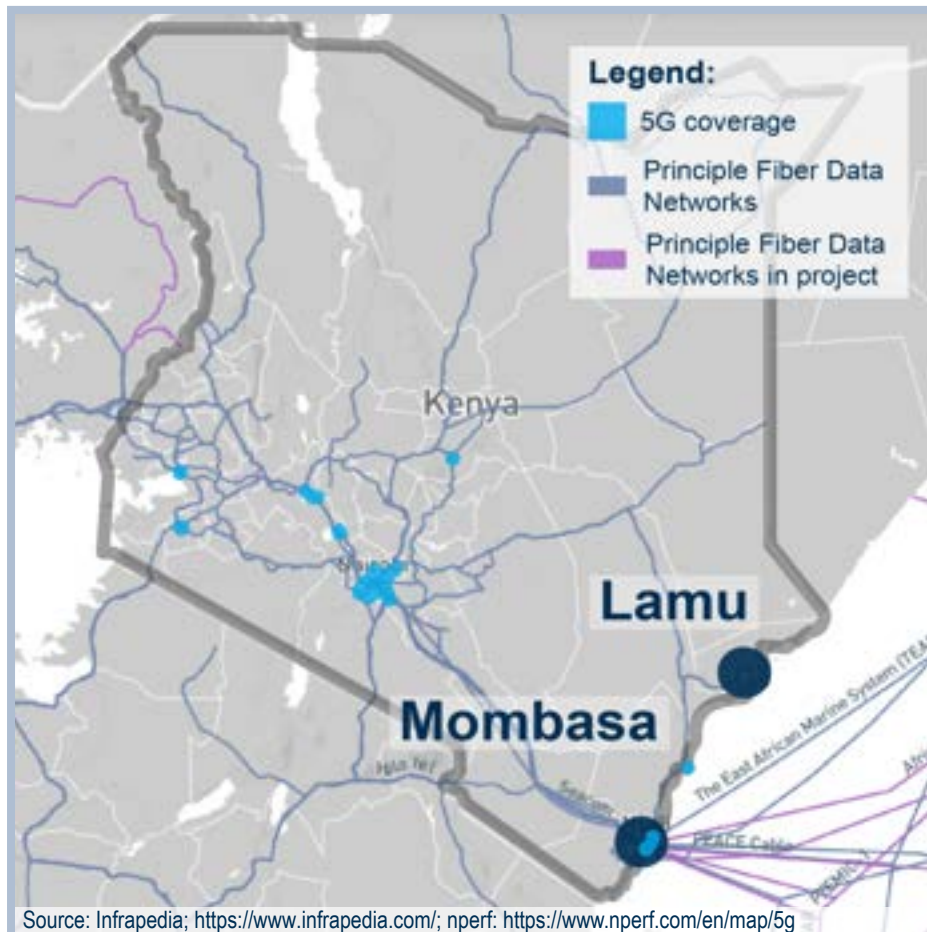
Port authorities:

Mombasa	Kenya Ports Authority (KPA)
Lamu	

Maritime authority:

Kenya Maritime Authority

National ICT infrastructure



Network Readiness Index

46.9

Global Cybersecurity Index

81.7 2020

AIDI: ICT (2018)

29.9 African Infrastructure Development Index for ICT

Internet penetration

29.5% WB, 2020
% of population using the internet

2.2%
Avg annual growth WB, 2010-2020

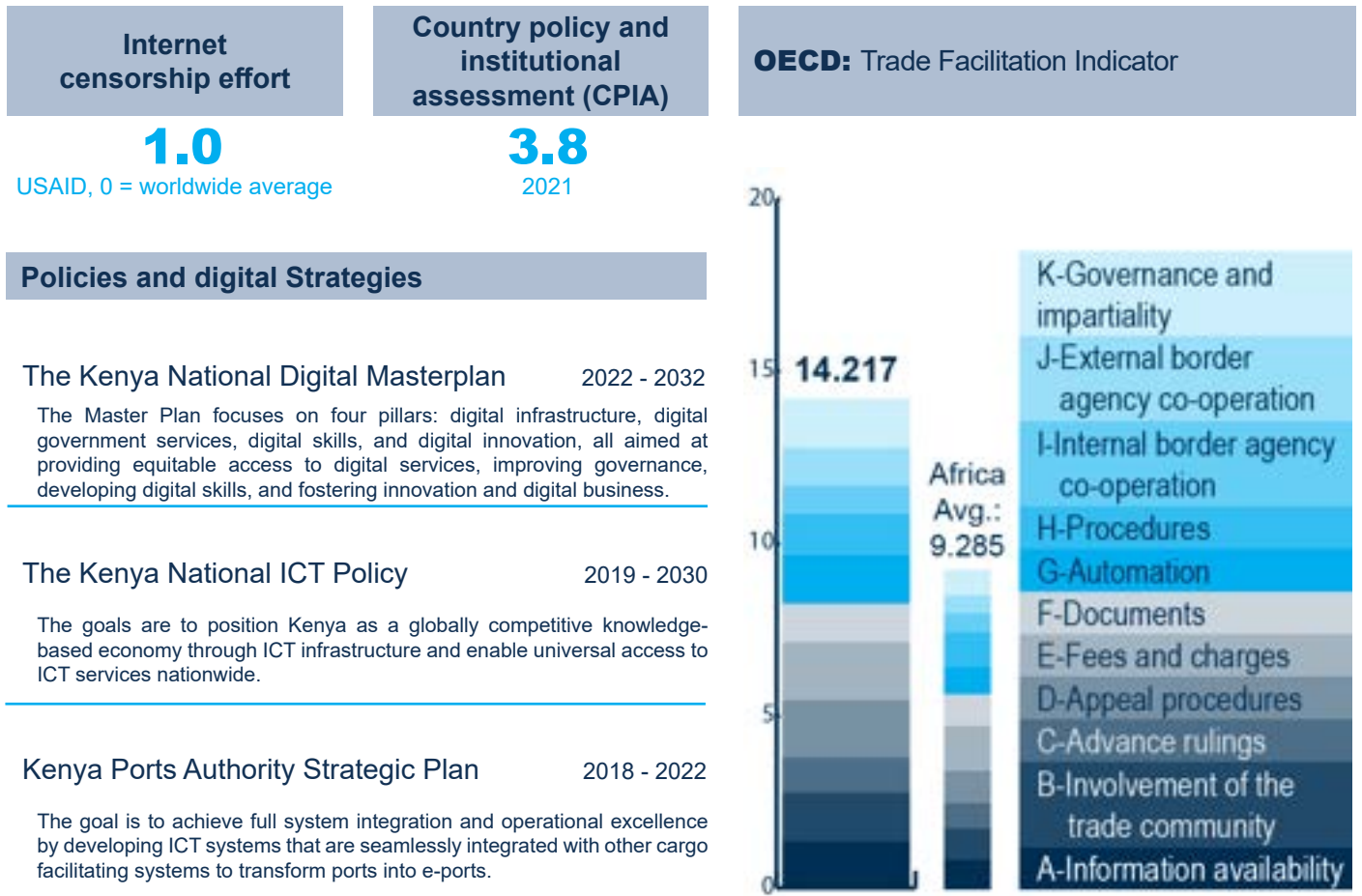
Data centers

9 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework



Policies and digital Strategies






- The Kenya National Digital Masterplan** 2022 - 2032

The Master Plan focuses on four pillars: digital infrastructure, digital government services, digital skills, and digital innovation, all aimed at providing equitable access to digital services, improving governance, developing digital skills, and fostering innovation and digital business.
- The Kenya National ICT Policy** 2019 - 2030

The goals are to position Kenya as a globally competitive knowledge-based economy through ICT infrastructure and enable universal access to ICT services nationwide.
- Kenya Ports Authority Strategic Plan** 2018 - 2022

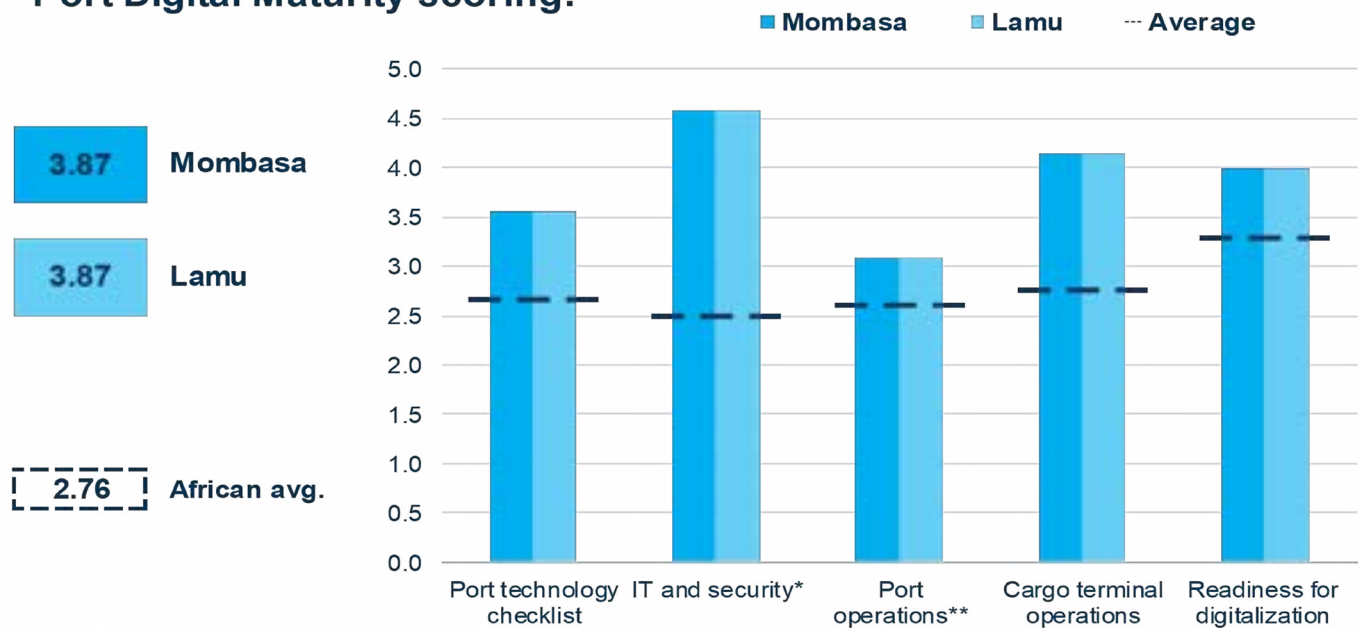
The goal is to achieve full system integration and operational excellence by developing ICT systems that are seamlessly integrated with other cargo facilitating systems to transform ports into e-ports.

Digitalization legislation

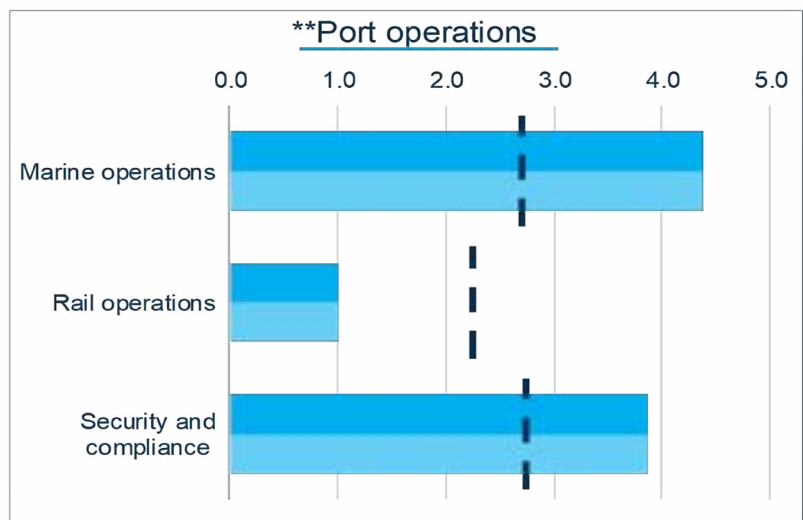
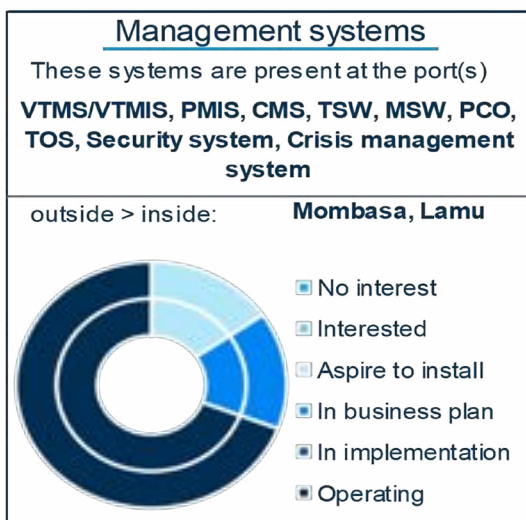
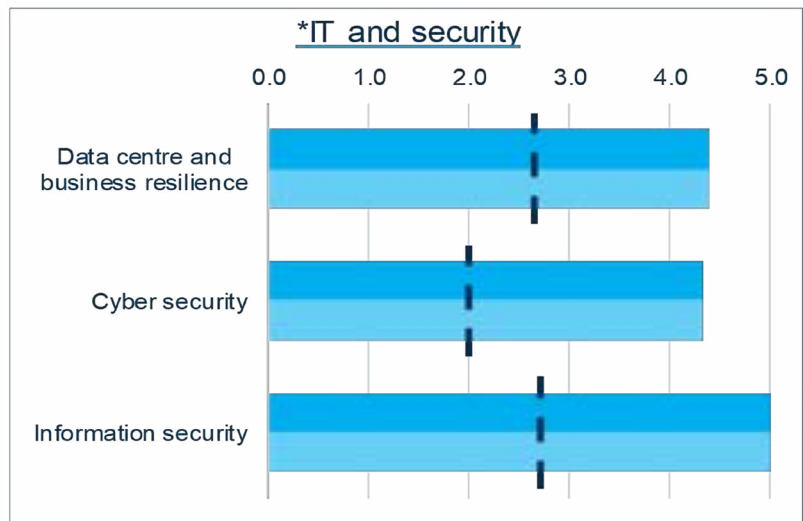
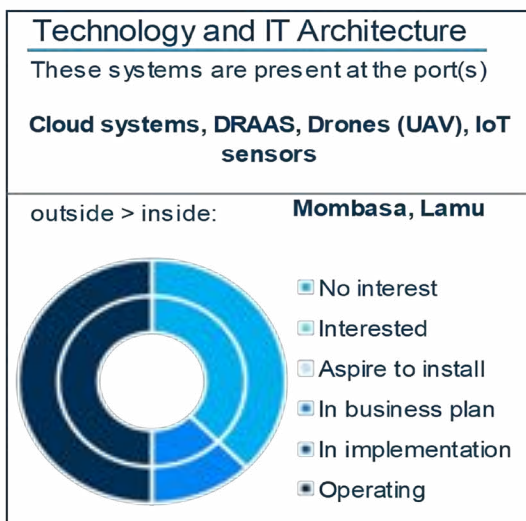
 <p>ICT Authority</p> <p>Act No. 1 of 2009</p> <p>Title: Kenya Information and Communications Act</p> <p>Institute: Communications Authority of Kenya</p>	 <p>Data Protection</p> <p>Act, No. 24. Of 2019</p> <p>Title: Data Protection Act</p> <p>Institute: Data Protection Commissioner</p>	 <p>Cybercrimes</p> <p>Act, No. 25. Of 2018</p> <p>Title: Computer Misuse and cybercrimes Act</p> <p>Institute: National Computer and Cybercrimes Co-ordination Committee</p>	 <p>Single Window</p> <p>Act No. 15 of 2021</p> <p>Title: National electronic single window system bill</p> <p>Institute: The electronic single window Agency</p>	 <p>Other</p> <p>Act No. 28 of 2013</p> <p>Title: Science, Technology and Innovation Act</p> <p>Institute: The Kenya National Innovation Agency</p>
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Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Liberia

Country statistics

Population (millions):	5.2
GDP (2021):	US\$ 3.5 bn
GDP per capita (2021):	US\$ 675.7
Human Capital Index (2020):	0.3

International trade: - of GDP

Export: US\$ 0.9 billion
Where 2.1% goes to African Nations
Import: US\$ 1.8 billion
Where 0.5% is from African Nations

Global Competitiveness Index:

40.5
WEF, 2018

Port statistics

Monrovia		
Port model:	Landlord Port	
Trade volumes:	600K	Tonnes
	78K	TEU
Vessels handled:	386	per annum

Port authorities:

Monrovia	National Ports Authority (NPA)
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Maritime authority:

Liberian Maritime Authority

National ICT infrastructure



Network Readiness Index

34.2 Region avg.

Global Cybersecurity Index

9.7 2020

AIDI: ICT (2018)

11.0 African Infrastructure Development Index for ICT

Internet penetration

25.6% WB, 2020
% of population using the internet

2.3%
Avg annual growth WB, 2010-2020

Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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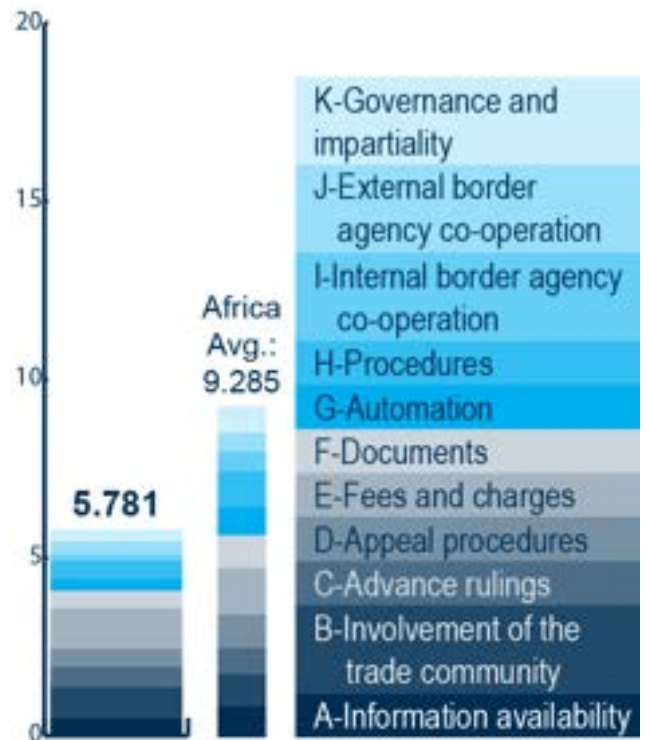
0.4
USAID, 0 = worldwide average

3.0
2021






Policies and digital Strategies

Liberia information and communications technology (ICT) policy 2019 - 2024

To expand ICT infrastructure, ensure universal access and broadband, foster e-service development, support innovation, drive inclusion, boost e-commerce, improve access to information, and effectively manage the country internet domain for Liberia's ICT development.

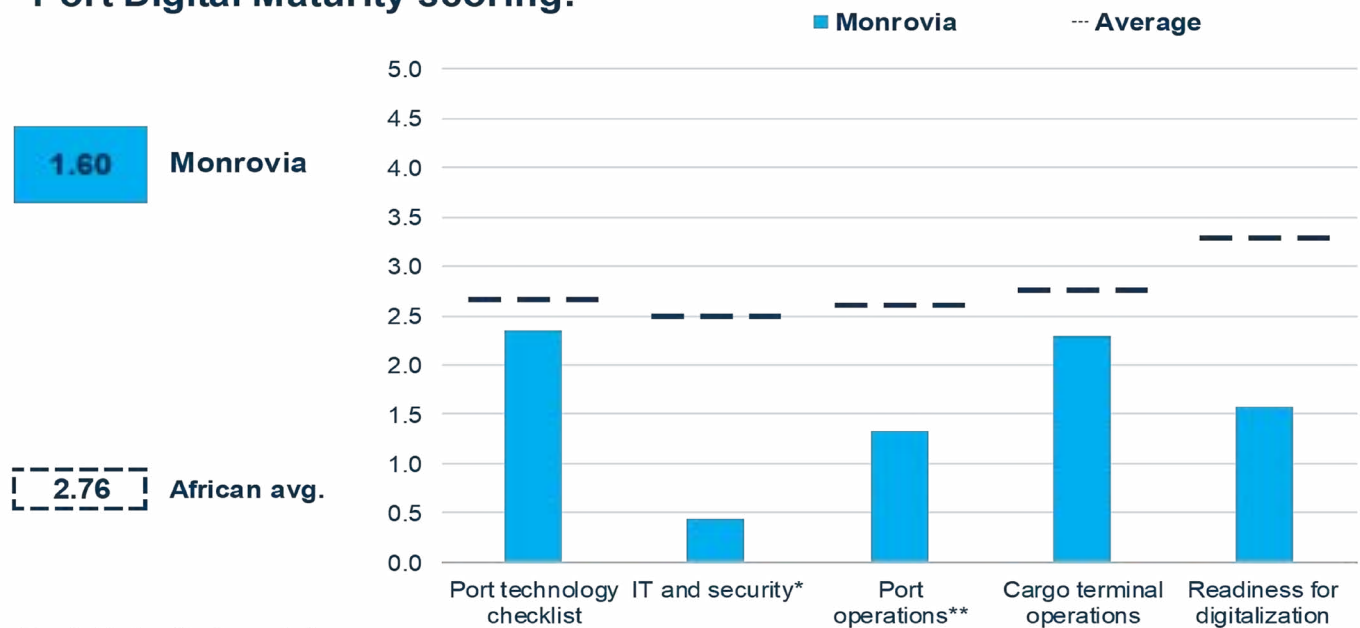


Digitalization legislation

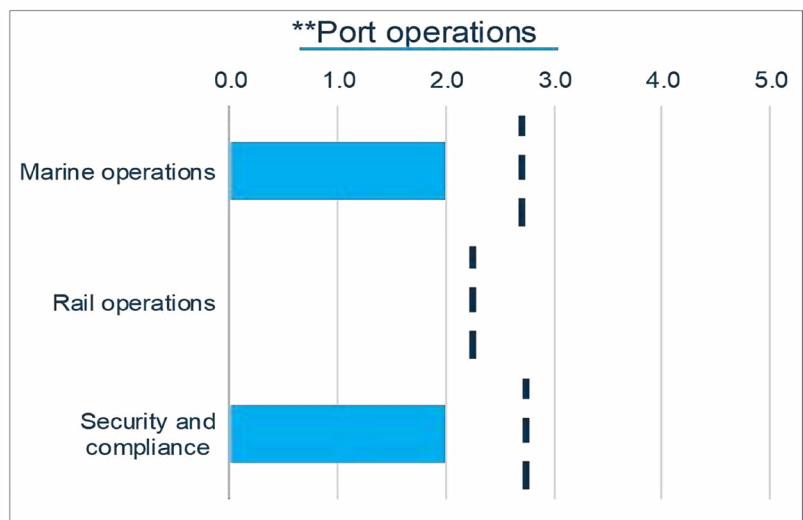
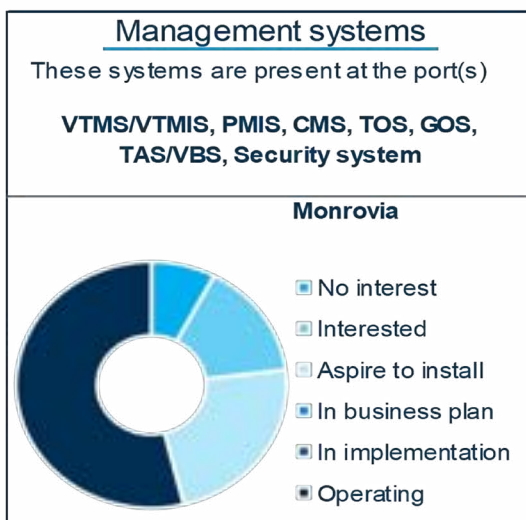
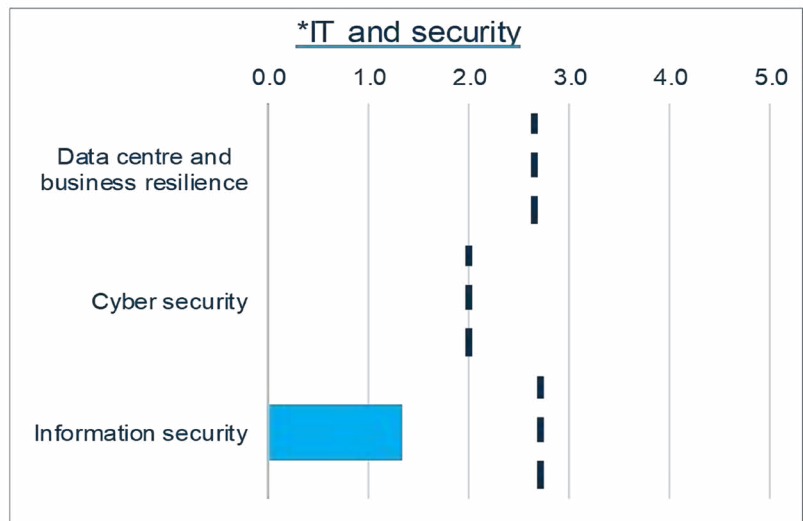
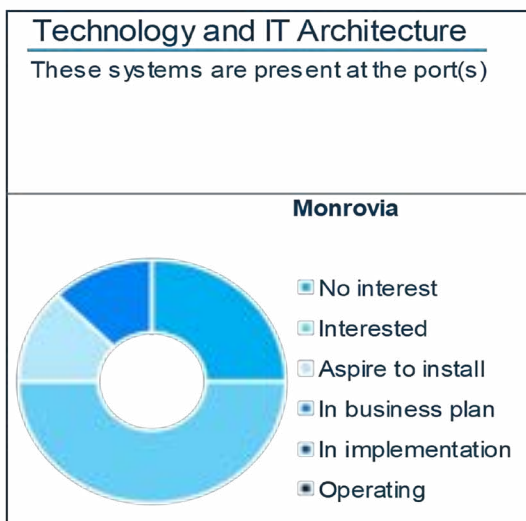
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Telecommunications Act of 2007 Title: Telecommunications Act Institute: Liberia Telecommunications Authority	 - Title: - Institute: -	 - Title: - Institute: -	 - Title: - Institute: -	 Freedom of Information Act of 2010 Title: Freedom of Information Act Institute: Independent Information Commissioner

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Madagascar

Country statistics

Population (millions):	28.9
GDP (2021):	US\$ 14.6 bn
GDP per capita (2021):	US\$ 503.4
Human Capital Index (2020):	0.4

International trade: **54% of GDP**

Export: **US\$ 3.3 billion**
Where 4.9% goes to African Nations

Import: **US\$ 5.6 billion**
Where 9.7% is from African Nations

Global Competitiveness Index:

42.9

WEF, 2019

Port statistics

Toamasina		
Port model:	Tool Port	
Trade volumes:	600K	Tonnes
	78K	TEU
Vessels handled:	386	per annum

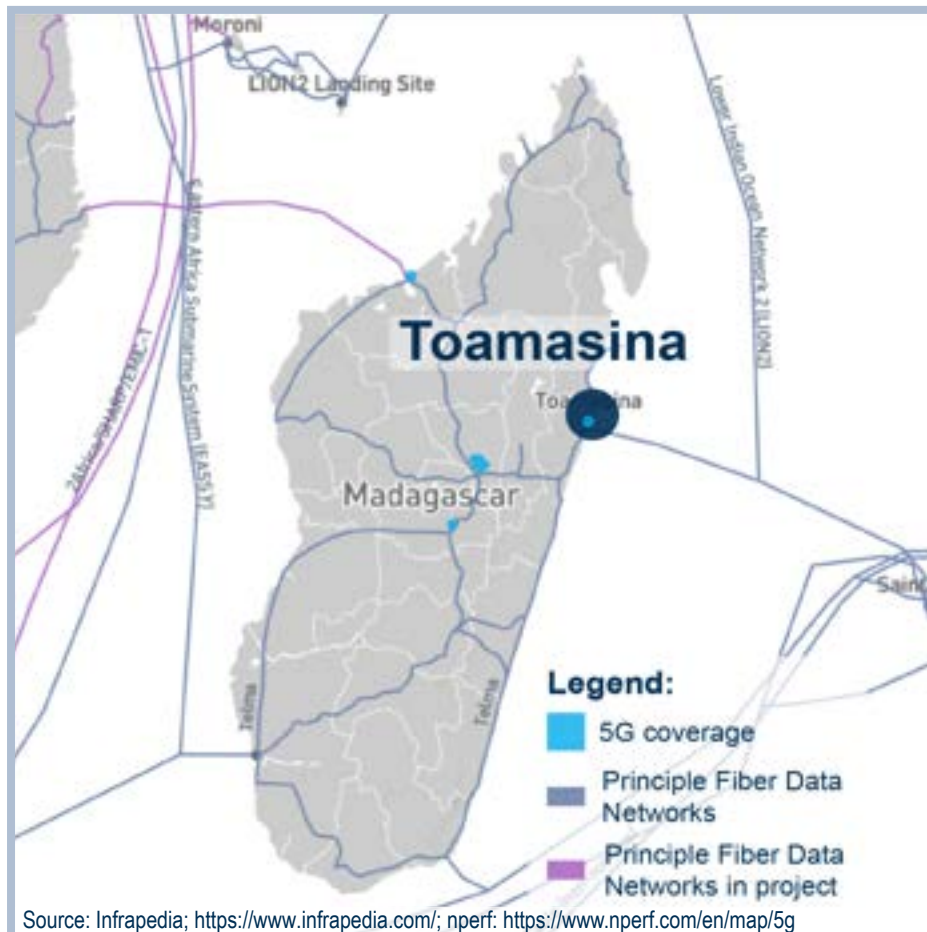
Port authorities:

Toamasina	Société du Port à gestion Autonome de Toamasina (SPAT)
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Maritime authority:

Agence Portuaire Maritime et Fluviale (APMF)

National ICT infrastructure



Network Readiness Index

30.5

Global Cybersecurity Index

23.3 2020

AIDI: ICT (2018)

6.5

African Infrastructure Development Index for ICT

Internet penetration

15.0% WB, 2020

% of population using the internet

1.7%

Avg annual growth WB, 2010-2020

Data centers

1

Colocation data centres in the country

Cloud hosting centers

0

Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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1.4

USAID, 0 = worldwide average

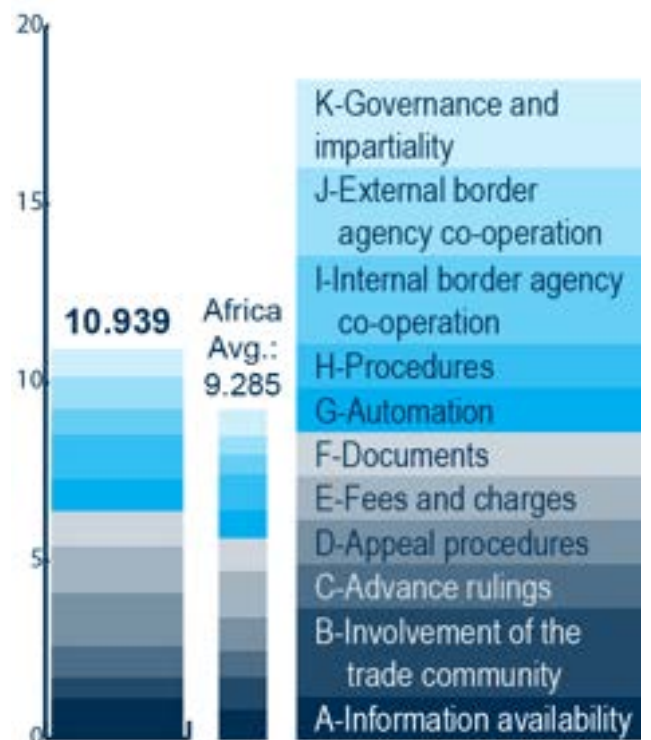
3.3

2021

Policies and digital Strategies

New National e-Government Strategy 2019 -

The goals are to provide accessible public services, enhance transparency, improve anti-corruption efforts, and ensure transparency in state revenue and expenditure.

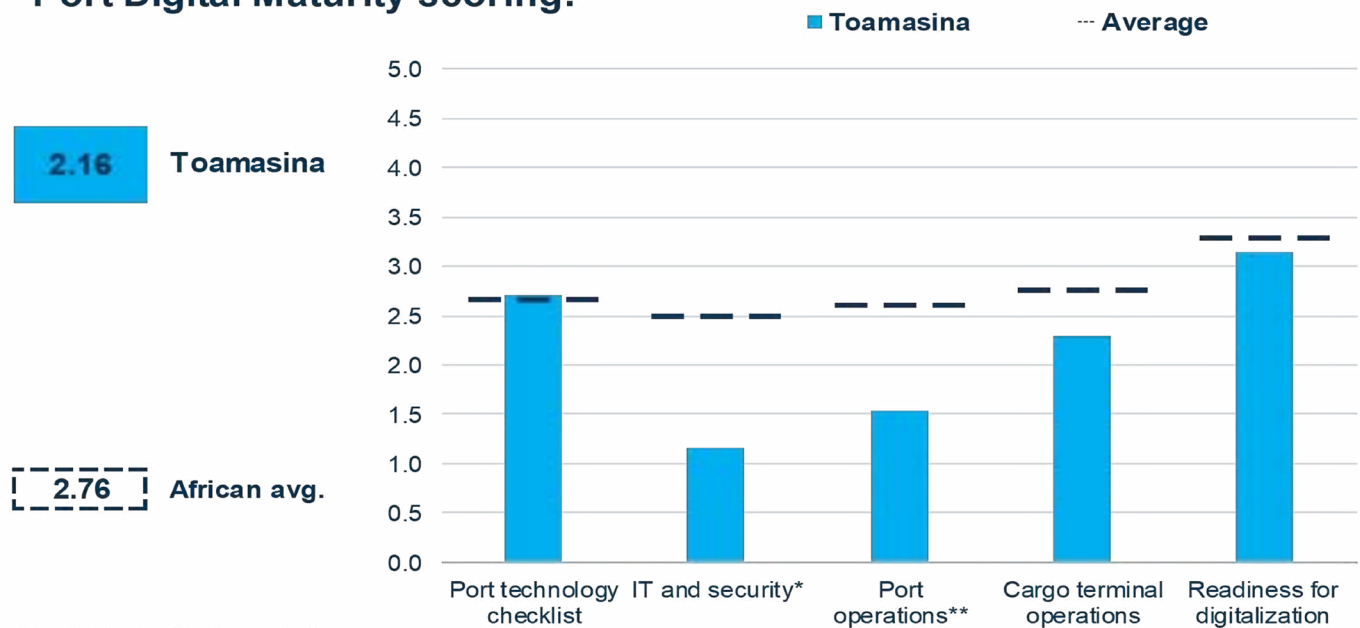


Digitalization legislation

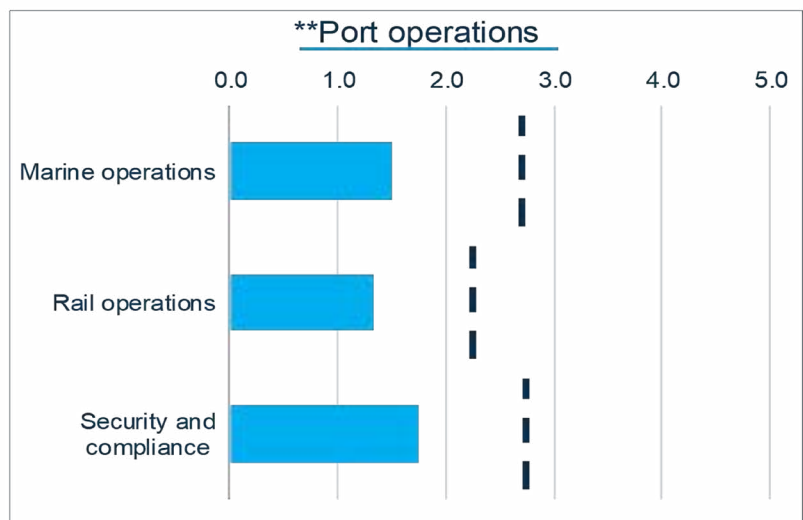
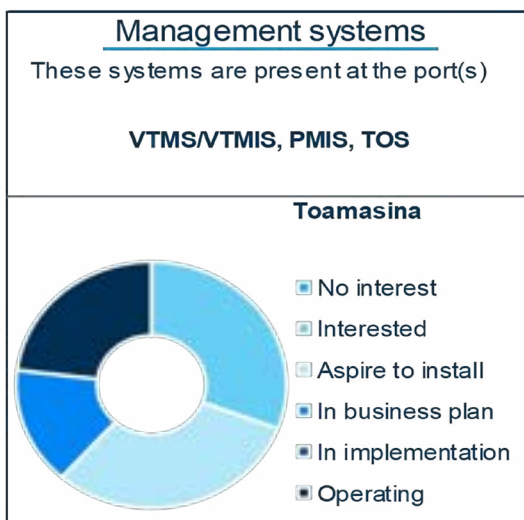
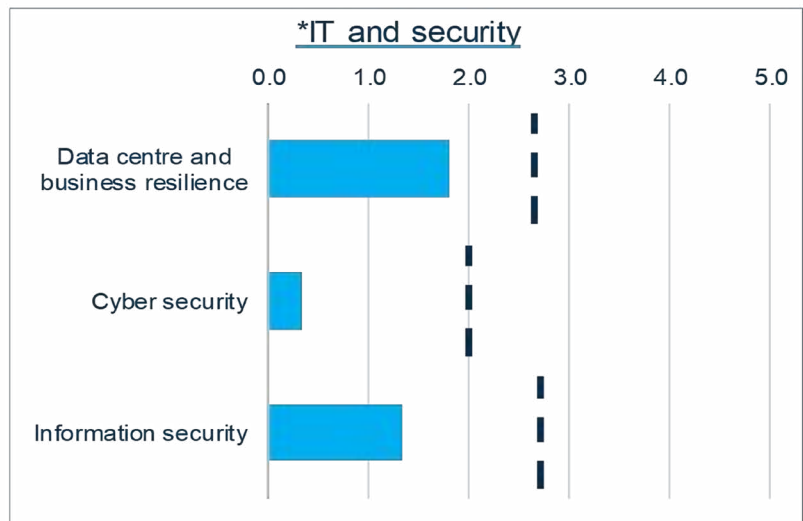
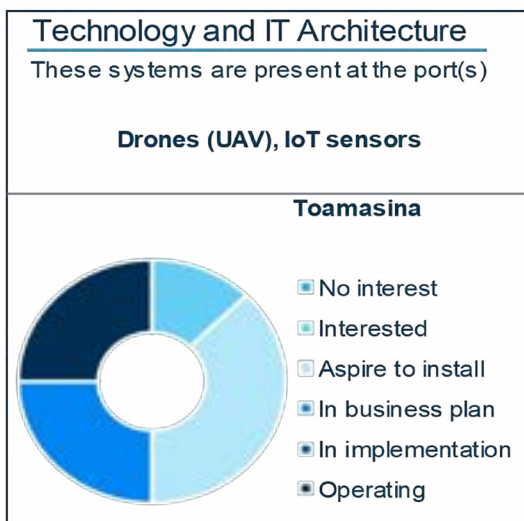
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
-	Law No. 2014 – 038	Law No. 2014-006	-	Law No. 2014-024
Title: -	Title: On the protection of personal data	Title: On the fight against cybercrime	Title: -	Title: On electronic transactions
Institute: -	Institute: The Madagascar information commission ('CMIL')	Institute: The Cybercrime Unit of The Ministry of Communication and Culture	Institute: -	Institute: Steering Committee for the Development of Electronic Commerce

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Mauritania

Country statistics

Population (millions):	4.6
GDP (2021):	US\$ 10.0 bn
GDP per capita (2021):	US\$ 2,166.0
Human Capital Index (2020):	0.4

International trade: **100% of GDP**

Export: **US\$ 4.5 billion**
Where 8.3% goes to African Nations

Import: **US\$ 4.3 billion**
Where 12.1% is from African Nations

Global Competitiveness Index:

40.9

WEF, 2018

Port statistics

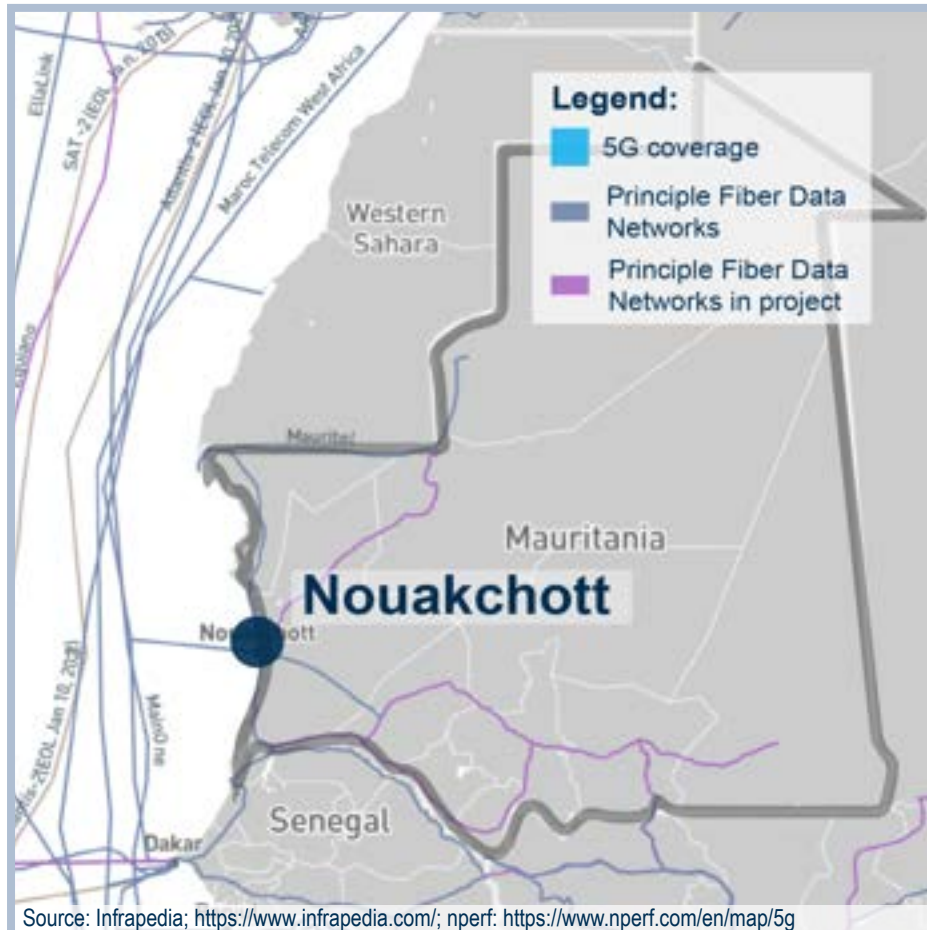
Nouakchott		
Port model:	Tool/Landlord Port	
Trade volumes:	5,000K	Tonnes
	1,000	TEU
Vessels handled:	460	per annum

Port authorities:

Nouakchott Port Autonome de Nouakchott Port de l'Amitié (PANPA)

Maritime authority:

National ICT infrastructure



Network Readiness Index

36.4 Region avg.

Global Cybersecurity Index

18.9 2020

AIDI: ICT (2018)

14.9 African Infrastructure Development Index for ICT

Internet penetration

40.8% WB, 2020
% of population using the internet

3.7%
Avg annual growth WB, 2010-2020

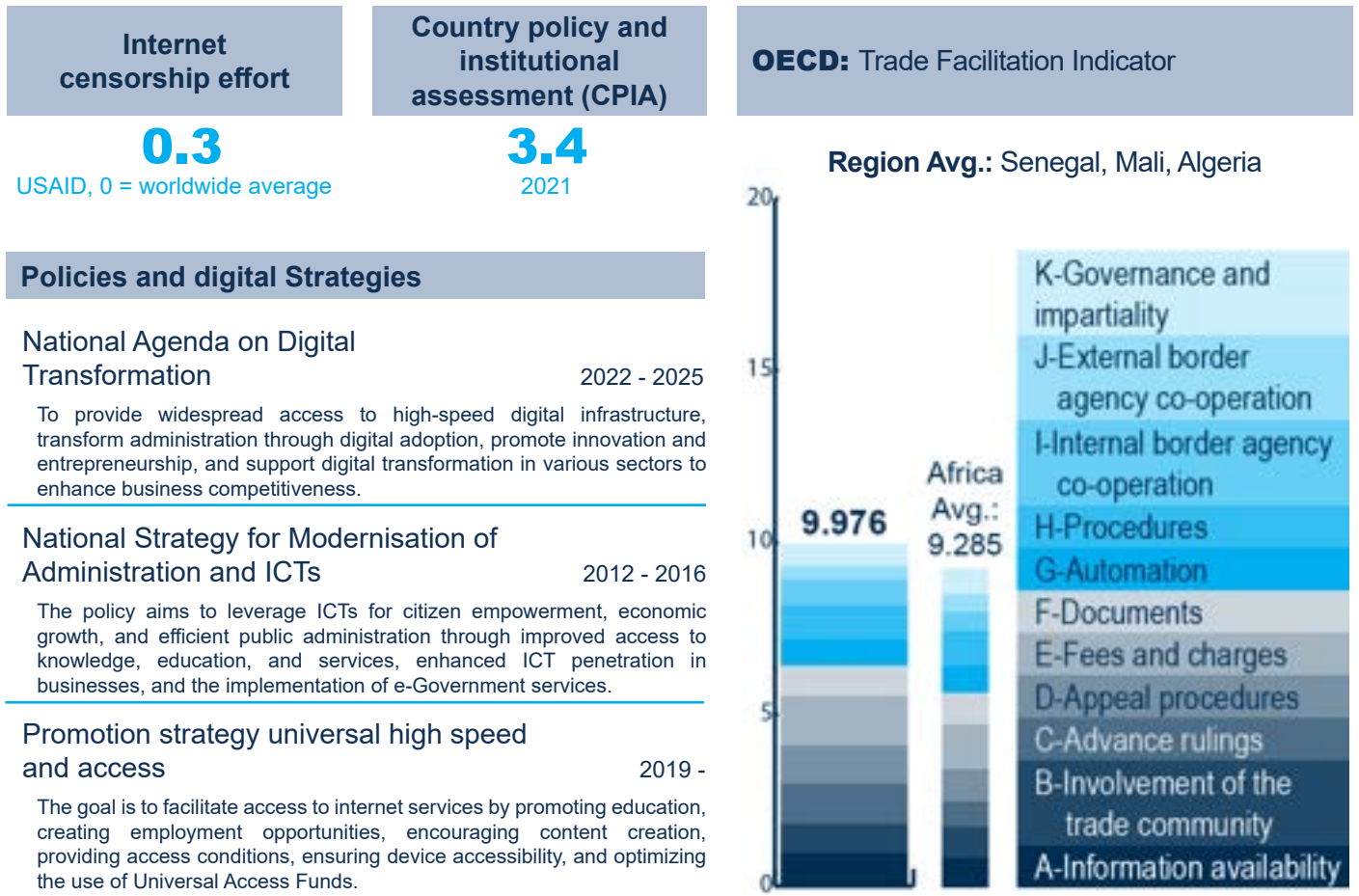
Data centers

0 Colocation data centres in the country






Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework



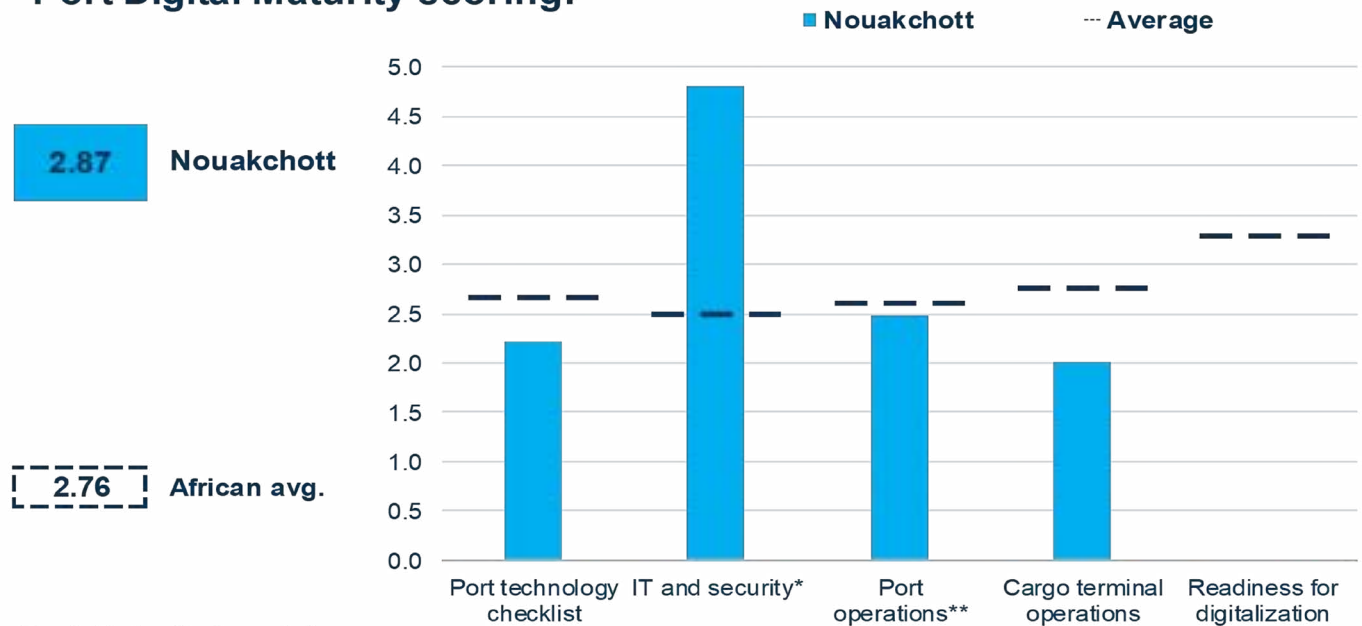
Digitalization legislation

 ICT Authority Law No. 19-1999 Title: Telecommunications Regulatory Act Institute: The regulation Authority	 Data Protection Law No. 2017-020 Title: On the protection of the personal data Institute: Personal Data Protection Authority	 Cybercrimes Law No. 2016-007 Title: Law related to Cybercrime Institute: Ministry of employment, professional training and information and communication technologies.	 Single Window Law No. 2012-052: Decree n ° 2012-282 Title: Order establishing the one-stop shop (2.4): Investment Code - One-stop shop Institute: Mauritania customs	 Other - Title: - Institute: -

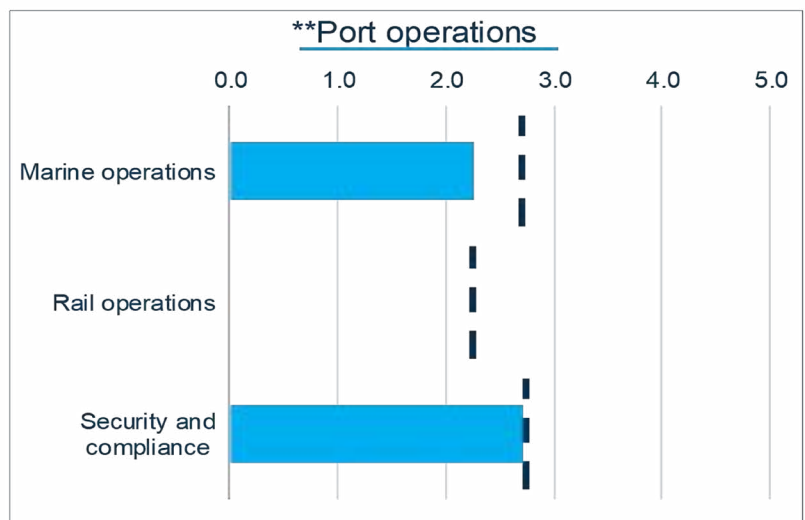
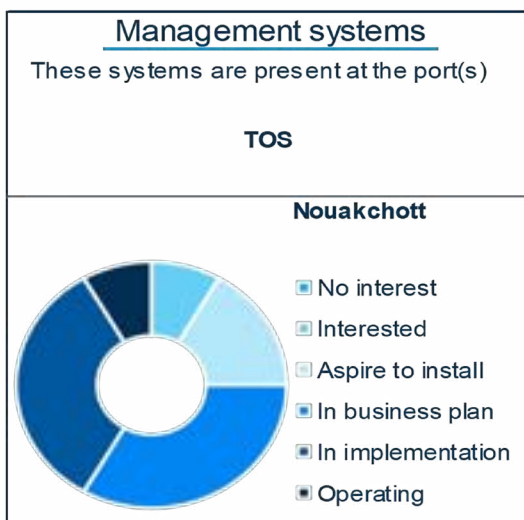
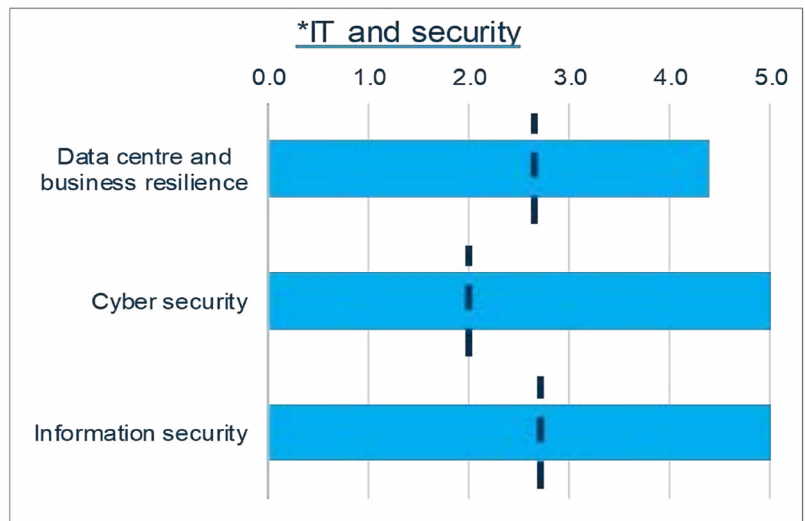
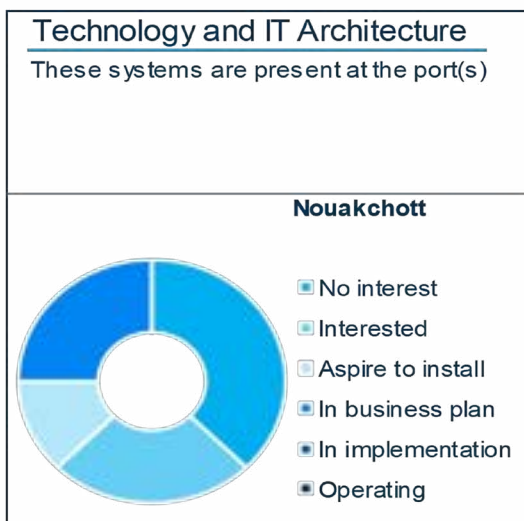
Port IT systems and services

Note; Data is not obtained from an interview but from desktop research and expert judgement

Port Digital Maturity scoring:



Port Maturity breakdown:



Mauritius

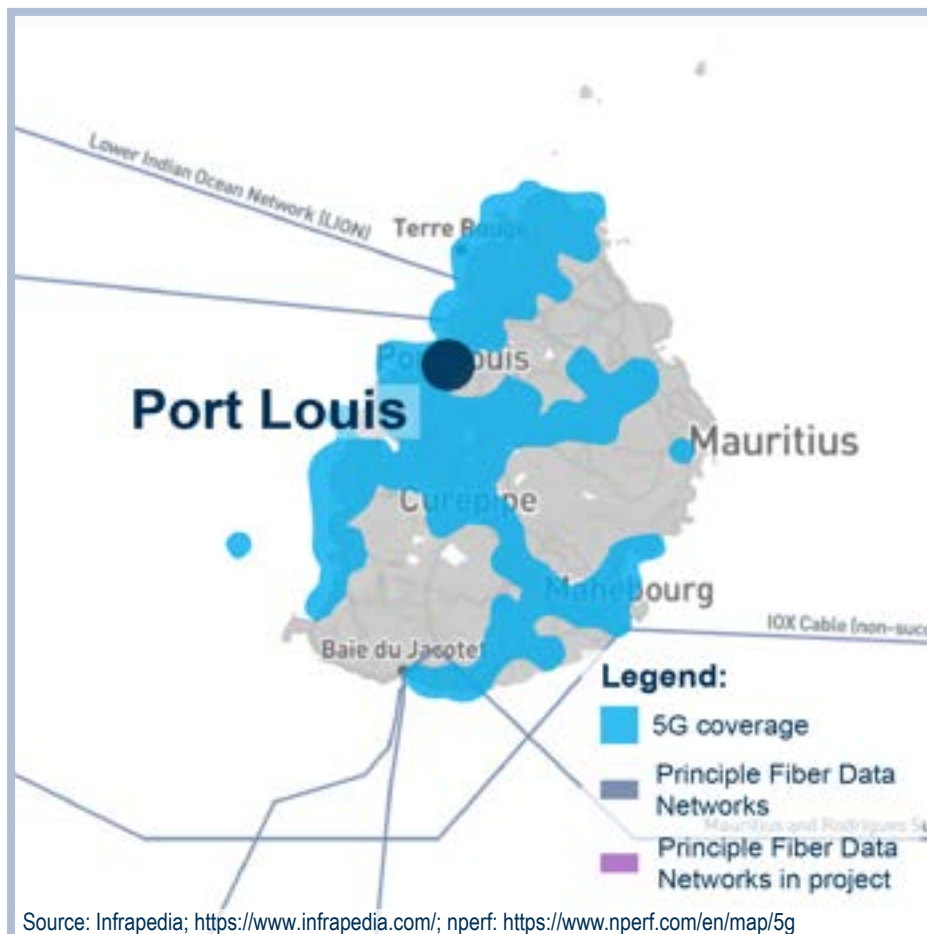
Country statistics

Population (millions):	1.3	International trade: 98% of GDP	Global Competitiveness Index: 64.3 WEF, 2019
GDP (2021):	US\$ 11.5 bn	Export: US\$ 3.2 billion Where 37.1% goes to African Nations	
GDP per capita (2021):	US\$ 9,062.7	Import: US\$ 6.6 billion Where 21.7% is from African Nations	
Human Capital Index (2020):	0.6		

Port statistics

Port Louis			Port authorities:
Port model:	Landlord/private Port		Port Louis: Mauritius Ports Authority (MPA)
Trade volumes:	7,700K Tonnes		Maritime authority: Mauritius Ports Authority (MPA)
	380K TEU		
Vessels handled:	3,200	per annum	

National ICT infrastructure



Network Readiness Index	47.9
Global Cybersecurity Index	96.9 2020
AIDI: ICT (2018)	58.7 African Infrastructure Development Index for ICT
Internet penetration	64.9% WB, 2020 % of population using the internet
	3.7% ↑ Avg annual growth WB, 2010-2020
Data centers	11 Colocation data centres in the country
Cloud hosting centers	1 Providers offering Infrastructure as a Service

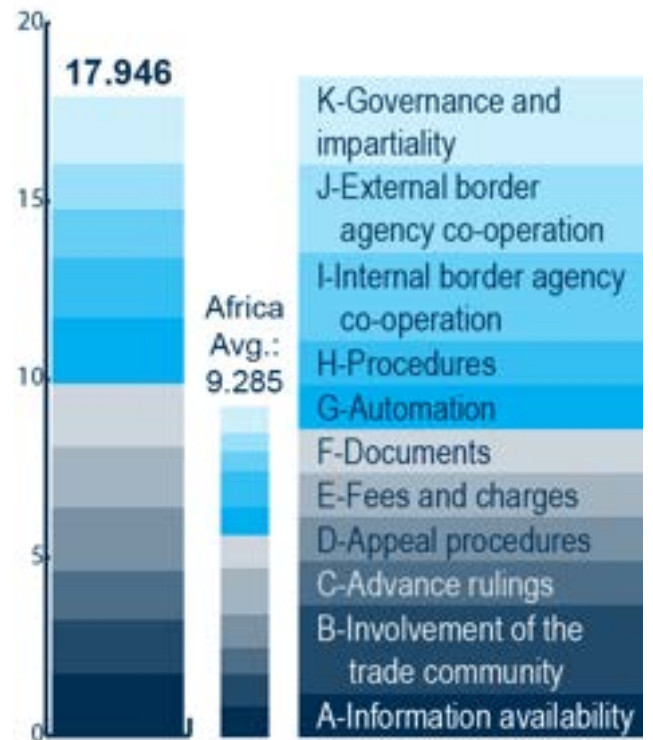
Institutional Framework

Internet censorship effort 0.9 USAID, 0 = worldwide average	Country policy and institutional assessment (CPIA) 3.0 2021, Region avg.	OECD: Trade Facilitation Indicator
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Policies and digital Strategies

Digital Mauritius 2030 - 2030

The goals include enhancing education, promoting emerging technologies, facilitating business, improving ICT infrastructure and cybersecurity, simplifying administrative procedures, attracting foreign workers, and enabling digital services and data analysis.

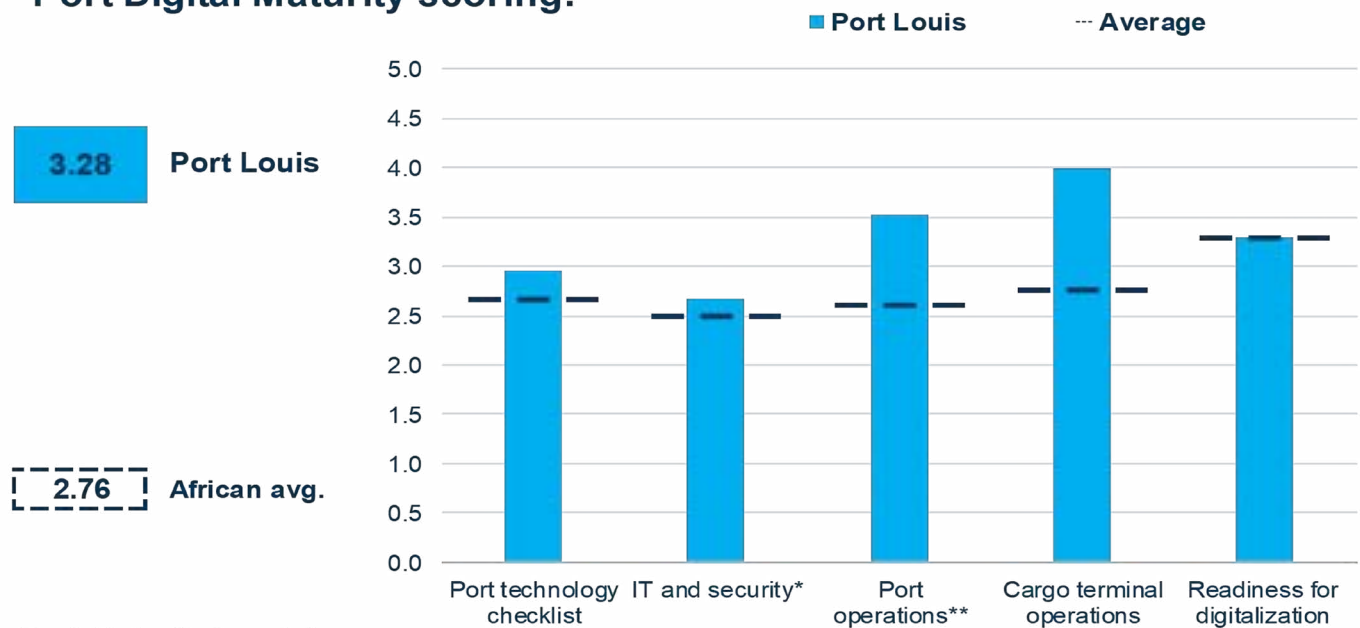


Digitalization legislation

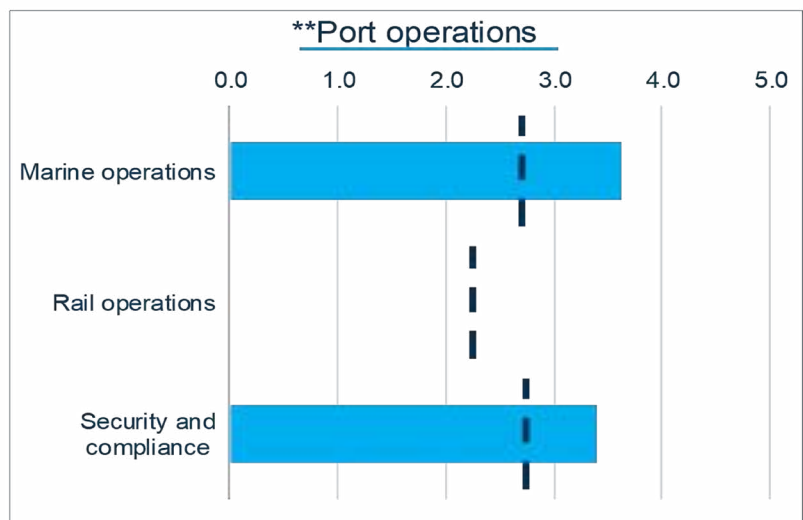
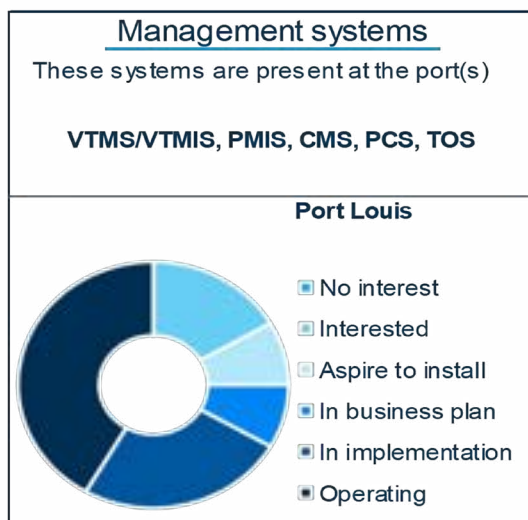
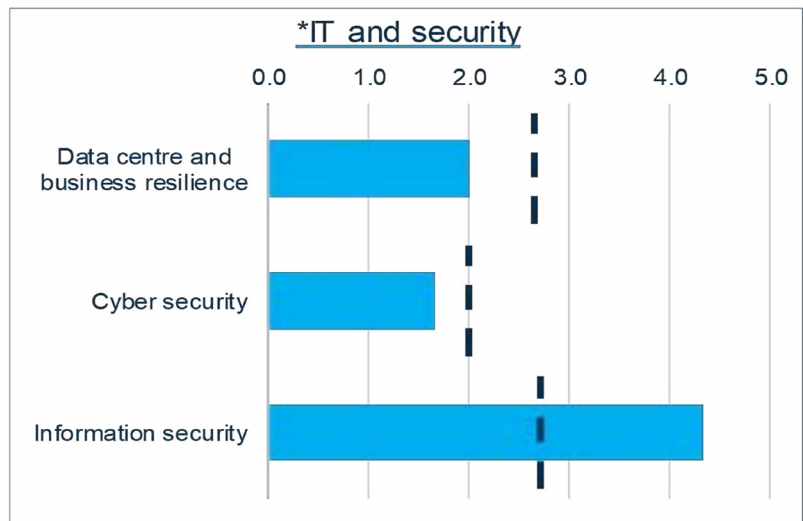
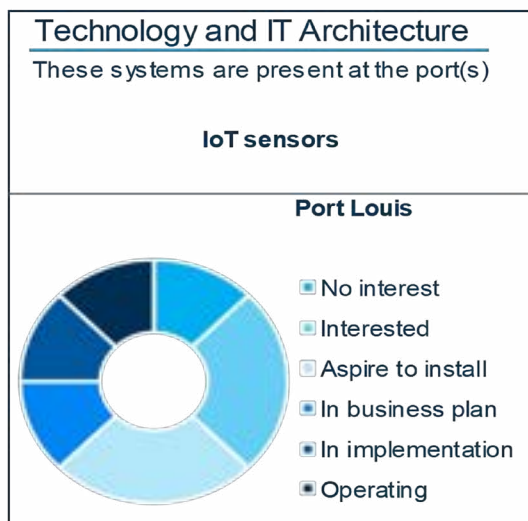
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
Act 44/2001	Data Protection Act 2017	Law No. 16 of 2021	-	-
Title: Information And Communication Technologies Act	Title: Data protection Act	Title: The Cybersecurity and Cybercrime Act	Title: -	Title: -
Institute: ICT Board	Institute: Data Protection Office	Institute: -	Institute: -	Institute: -

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Mozambique

Country statistics

Population (millions):	32.1
GDP (2021):	US\$ 15.8 bn
GDP per capita (2021):	US\$ 491.8
Human Capital Index (2020):	0.4

International trade: **100% of GDP**

Export: **US\$ 6.3 billion**
Where 15.7% goes to African Nations

Import: **US\$ 11.1 billion**
Where 38.3% is from African Nations

Global Competitiveness Index:

38.1

WEF, 2019

Port statistics

	Maputo	Nacala	Beira	
Port model:	Private Port	Landlord port	Landlord port	
Trade volumes:	22,000K	11,400K	3,000K	Tonnes
	162K	86K	256K	TEU
Vessels handled:	1,400	500	1,870	per annum

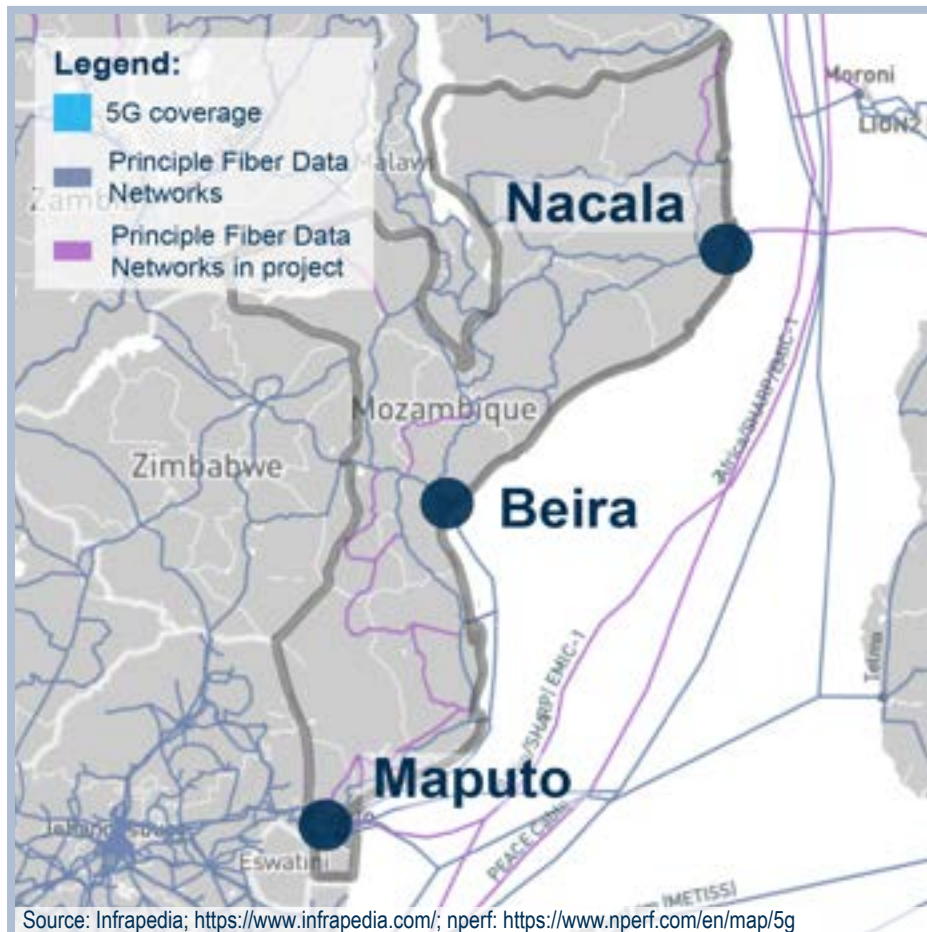
Port authorities:

Maputo	MPDC
Nacala	CFM
Beira	Cornelder

Maritime authority:

The Mozambican National Maritime Authority (INAMAR)

National ICT infrastructure



Network Readiness Index

28.2

Global Cybersecurity Index

24.2 2020

AIDI: ICT (2018)

11.2 African Infrastructure Development Index for ICT

Internet penetration

16.5% WB, 2020
% of population using the internet

1.2%
Avg annual growth WB, 2010-2020

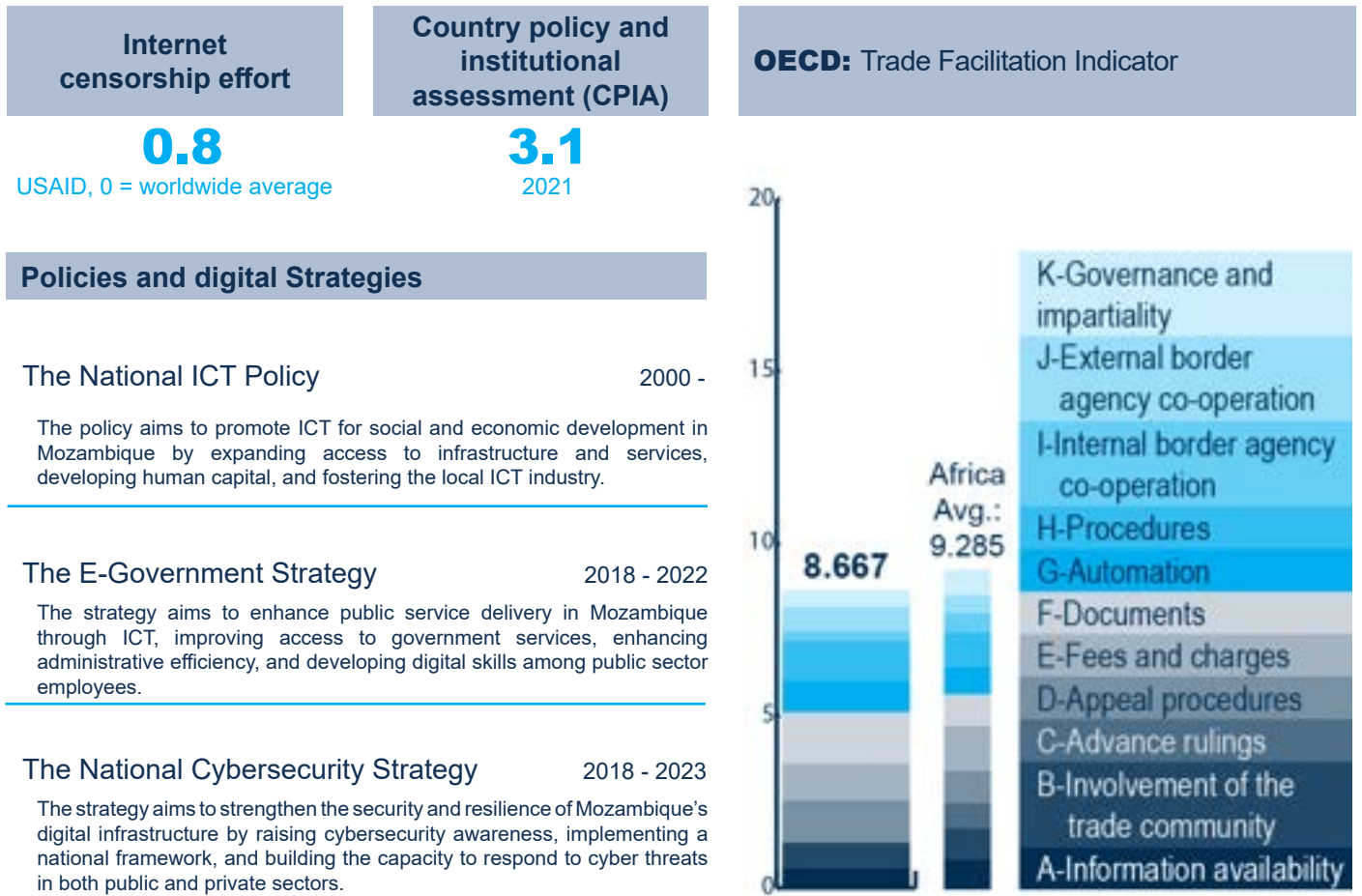
Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

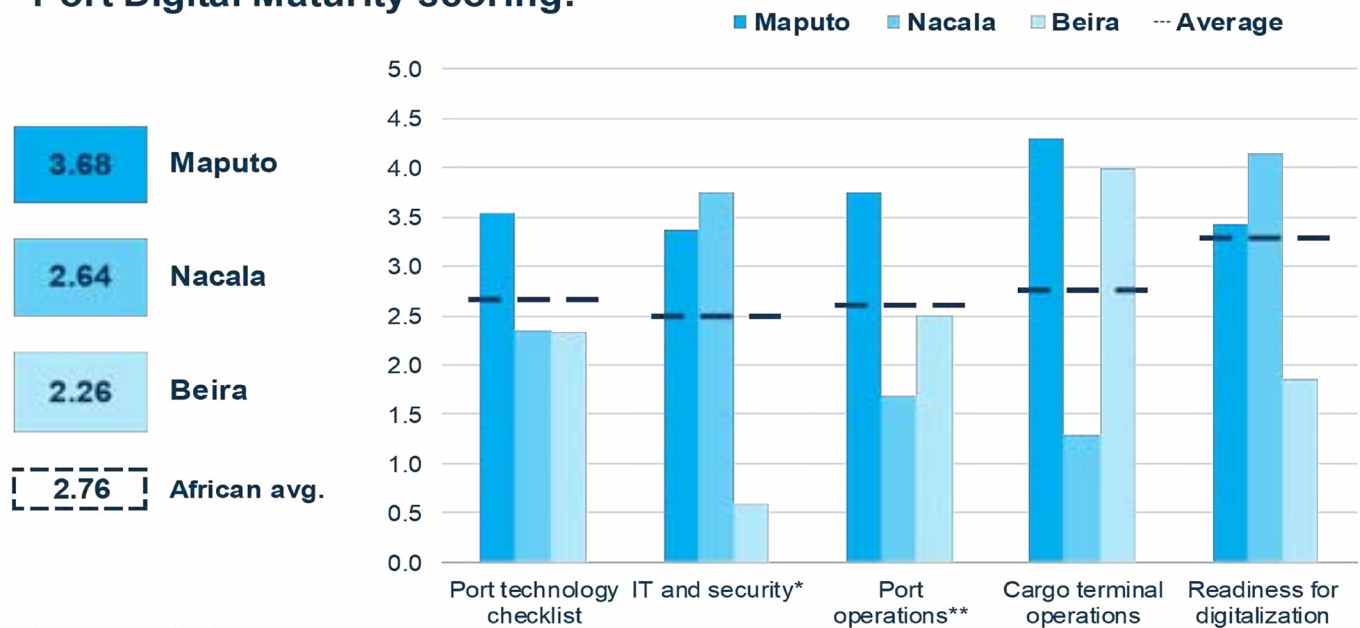


Digitalization legislation

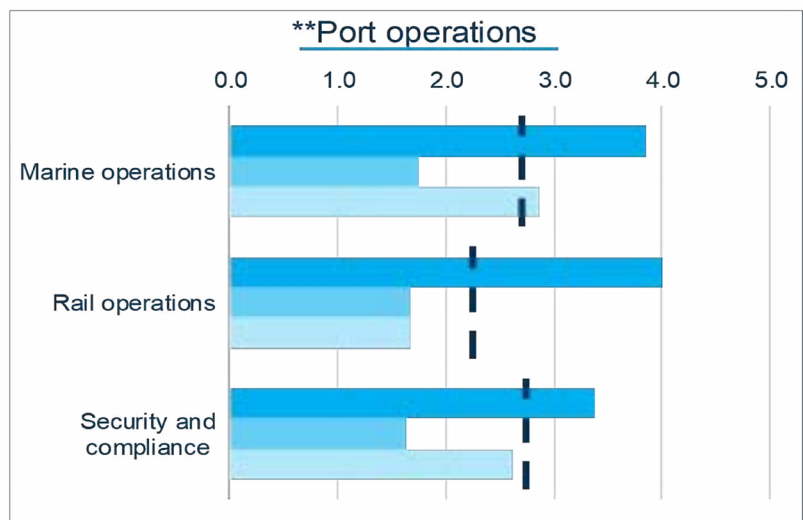
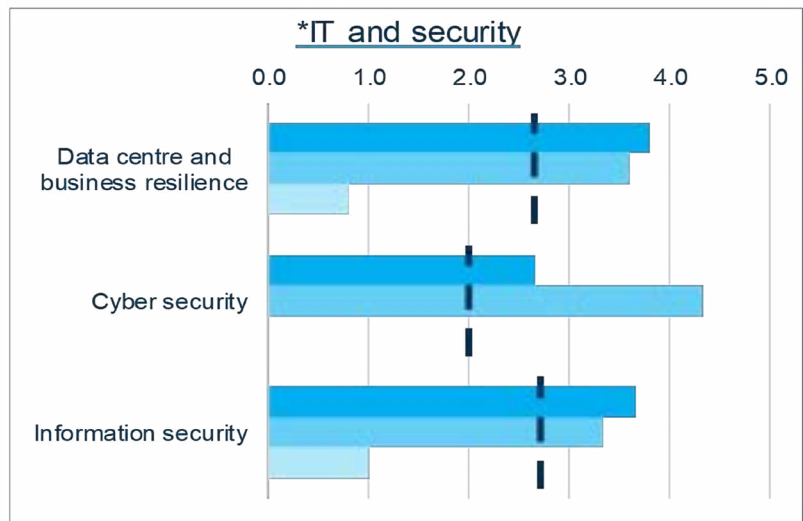
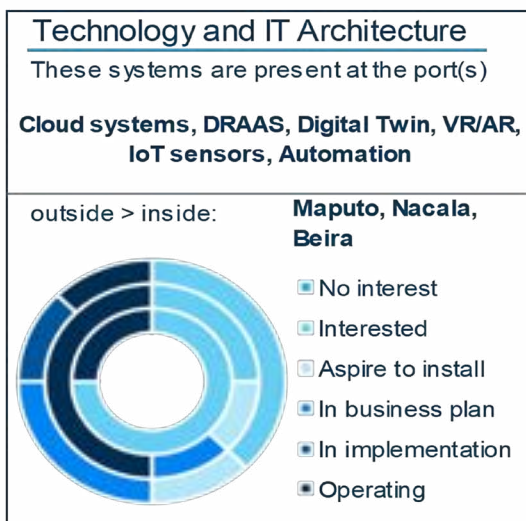
 ICT Authority - Title: - Institute: -	 Data Protection Law No. 10/2017 Title: Cybersecurity Law Institute: National Cybersecurity Centre	 Cybercrimes Law No. 10/2017 Title: Cybersecurity Law Institute: National Cybersecurity Centre	 Single Window Decree No. 53/2012 Title: National Single Window for Foreign Trade (JUFX) Institute: Ministry of Industry and Commerce	 Other Law No. 3/2010 Title: The Electronic Communications Law Institute: the National Communications Institute of Mozambique

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Namibia

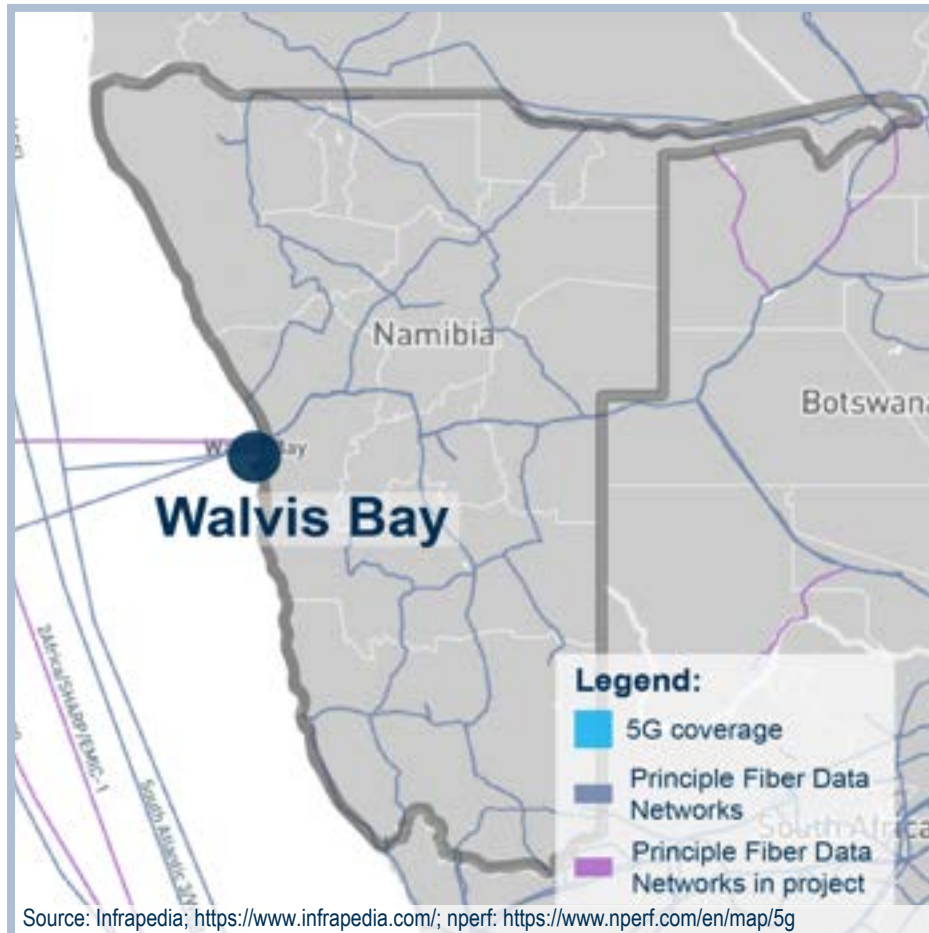
Country statistics

Population (millions):	2.5	International trade: 82% of GDP	Global Competitiveness Index: 54.5 WEF, 2019
GDP (2021):	US\$ 12.4 bn	Export: US\$ 7.1 billion Where 29.0% goes to African Nations	
GDP per capita (2021):	US\$ 4,919.2	Import: US\$ 9.7 billion Where 64.8% is from African Nations	
Human Capital Index (2020):	0.4		

Port statistics

Walvis Bay			Port authorities:	
Port model:	Tool Port		Walvis Bay	Namport
Trade volumes:	5,500K	Tonnes		
	200K	TEU		
Vessels handled:	2,000	per annum	Maritime authority: the Directorate of Maritime Affairs	

National ICT infrastructure



Network Readiness Index	33.5
Global Cybersecurity Index	11.5 2020
AIDI: ICT (2018)	22.1 African Infrastructure Development Index for ICT
Internet penetration	41.0% WB, 2020 % of population using the internet
	3.7% ↗ Avg annual growth WB, 2010-2020
Data centers	0 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

Internet censorship effort

1.4

USAID, 0 = worldwide average

Country policy and institutional assessment (CPIA)

3.1

2021, Region avg.

OECD: Trade Facilitation Indicator

Policies and digital Strategies

ICT Policy for Education in Namibia 2005 -

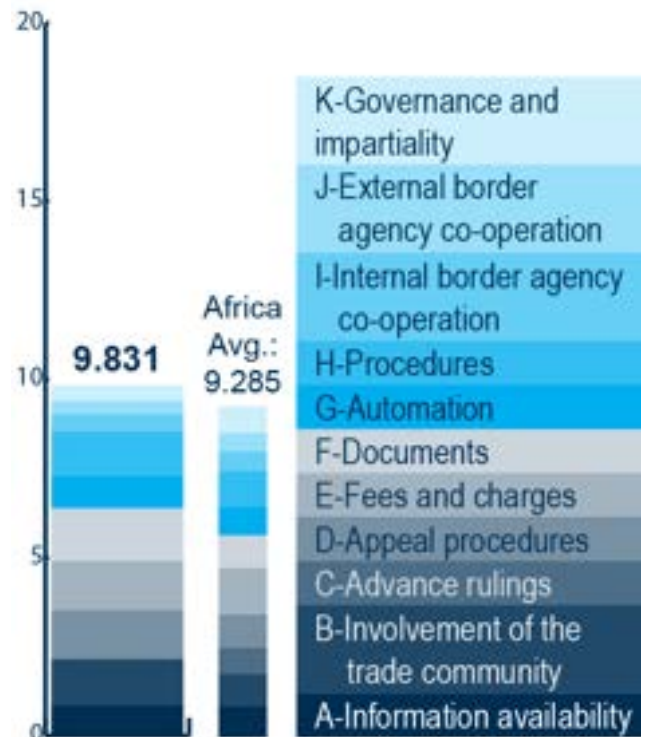
The goals include integrating ICT in education, improving ICT literacy, ensuring equitable access to resources, promoting research and development, utilizing open educational resources, and safeguarding personal data and privacy in ICT-enabled education.

Vision 2030 - 2030

Aims to increasing access to ICT infrastructure, developing a skilled workforce, promoting local content and services, enhancing government efficiency, improving sectoral productivity through ICT, and stimulating private sector investment in the ICT sector.

The Namibia Broadband Policy 2018 - 2022

The goals are to ensure universal broadband access, promote competition and local content, improve public services, encourage investment and partnerships, ensure efficient spectrum use, enhance digital literacy, and prioritize privacy and security in Namibia's broadband sector.



Digitalization legislation



ICT Authority

Act No. 9 of 2018

Title:
The Electronic Communications Act

Institute:
the Communications Regulatory Authority of Namibia



Data Protection

Act No. 2 of 2021

Title:
Data Protection Act

Institute:
Namibia Information Commission



Cybercrimes

Act No. 2 of 2018

Title:
Cybercrime and Cybersecurity Act

Institute:
Ministry of Information and Communication Technology



Single Window

-

Title:
-

Institute:
-



Other

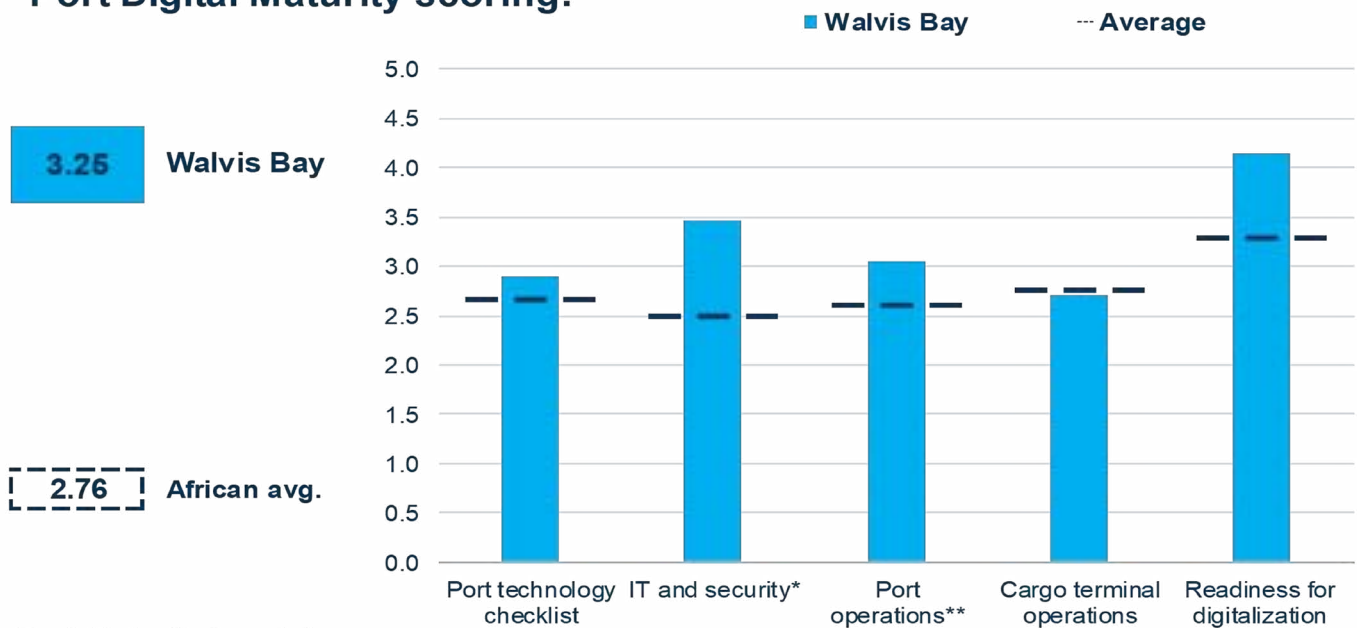
Act No. 10 of 2010

Title:
The Namibia Information and Communication Technology Act

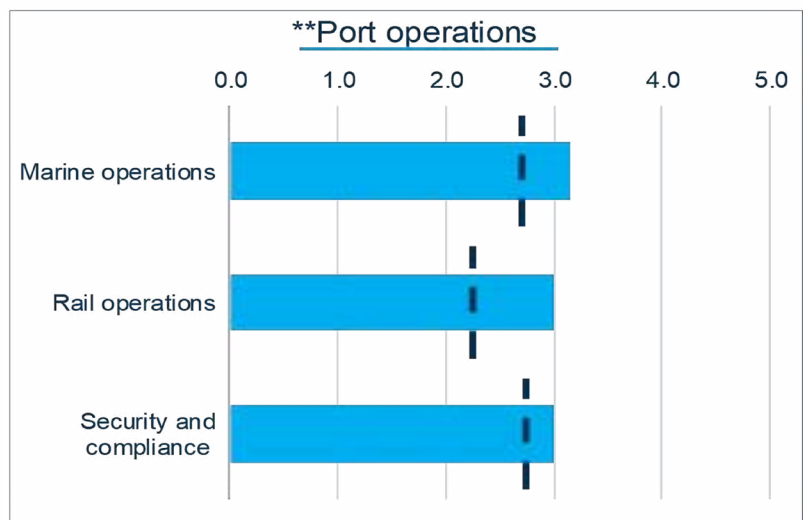
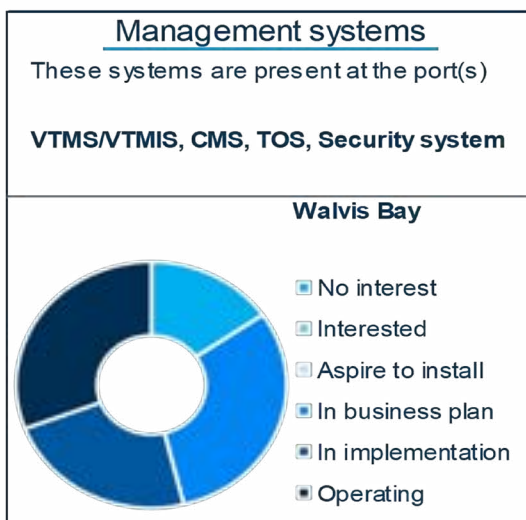
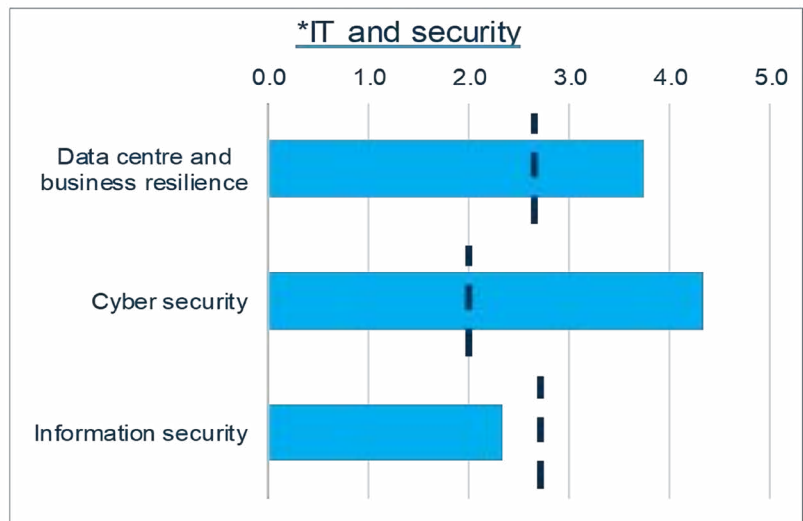
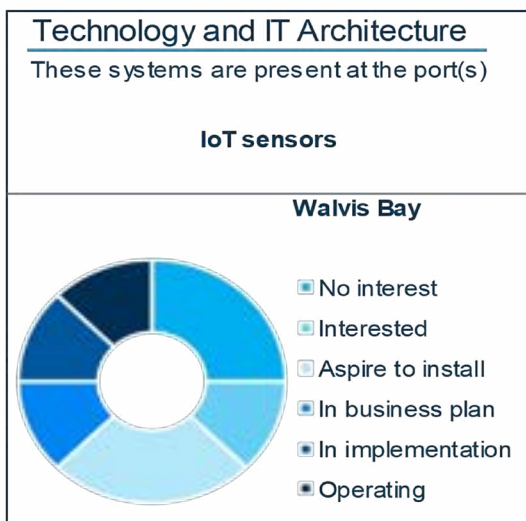
Institute:
the Ministry of Information and Communication Technology

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Nigeria

Country statistics

Population (millions):	213.4
GDP (2021):	US\$ 440.8 bn
GDP per capita (2021):	US\$ 2,065.7
Human Capital Index (2020):	0.4

International trade: **23% of GDP**

Export: **US\$ 51.0 billion**
Where 9.0% goes to African Nations

Import: **US\$ 67.1 billion**
Where 3.8% is from African Nations

Global Competitiveness Index:

48.3

WEF, 2019

Port statistics

Apapa		
Port model:	Tool/Landlord Port	
Trade volumes:	20,000K	Tonnes
	360K	TEU
Vessels handled:	1,100	per annum

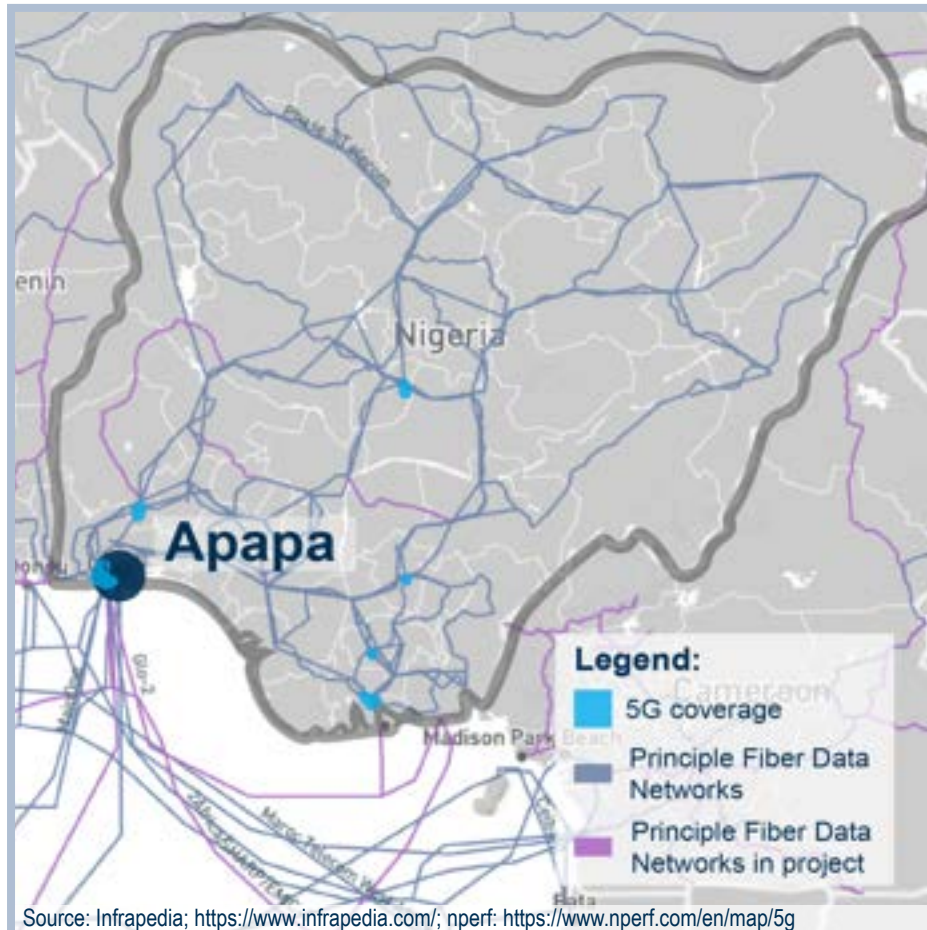
Port authorities:

Apapa Nigeria Ports Company (NPA)

Maritime authority:

Nigerian Maritime Administration and Safety Agency (NIMASA)

National ICT infrastructure



Network Readiness Index

36.7

Global Cybersecurity Index

84.8 2020

AIDI: ICT (2018)

25.5 African Infrastructure Development Index for ICT

Internet penetration

35.5% WB, 2020
% of population using the internet

2.4%
Avg annual growth WB, 2010-2020

Data centers

20 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

Internet censorship effort

0.1

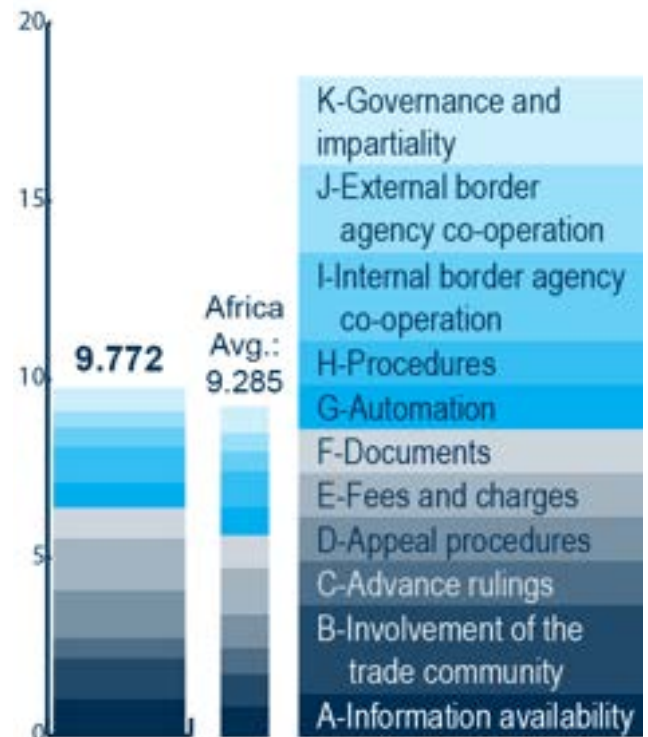
USAID, 0 = worldwide average

Country policy and institutional assessment (CPIA)

3.2

2021

OECD: Trade Facilitation Indicator



Policies and digital Strategies

National Digital Economy Policy and Strategy 2020 - 2030

The goal is to foster a thriving digital economy in Nigeria through eight pillars, including regulation, skills development, infrastructure, service promotion, digital services, soft infrastructure, emerging technologies, and indigenous content.

A Strategic Roadmap for Developing Digital Identification in Nigeria 2017 -

To create a national identity management system that is secure, reliable, and accessible to all Nigerians. The plan includes the introduction of a National Identification Number (NIN) that will serve as a unique identifier for every Nigerian.

Nigeria e-Government Master Plan 2017 -

The goal is to enhance government service delivery through ICTs, fostering efficiency and transparency in governance, with initiatives like a national data center, e-payment systems, and e-government applications.

Digitalization legislation



ICT Authority

Act No. 24 of 2007

Title:
National Information Technology Development Agency Act

Institute:
National Information Technology Development Agency (NITDA)



Data Protection

Act No. 24 of 2007

Title:
Nigeria Data Protection Regulation (NDPR) 2019

Institute:
National Information Technology Development Agency (NITDA)



Cybercrimes

Act No. 17 of 2015

Title:
Cybercrimes (prohibition, prevention, etc) act

Institute:
Federal Ministry of Communications and Digital Economy in Nigeria.



Single Window

CAP N126, LFN 2004

Title:
The Nigerian Ports and Harbours Authority Act, Cap N126

Institute:
Federal Ministry of Transportation



Other

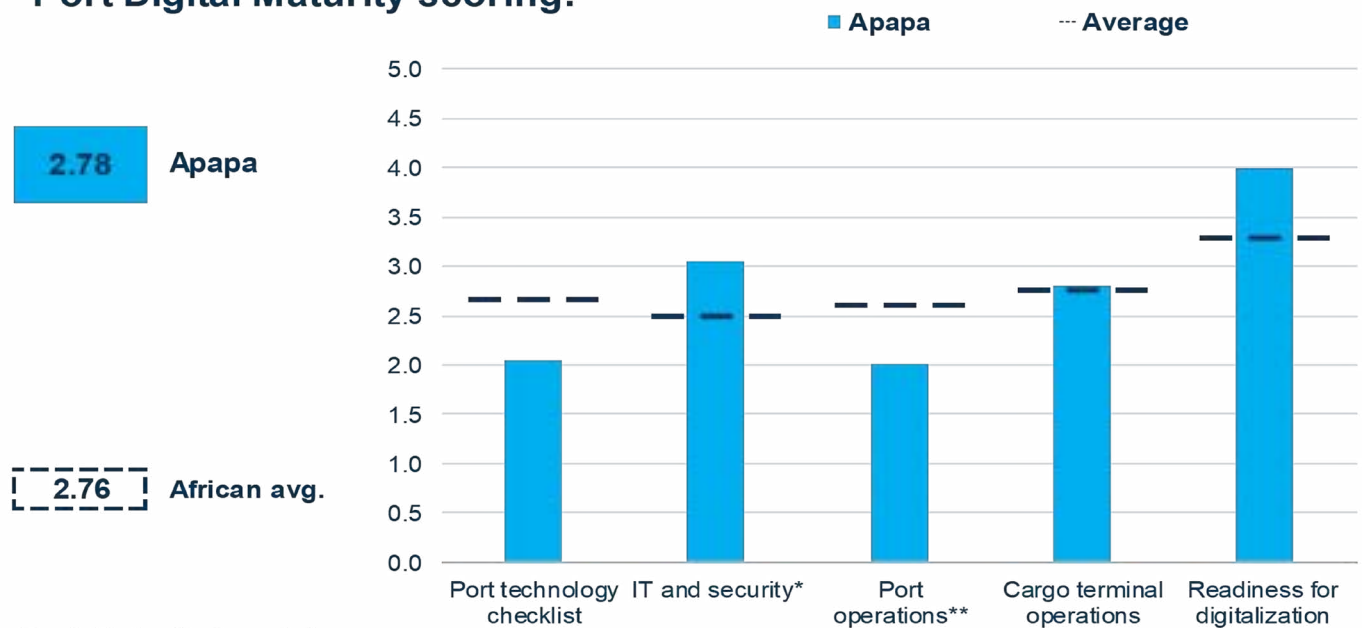
Act No. 19 of 2003

Title:
Nigerian Communications Act

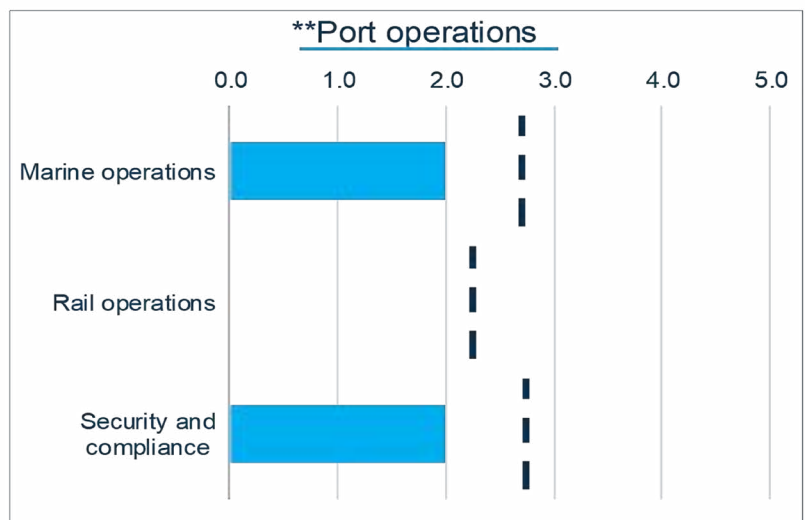
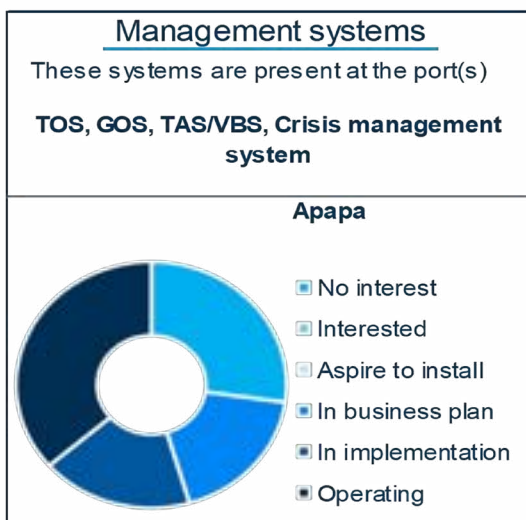
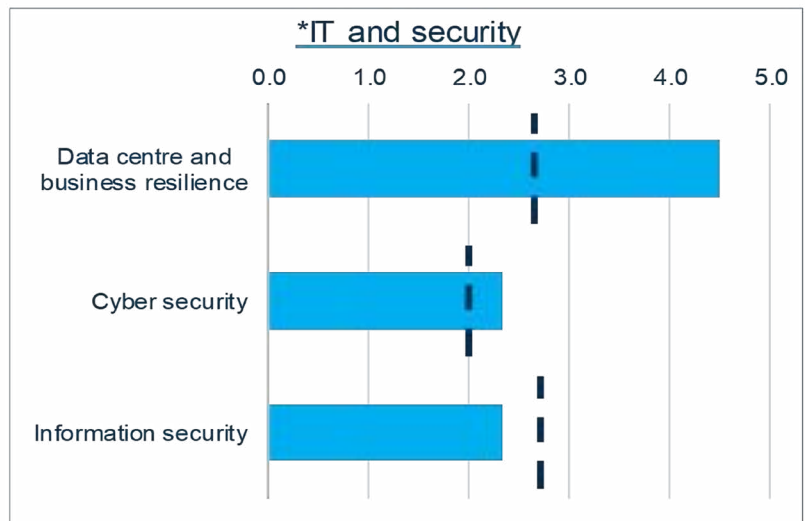
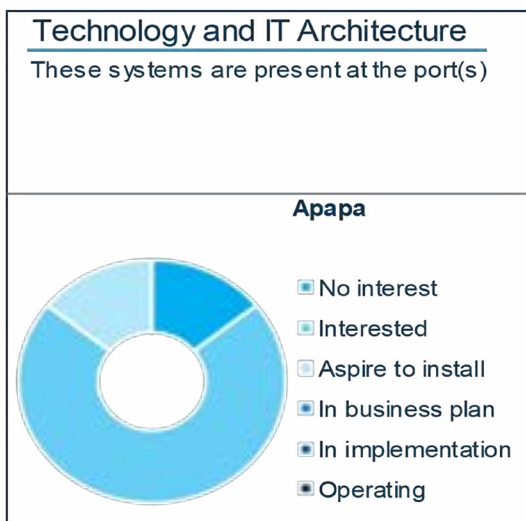
Institute:
Nigerian Communications Commission (NCC)

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Sao Tome et Principe

Country statistics

Population (millions):	0.2
GDP (2021):	US\$ 0.5 bn
GDP per capita (2021):	US\$ 2,360.5
Human Capital Index (2020):	

International trade: - of GDP
Export: US\$ 0.1 billion Where 0.0% goes to African Nations
Import: US\$ 0.2 billion Where 0.2% is from African Nations

Global Competitiveness Index:
47.3
Region avg., 2019

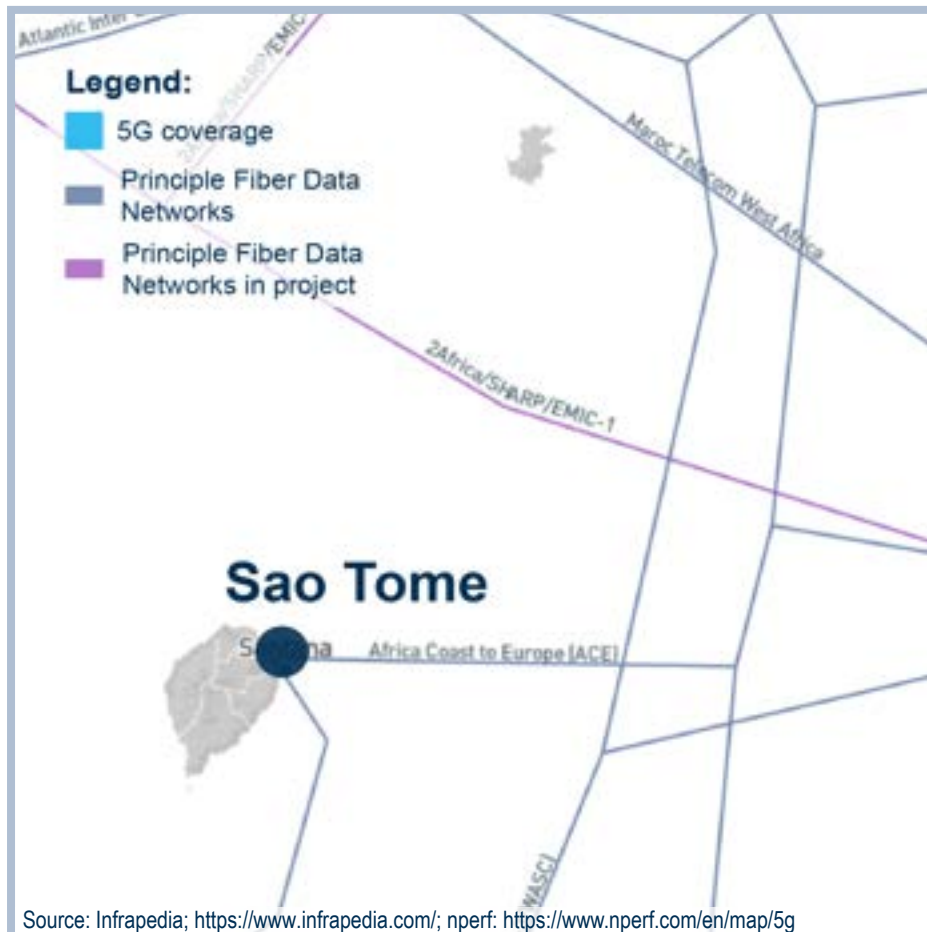
Port statistics

Sao Tome		
Port model:	Public Service Port	
Trade volumes:	900	Tonnes
	300	TEU
Vessels handled:	45	per annum

Port authorities:	
Sao Tome	ENAPORT

Maritime authority:
Institute of Maritime and Ports Administration

National ICT infrastructure



Network Readiness Index	35.2	Region avg.
Global Cybersecurity Index	15.6	2020
AIDI: ICT (2018)	18.9	African Infrastructure Development Index for ICT
Internet penetration	33.0%	WB, 2020 % of population using the internet
	1.4%	Avg annual growth WB, 2010-2020
Data centers	0	Colocation data centres in the country
Cloud hosting centers	0	Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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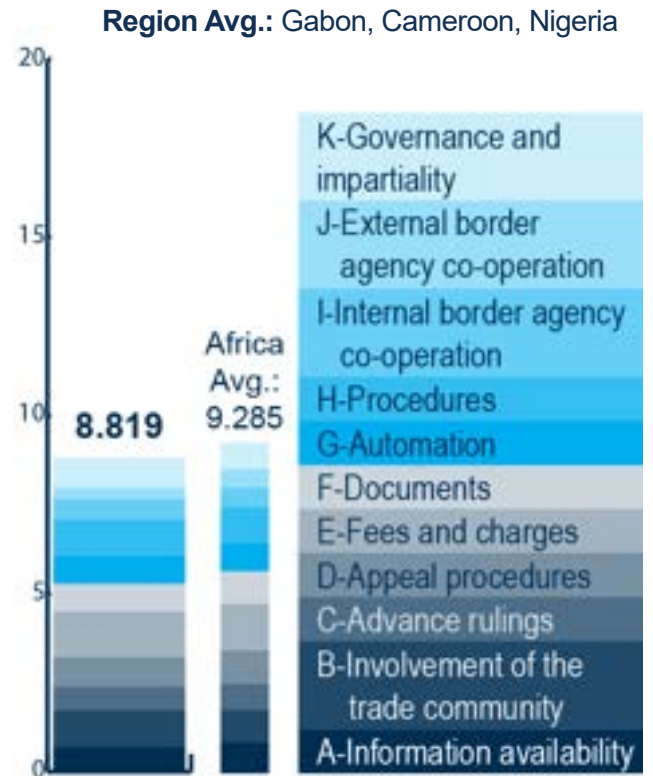
1.1
USAID, 0 = worldwide average

3.0
2021






Policies and digital Strategies

Contribution to a national strategy for digital governance 2020 -

To develop a national strategy for digital governance, improve digital public services, establish necessary technological pillars, simplify administrative procedures, and ensure institutional commitment and international partnerships in São Tomé and Príncipe.

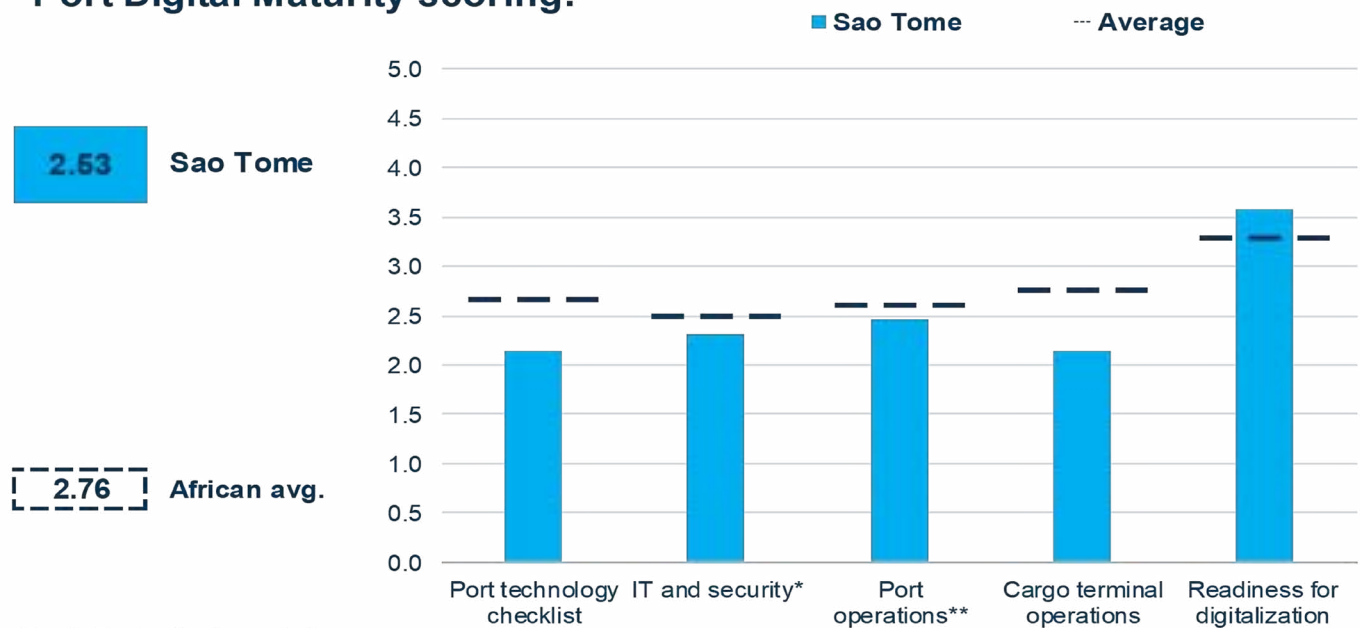


Digitalization legislation

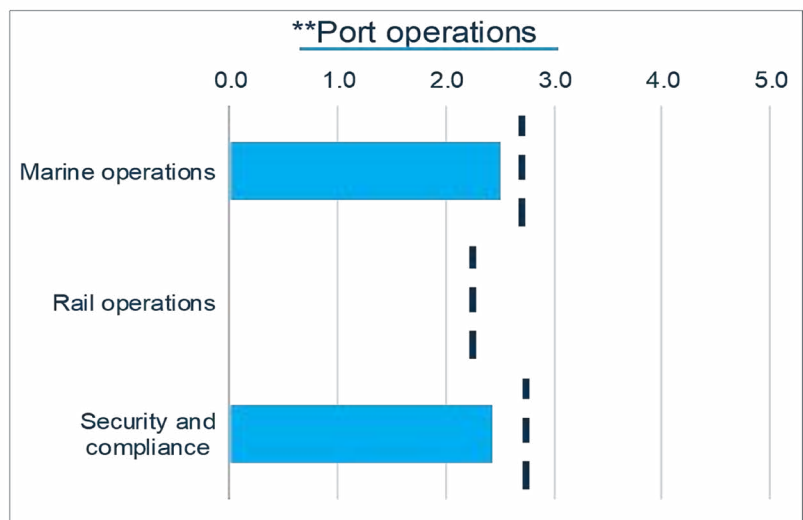
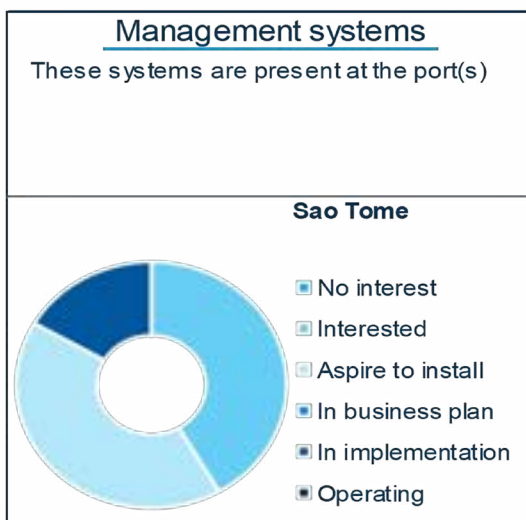
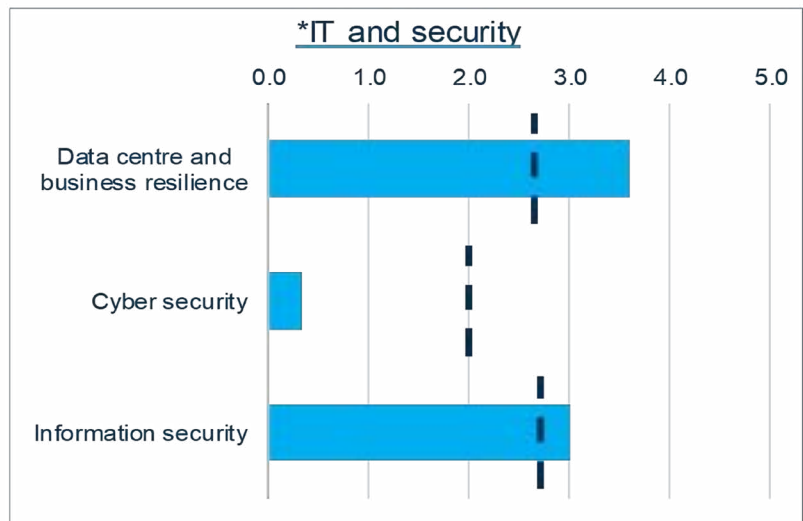
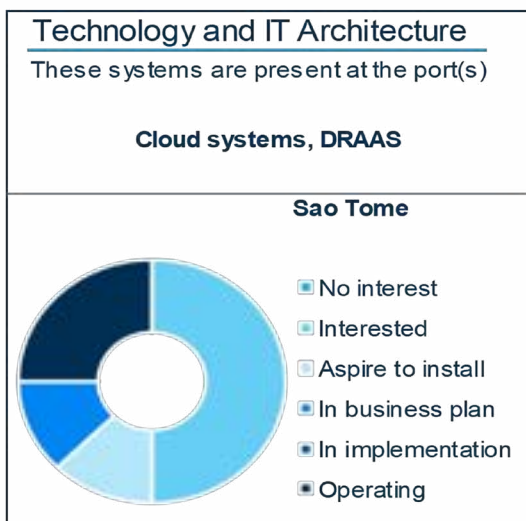
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Law No. 3/2004 Title: Law that defines the rules applicable to the establishment, management and operation of networks of national telecommunications and the provision of telecommunication services Institute: Telecommunications regulatory Authority	 Law No. 03/2016 Title: Personal Data Protection Institute: Data Protection Agency	 Law No. 15/2017 Title: Law on Cybercrime Institute: Public Ministry of Justice	 - Title: - Institute: -	 - Title: - Institute: -

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Senegal

Country statistics

Population (millions):	16.9
GDP (2021):	US\$ 27.6 bn
GDP per capita (2021):	US\$ 1,636.6
Human Capital Index (2020):	0.4

International trade: **69% of GDP**

Export: **US\$ 6.3 billion**
Where 30.0% goes to African Nations

Import: **US\$ 12.0 billion**
Where 18.7% is from African Nations

Global Competitiveness Index:

49.7

WEF, 2019

Port statistics

Dakar		
Port model:	Landlord Port	
Trade volumes:	15,000K	Tonnes
	450K	TEU
Vessels handled:	2,700	per annum

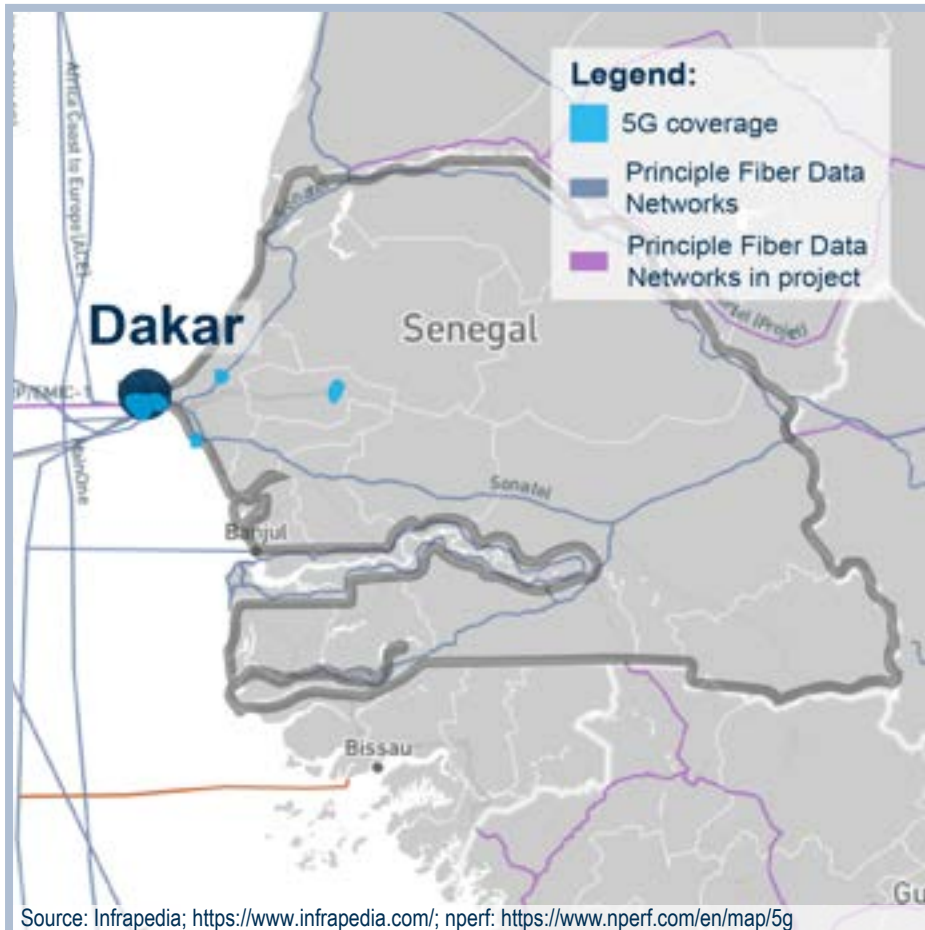
Port authorities:

Dakar Port Autonome de Dakar

Maritime authority:

National Agency of Maritime Affairs (ANAM)

National ICT infrastructure



Network Readiness Index

39.6

Global Cybersecurity Index

35.9 2020

AIDI: ICT (2018)

19.0 African Infrastructure Development Index for ICT

Internet penetration

42.6% WB, 2020
% of population using the internet

3.5%
Avg annual growth WB, 2010-2020

Data centers

2 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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1.5
USAID, 0 = worldwide average

3.7
2021

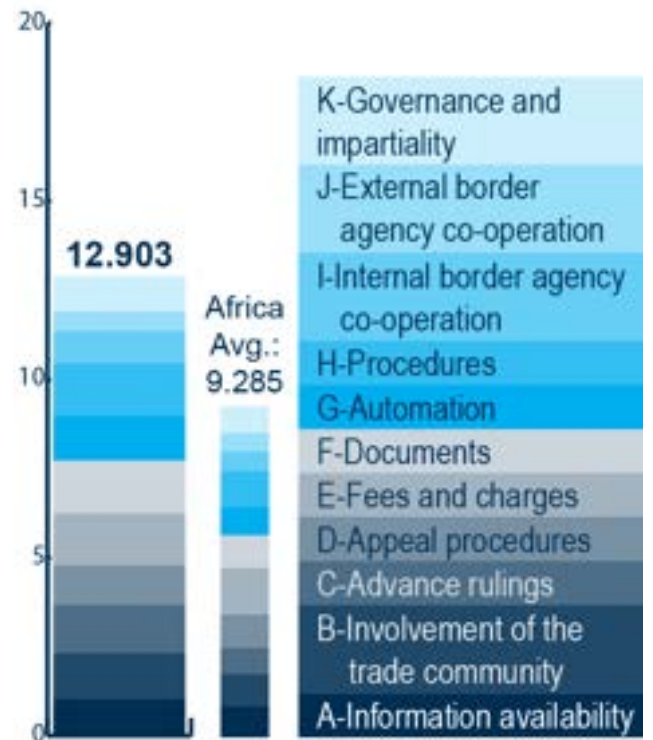
Policies and digital Strategies

The Senegal Digital Strategy 2025 (SN2025) 2016 - 2025

Drive economic transformation, societal changes, innovation, and digitalization across sectors, enhancing human capital, strengthening cybersecurity, improving access to digital networks, streamlining public services, and fostering an innovative digital industry.

Emerging Senegal Plan 2014 - 2035

Achieve structural transformation, human capital development, effective governance, and sustainable development while addressing energy issues, enhancing logistics and ICT capabilities, improving the business environment, and promoting international cooperation.



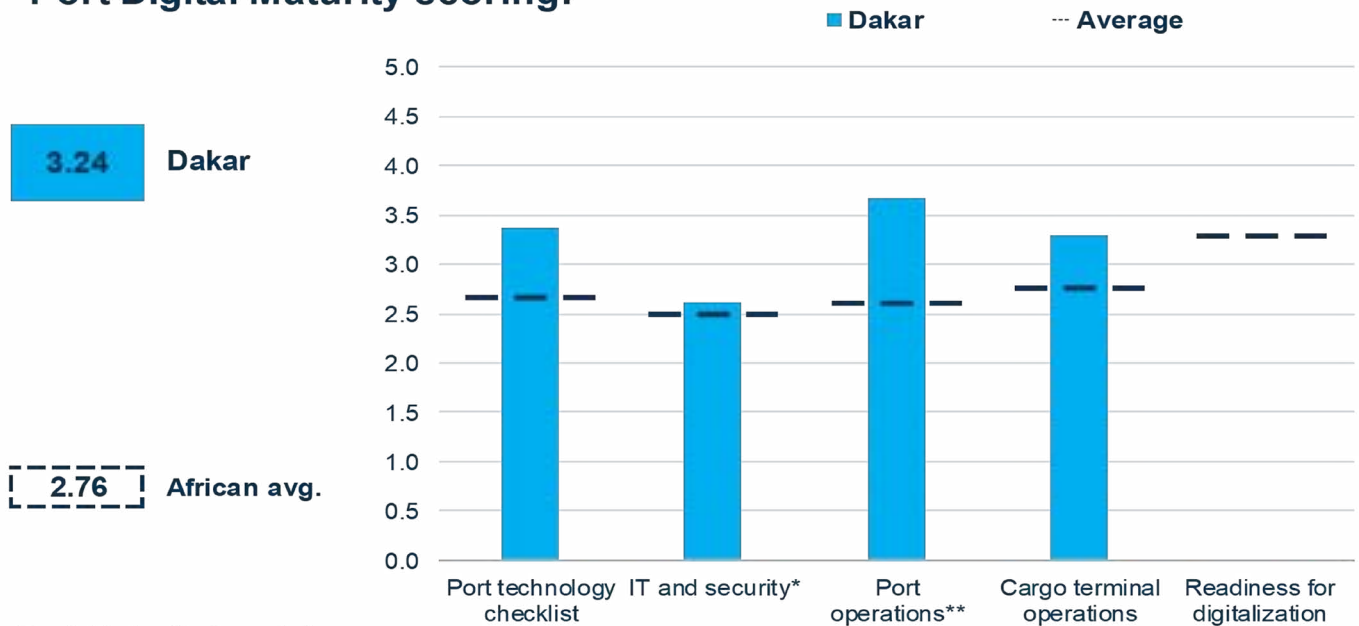
Digitalization legislation

ICT Authority	Data Protection	Cybercrimes	Single Window	Other
Law No. 2018-28	Law No. 2008-12	Law No. 2008-11	-	Law No. 2008-08
Title: On the Telecommunications code	Title: Concerning personal data protection	Title: The law on Cybercrime	Title: -	Title: On electronic transactions
Institute: The governmental authority	Institute: Data protection authority (CDP)	Institute: Data protection authority (CDP)	Institute: -	Institute: Data protection authority (CDP)

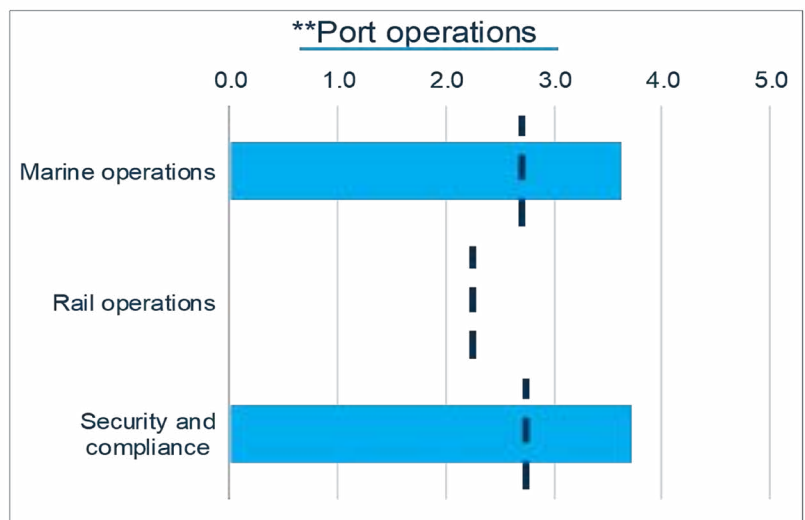
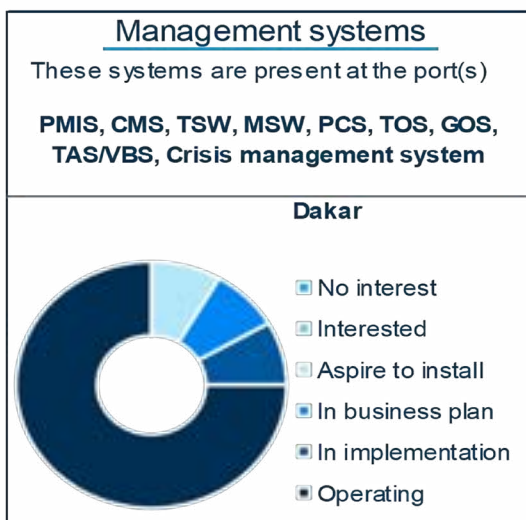
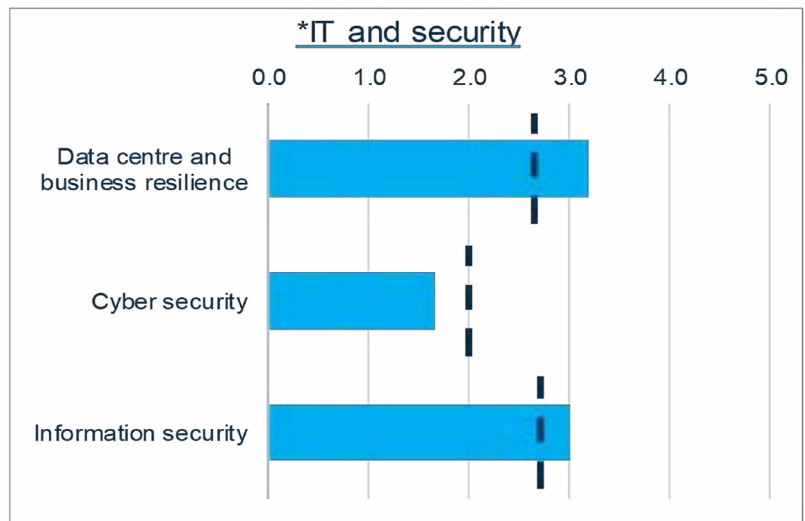
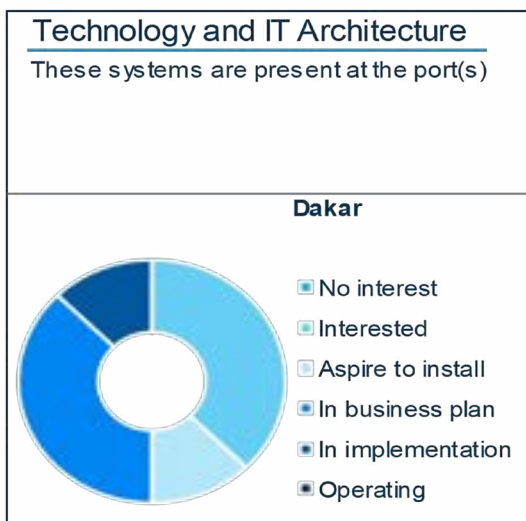
Port IT systems and services

Note: Data is not obtained from an interview but from desktop research and expert judgement

Port Digital Maturity scoring:



Port Maturity breakdown:



Sierra Leone

Country statistics

Population (millions):	8.4	International trade: 58% of GDP	Global Competitiveness Index: 38.8 WEF, 2018
GDP (2021):	US\$ 4.3 bn	Export: US\$ 0.7 billion Where 0.6% goes to African Nations	
GDP per capita (2021):	US\$ 504.6	Import: US\$ 2.0 billion Where 1.4% is from African Nations	
Human Capital Index (2020):	0.4		

Port statistics

Freetown		Port authorities:	
Port model:	Landlord Port	Freetown	Sierra Leone Ports Authority (SLPA)
Trade volumes:	9,000K Tonnes		
	100K TEU		
Vessels handled:	500 per annum	Maritime authority: Sierra Leone Maritime Administration (SLMARAD)	

National ICT infrastructure

Legend:

- 5G coverage
- Principle Fiber Data Networks
- Principle Fiber Data Networks in project

Source: Infrapedia; <https://www.infrapedia.com/>; nperf: <https://www.nperf.com/en/map/5g>

Network Readiness Index

34.2 Region avg.

Global Cybersecurity Index

25.3 2020

AIDI: ICT (2018)

10.7 African Infrastructure Development Index for ICT

Internet penetration

18.0% WB, 2020
% of population using the internet

1.7% Avg annual growth WB, 2010-2020

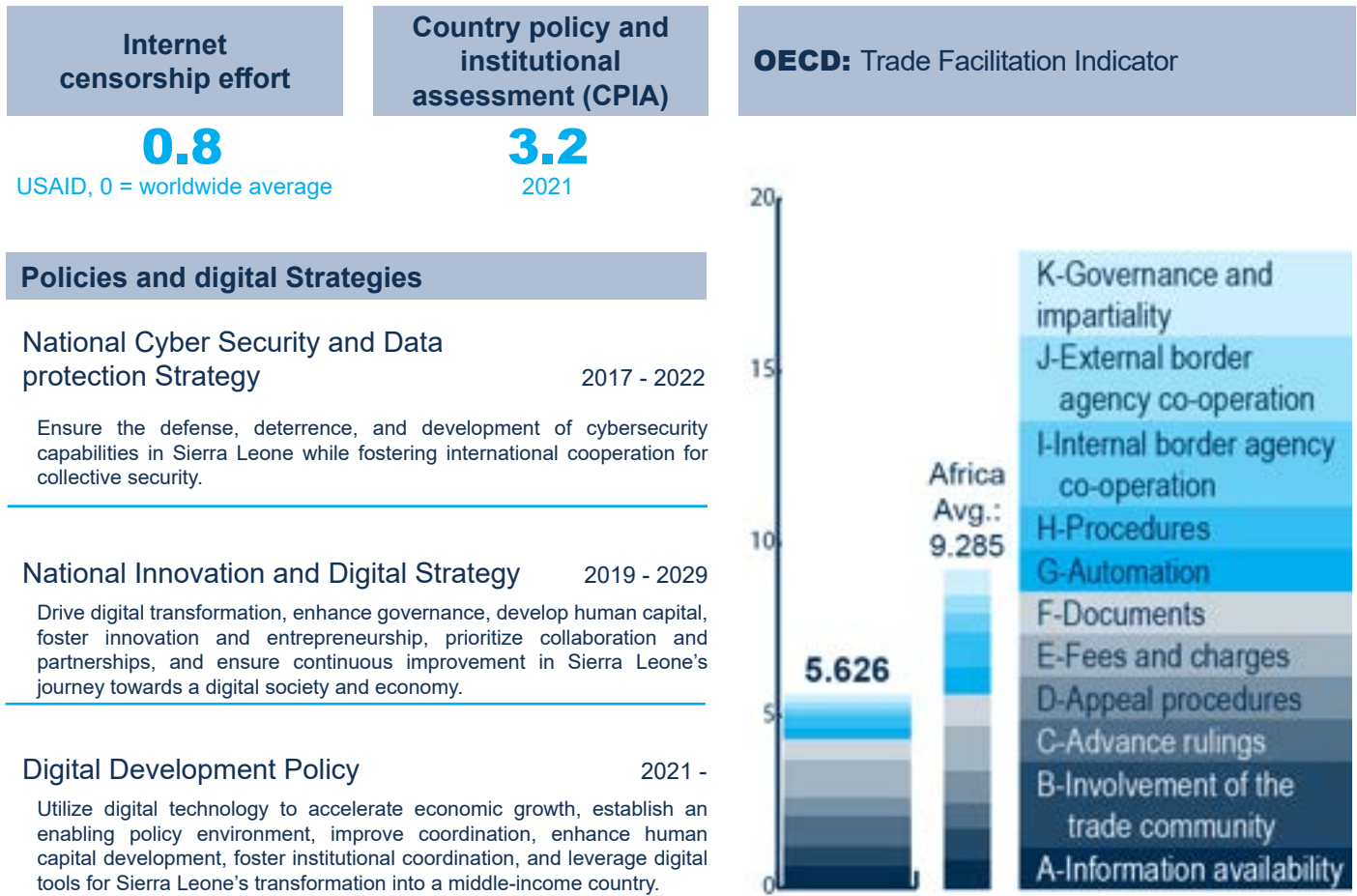
Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework



Policies and digital Strategies

National Cyber Security and Data protection Strategy 2017 - 2022

Ensure the defense, deterrence, and development of cybersecurity capabilities in Sierra Leone while fostering international cooperation for collective security.






National Innovation and Digital Strategy 2019 - 2029

Drive digital transformation, enhance governance, develop human capital, foster innovation and entrepreneurship, prioritize collaboration and partnerships, and ensure continuous improvement in Sierra Leone's journey towards a digital society and economy.

Digital Development Policy 2021 -

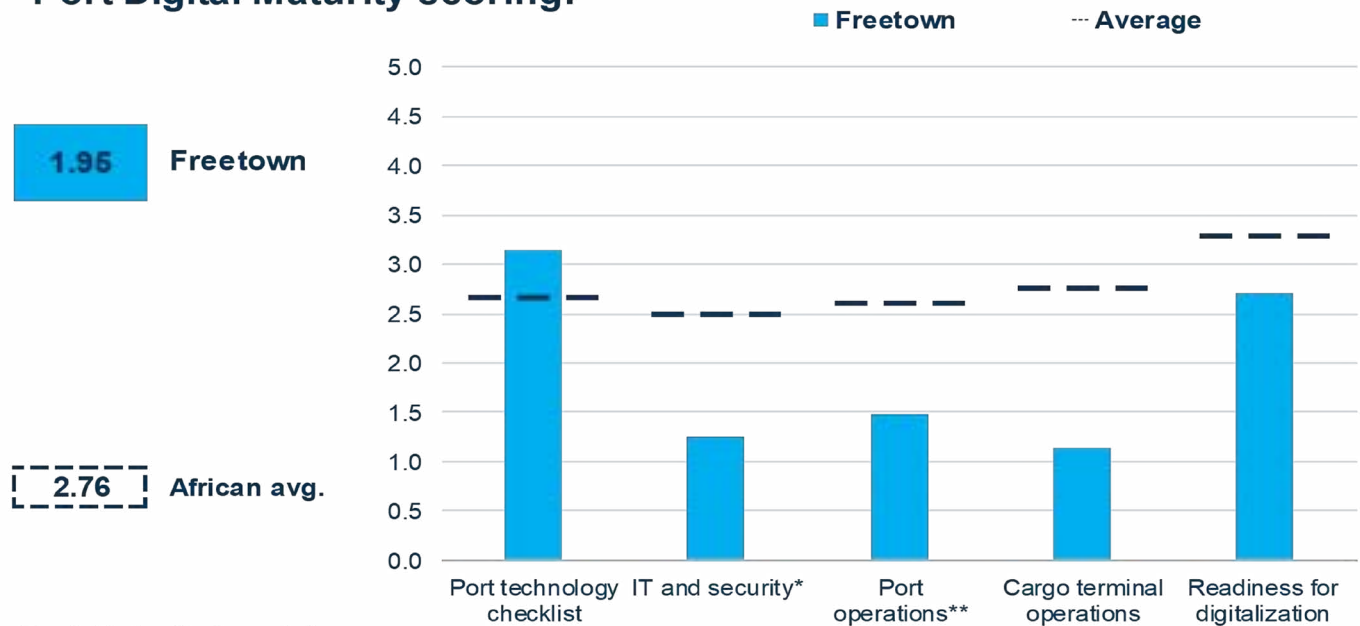
Utilize digital technology to accelerate economic growth, establish an enabling policy environment, improve coordination, enhance human capital development, foster institutional coordination, and leverage digital tools for Sierra Leone's transformation into a middle-income country.

Digitalization legislation

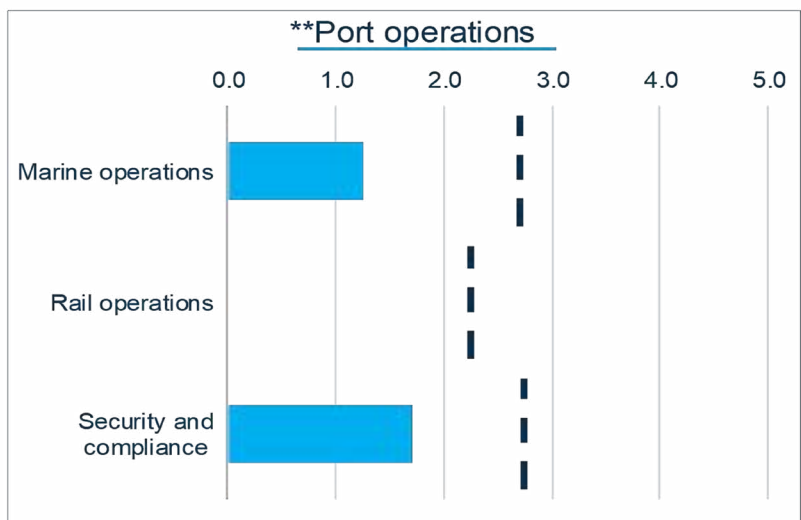
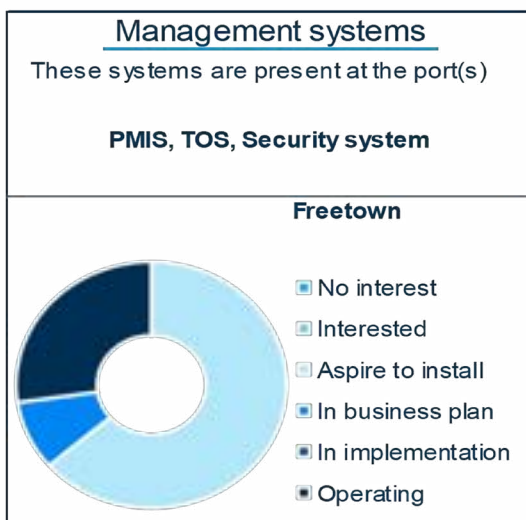
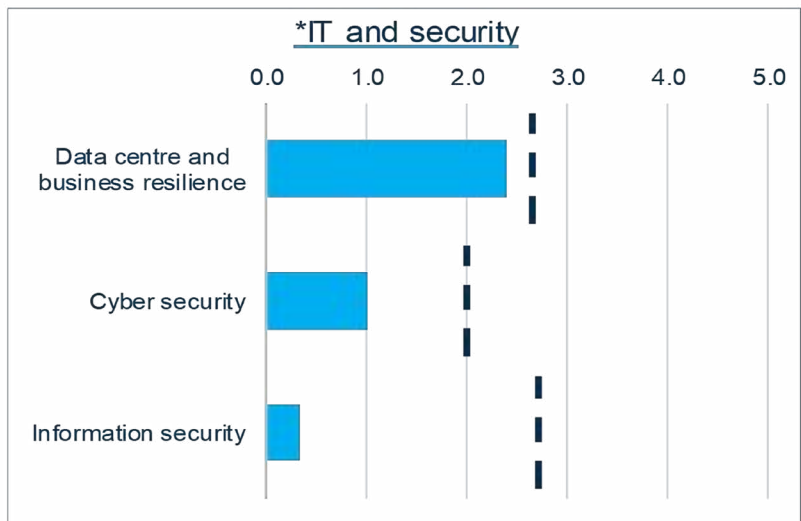
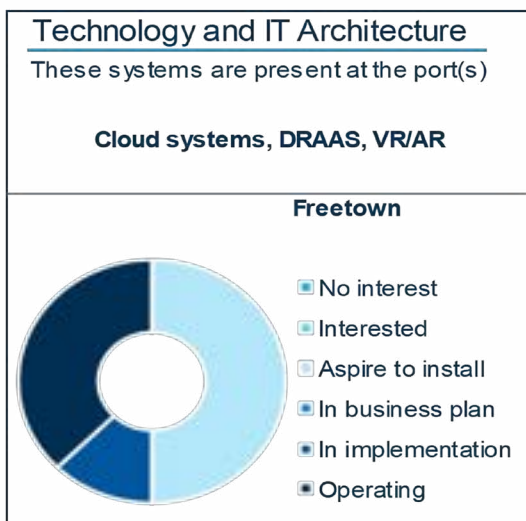
 ICT Authority Law No. 16/2022 Title: The National communications Authority Act Institute: National Communications Authority	 Data Protection - Title: - Institute: -	 Cybercrimes Law No. 27/2020 Title: The Cybercrime Act Institute: National Cyber Security Incident Response Coordination Center	 Single Window - Title: - Institute: -	 Other Law No 09/2006 Title: The Telecommunications act Institute: The National Telecommunications Commission

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Somalia

Country statistics

Population (millions):	17.1
GDP (2021):	US\$ 7.6 bn
GDP per capita (2021):	US\$ 447.0
Human Capital Index (2020):	

International trade: **106% of GDP**

Export: **US\$ 0.5 billion**
Where 1.5% goes to African Nations

Import: **US\$ 1.2 billion**
Where 23.5% is from African Nations

Global Competitiveness Index:

44.7

Region avg., 2019

Port statistics

Mogadishu		
Port model:	Landlord Port	
Trade volumes:	330K	Tonnes
	78K	TEU
Vessels handled:	230	per annum

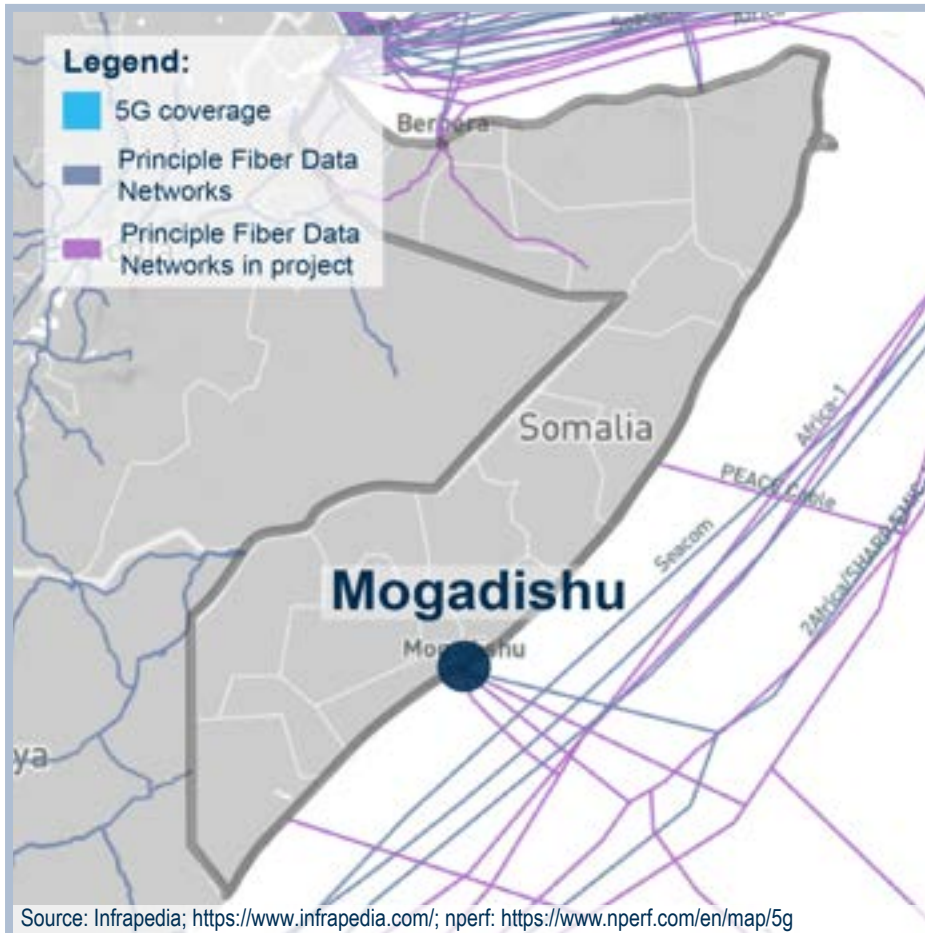
Port authorities:

Mogadishu Mogadishu Port Authority (MPA)

Maritime authority:

Maritime administration and communication department

National ICT infrastructure



Network Readiness Index

38.4 Region avg.

Global Cybersecurity Index

17.3 2020

AIDI: ICT (2018)

7.5 African Infrastructure Development Index for ICT

Internet penetration

2.0% WB, 2017
% of population using the internet

0.2%
Avg annual growth WB, 2010-2020

Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

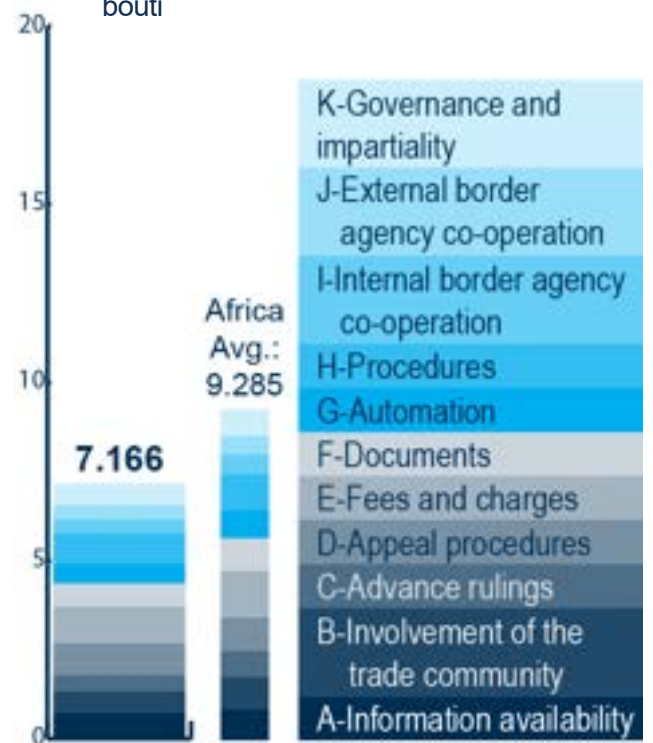
Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
<p>0.3 USAID, 0 = worldwide average</p>	<p>2.1 2021</p>	<p>Region Avg.: Kenya, Ethiopia, Yemen, Djibouti</p>

Policies and digital Strategies

National ICT policy & strategy 2019 - 2024

Promote Somalia's digital transformation, accelerate socio-economic development, empower citizens with ICTs, support key sectors, ensure widespread ICT access, establish a competitive regulatory environment, and address infrastructure gaps for inclusive growth.

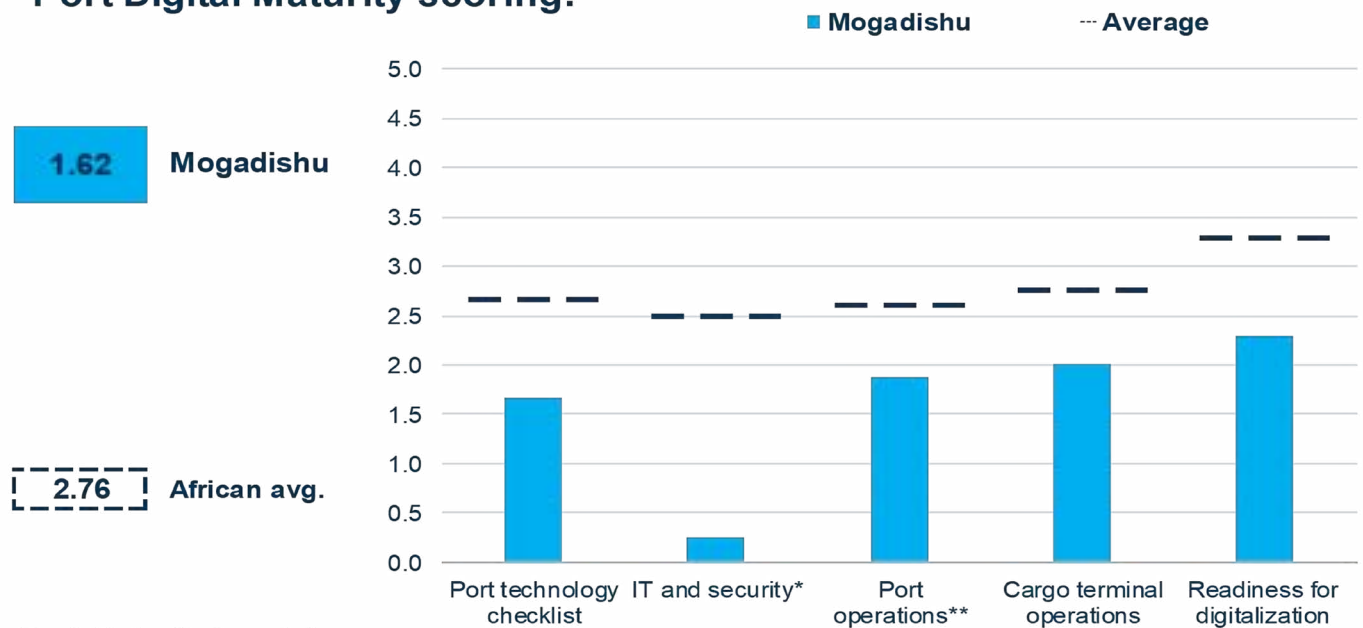


Digitalization legislation

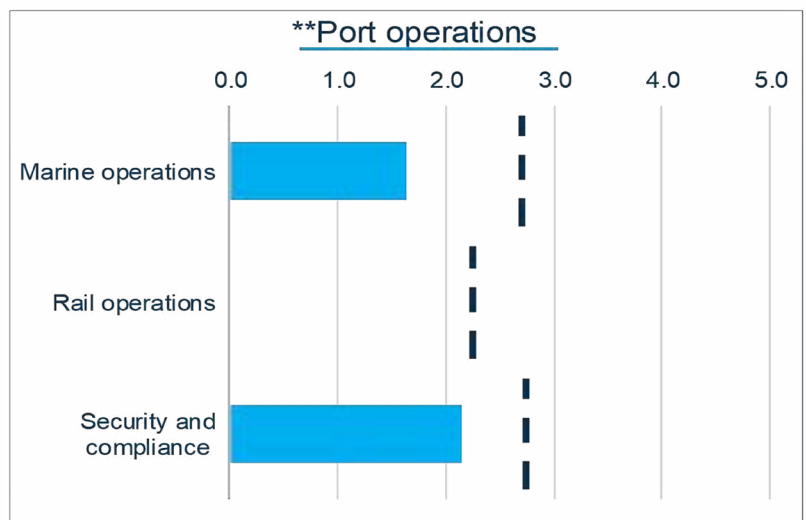
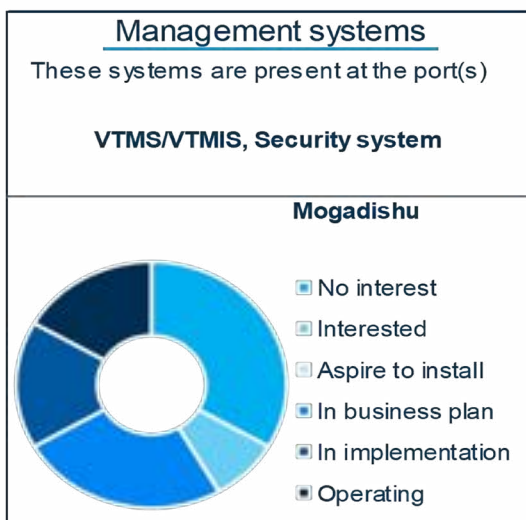
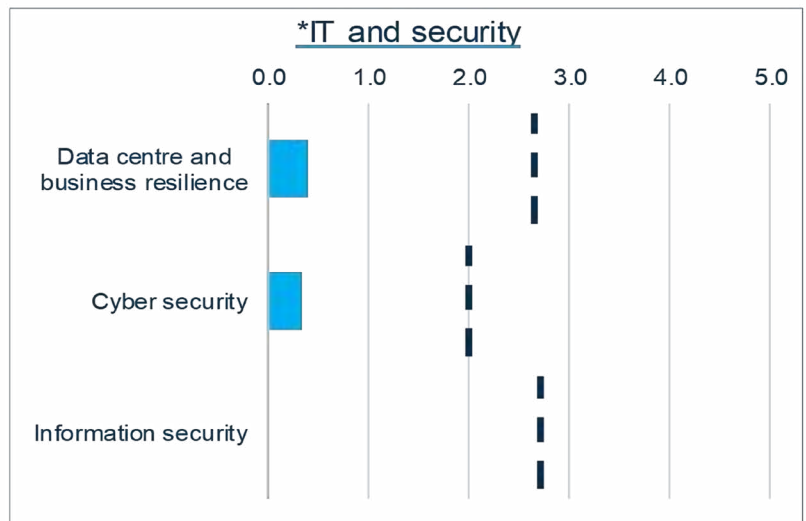
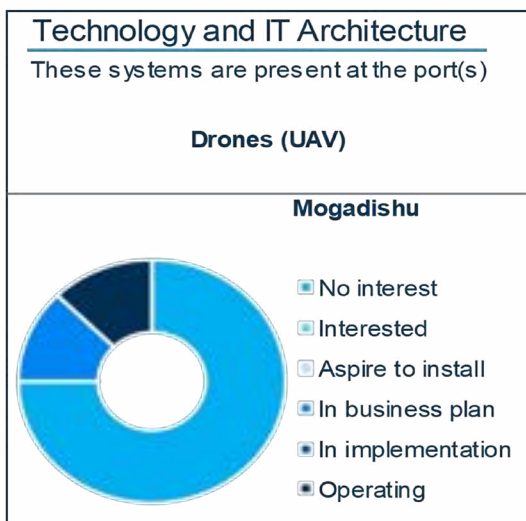
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
Act 252	-	-	-	-
Title: National Telecommunications Law	Title: -	Title: -	Title: -	Title: -
Institute: Ministry of Post, Telecommunication and Technology	Institute: -	Institute: -	Institute: -	Institute: -

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Somaliland

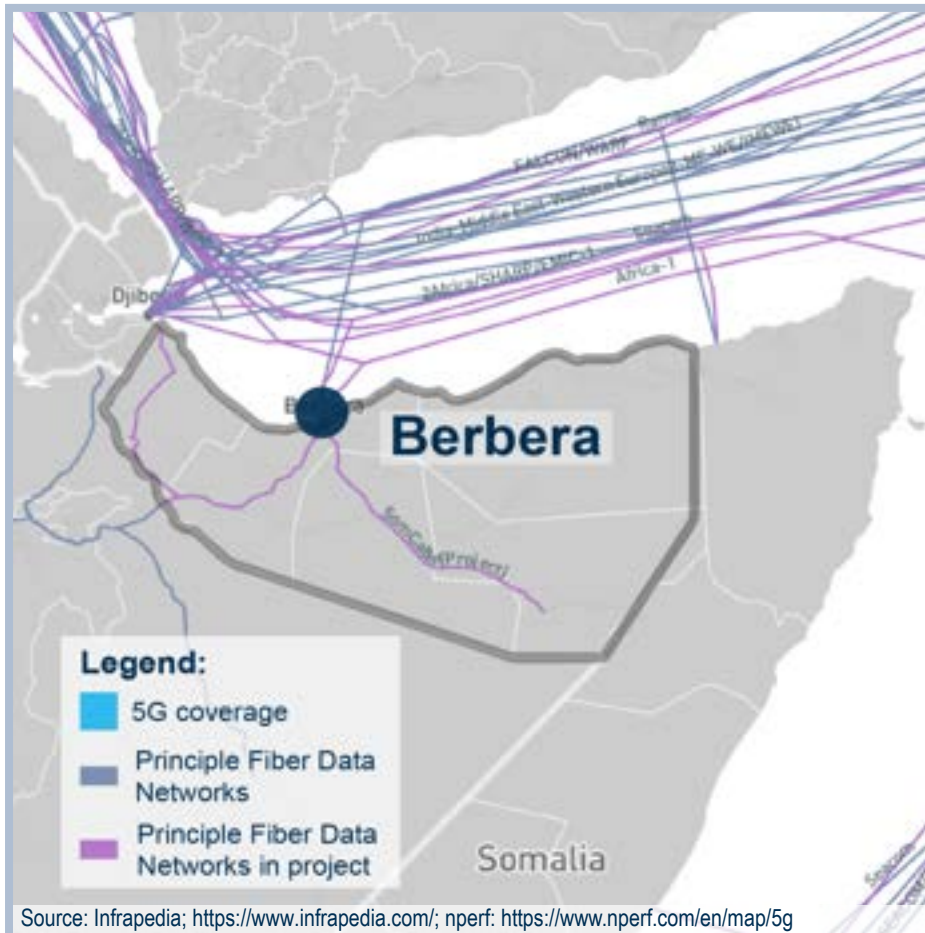
Country statistics

Population (millions):	5.7	International trade: 106% of GDP	Global Competitiveness Index: 44.7 Region avg., 2019
GDP (2021):	US\$ 3.3 bn	Export: US\$ 0.5 billion Where 1.5% goes to African Nations	
GDP per capita (2021):	US\$ 775.0	Import: US\$ 1.2 billion Where 23.5% is from African Nations	
Human Capital Index (2020):			

Port statistics

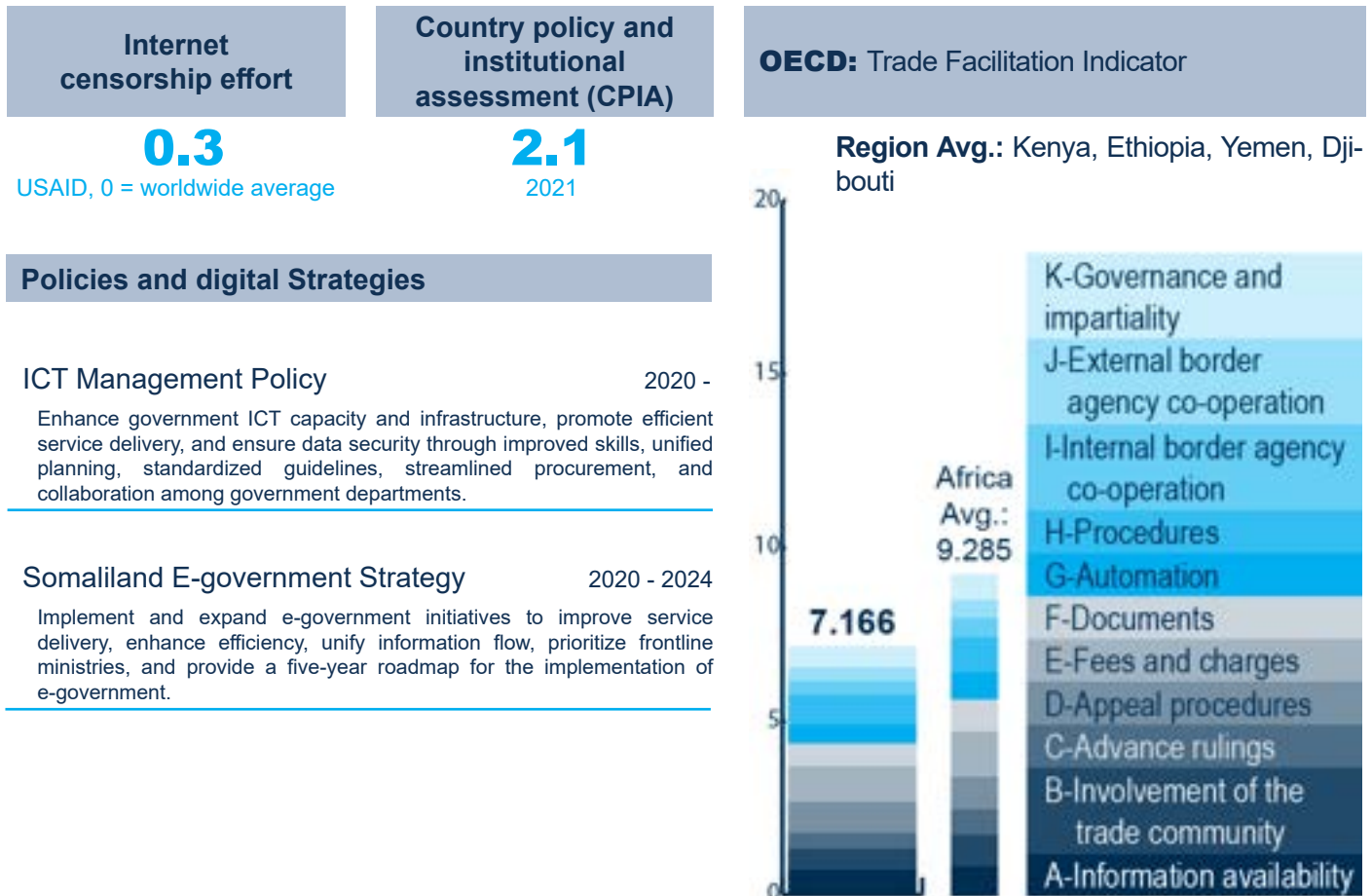
Berbera			Port authorities:
Port model:	Landlord Port		Berbera Somaliland Ports Authority (SPA)
Trade volumes:	240K	Tonnes	
	64K	TEU	
Vessels handled:	75	per annum	Maritime authority:

National ICT infrastructure








Network Readiness Index	38.4 Region avg.
Global Cybersecurity Index	17.3 2020
AIDI: ICT (2018)	7.5 African Infrastructure Development Index for ICT
Internet penetration	2.0% WB, 2017 % of population using the internet
	0.2% ↗ Avg annual growth WB, 2010-2020
Data centers	0 Colocation data centres in the country
Cloud hosting centers	0 Providers offering Infrastructure as a Service

Institutional Framework

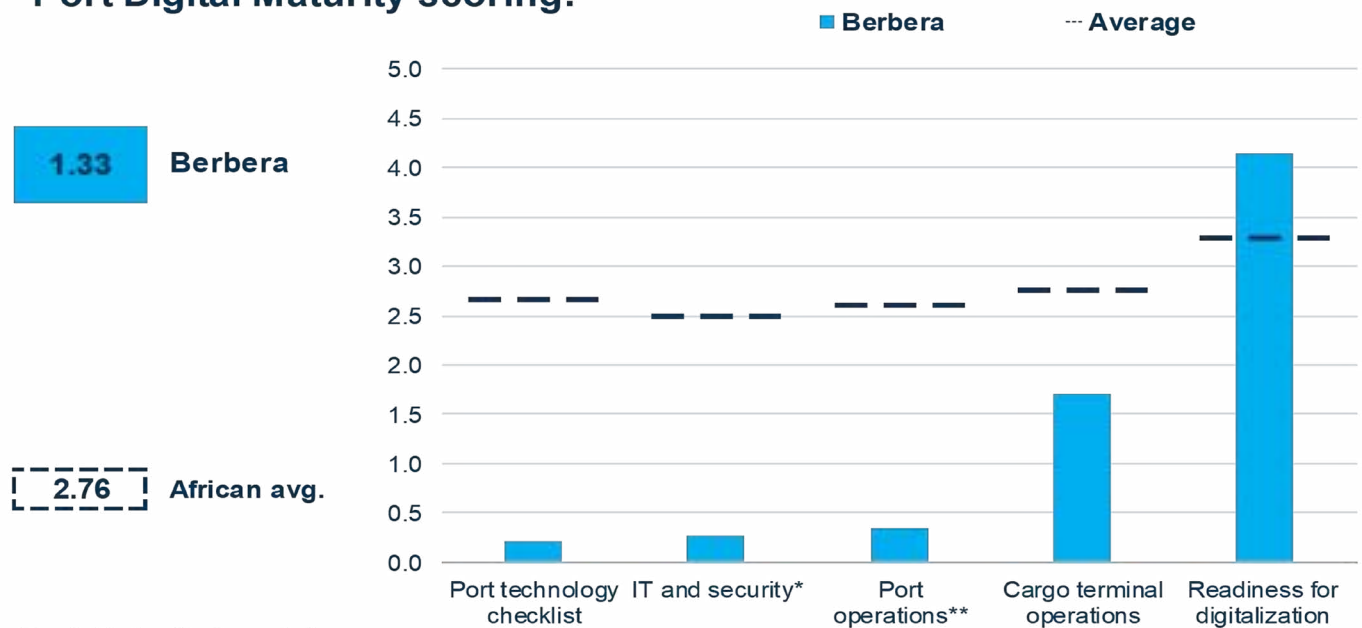


Digitalization legislation

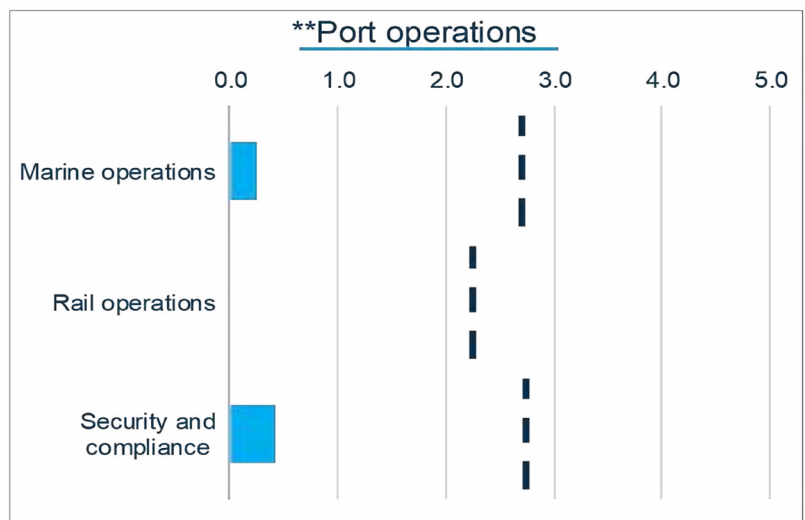
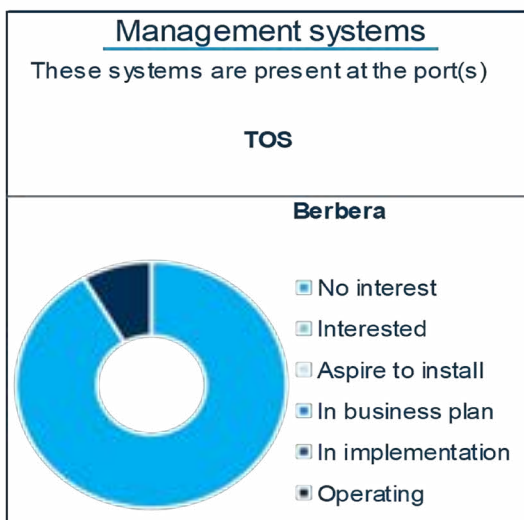
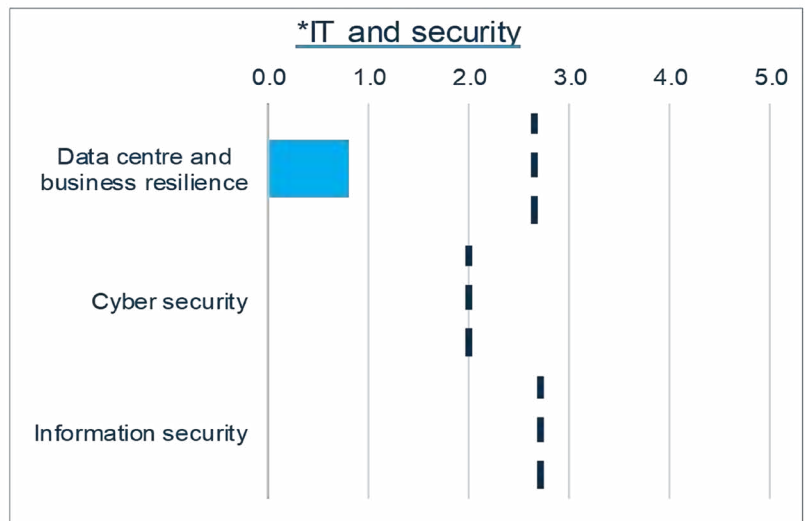
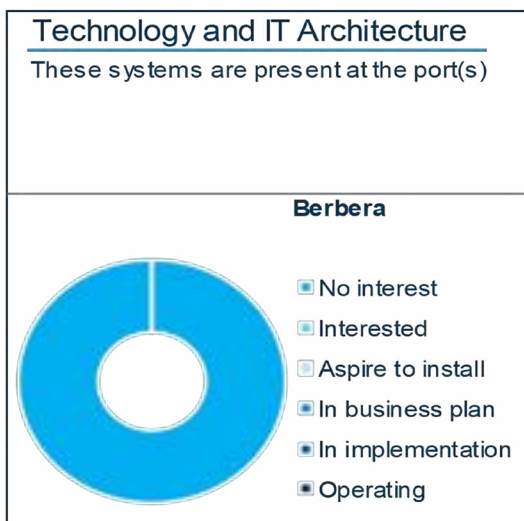
 ICT Authority Law No. 50/2020 Title: The Somaliland Communications Act Institute: The Ministry of Information and communication Technology	 Data Protection - Title: - Institute: -	 Cybercrimes - Title: - Institute: -	 Single Window - Title: - Institute: -	 Other - Title: - Institute: -

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



South Africa

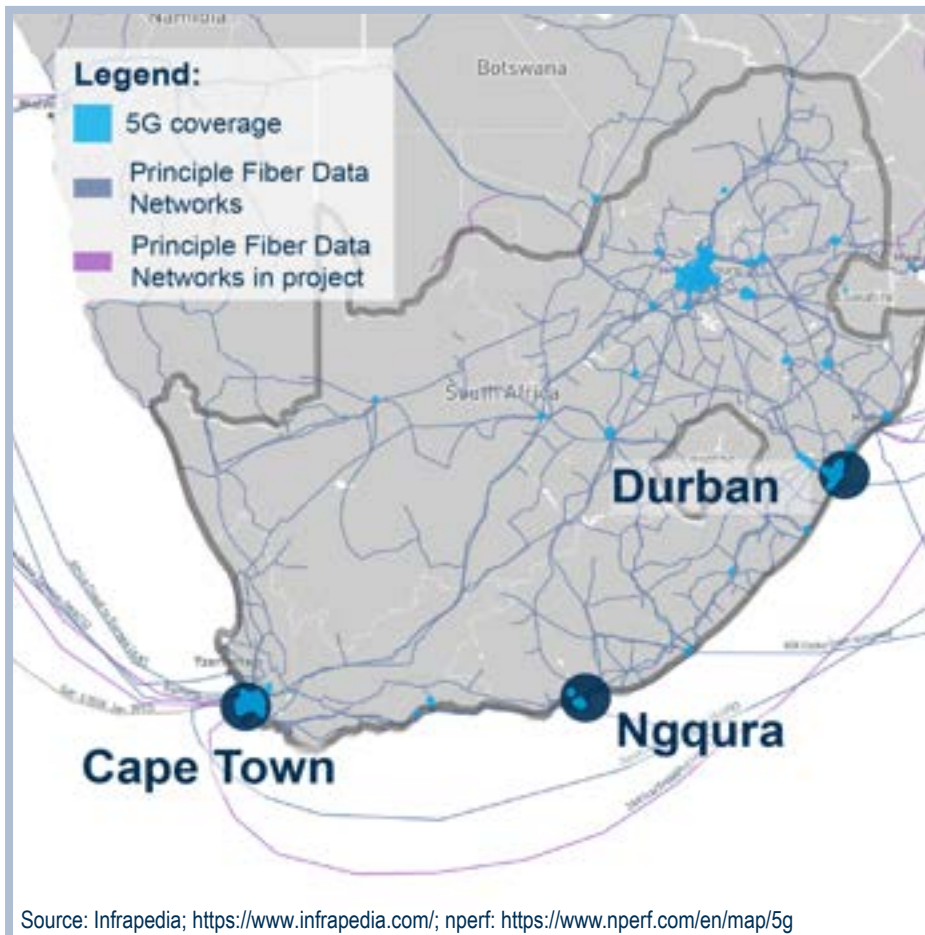
Country statistics

Population (millions):	59.4	International trade: 56% of GDP	Global Competitiveness Index: 62.4 WEF, 2019
GDP (2021):	US\$ 419.0 bn	Export: US\$ 132.7 billion Where 8.5% goes to African Nations	
GDP per capita (2021):	US\$ 7,055.1	Import: US\$ 127.6 billion Where 30.4% is from African Nations	
Human Capital Index (2020):	0.4		

Port statistics

	Durban	Cape Town	Ngqura		Port authorities:
Port model:	Landlord Port	Landlord Port	Landlord Port		Durban: Transnet National Port Authority (TNPA)
Trade volumes:	42,000K	17,000K	6,000K	Tonnes	Cape Town
	3,000K	930K	730K	TEU	Ngqura
Vessels handled:	3,000	2,300	640	per annum	Maritime authority:
					South African Maritime Safety Authority (SAMSA)

National ICT infrastructure



Network Readiness Index	48.9
Global Cybersecurity Index	78.5 2020
AIDI: ICT (2018)	76.9 African Infrastructure Development Index for ICT
Internet penetration	70.0% WB, 2020 % of population using the internet
	4.6% ↗ Avg annual growth WB, 2010-2020
Data centers	33 Colocation data centres in the country
Cloud hosting centers	5 Providers offering Infrastructure as a Service

Institutional Framework

Internet censorship effort

1.7

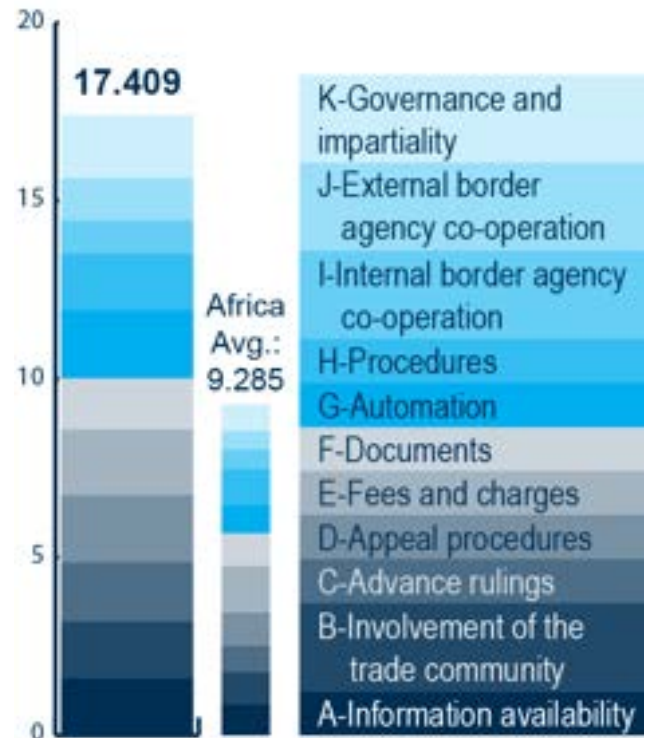
USAID, 0 = worldwide average

Country policy and institutional assessment (CPIA)

3.1

2021, Region avg.

OECD: Trade Facilitation Indicator



Policies and digital Strategies

Strategic Plan for the department of communications and digital technologies 2020 - 2025

The goal is to promote inclusive economic and social participation through digital transformation, leveraging the Fourth Industrial Revolution, and creating an enabling environment for a digital society to drive socio-economic growth.

National Digital and Future Skills strategy 2020 -

To foster digital skills development at all levels of education, recognizing their importance for economic growth, social development, and cultural enrichment across sectors.

National e-Government Strategy and Roadmap 2017 -

To assess the current status of e-Government implementation and address implementation challenges to guide the digital transformation of public services towards an inclusive digital society for the benefit of all citizens.

Digitalization legislation



ICT Authority

Law No. 13 of 2000

Title:
Independent Communications Authority of South Africa Act

Institute:
Ministry of Communications and digital technologies



Data Protection

Law No. 4 of 2013

Title:
Protection of Personal Information Act

Institute:
Ministry of Communications and digital technologies



Cybercrimes

Law No. 19 of 2020

Title:
Cybercrimes Act

Institute:
South African Police Service



Single Window

Law No. 31 of 2014

Title:
Customs Control Act

Institute:
South African Revenue Service (SARS)



Other

Act 36 of 2005

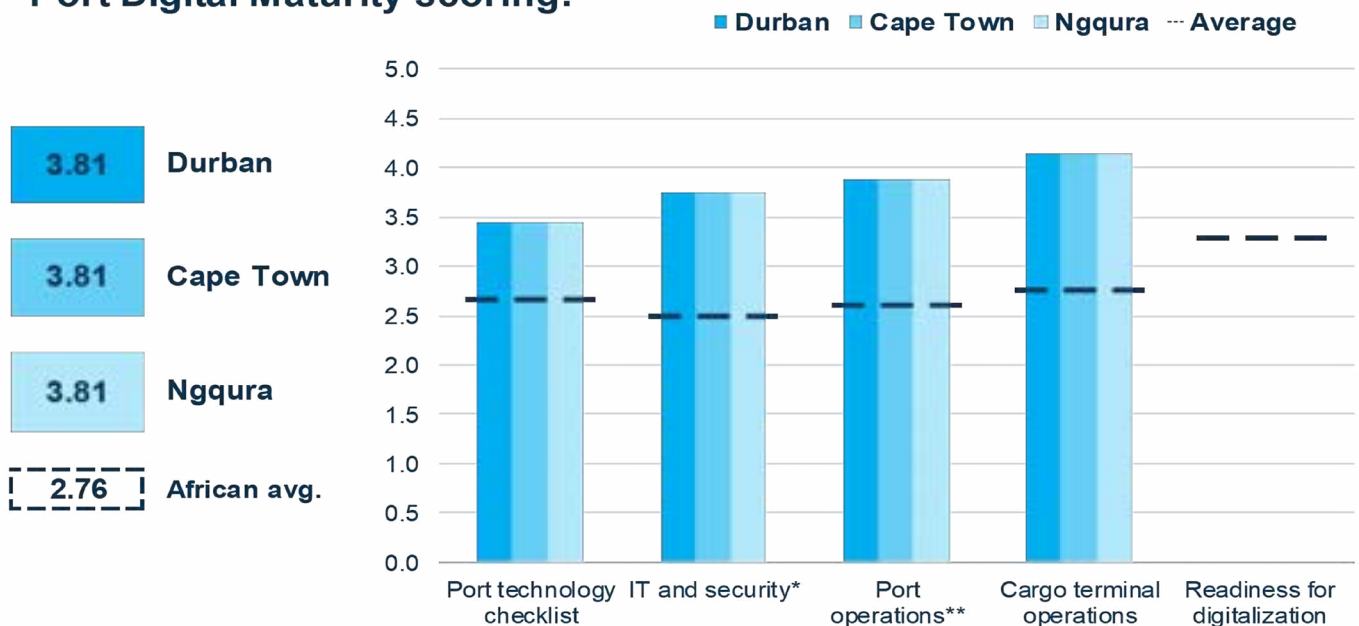
Title:
Electronic Communications Act

Institute:
Ministry of Communications and digital technologies

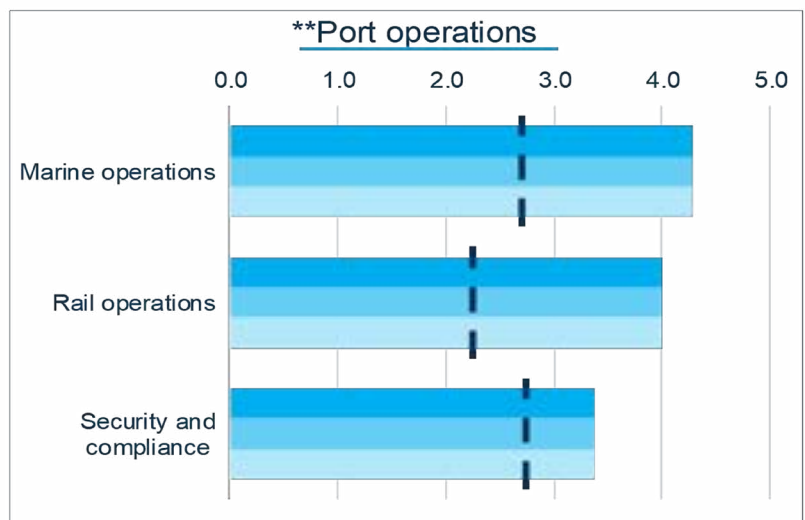
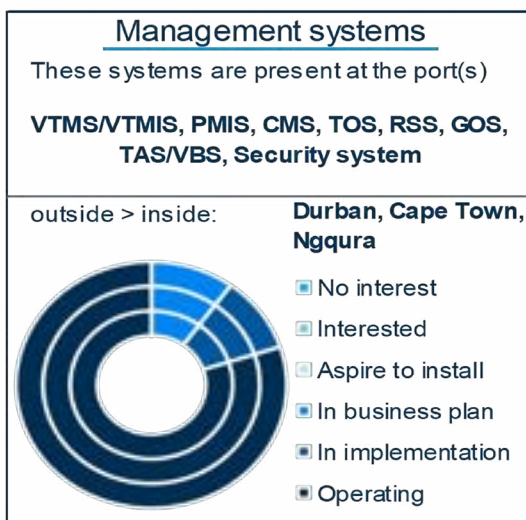
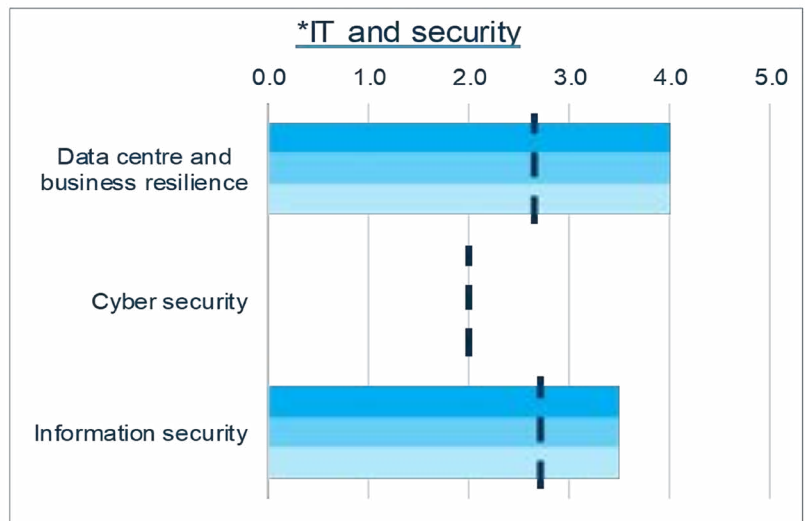
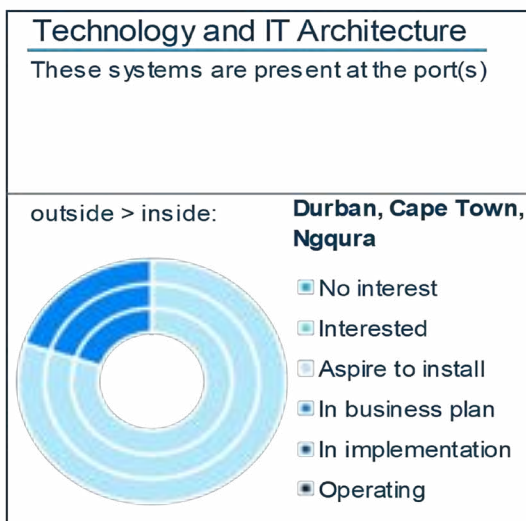
Port IT systems and services

Note: Data is not obtained from an interview but from desktop research and expert judgement

Port Digital Maturity scoring:



Port Maturity breakdown:



Sudan

Country statistics

Population (millions):	45.7
GDP (2021):	US\$ 34.2 bn
GDP per capita (2021):	US\$ 749.7
Human Capital Index (2020):	0.4

International trade: 4% of GDP

Export: US\$ 0.6 billion
Where 4.7% goes to African Nations

Import: US\$ 10.6 billion
Where 10.9% is from African Nations

Global Competitiveness Index:

44.7

Region avg., 2019

Port statistics

Port Sudan		
Port model:	Tool Port	
Trade volumes:	7,500K	Tonnes
	450K	TEU
Vessels handled:	600	per annum

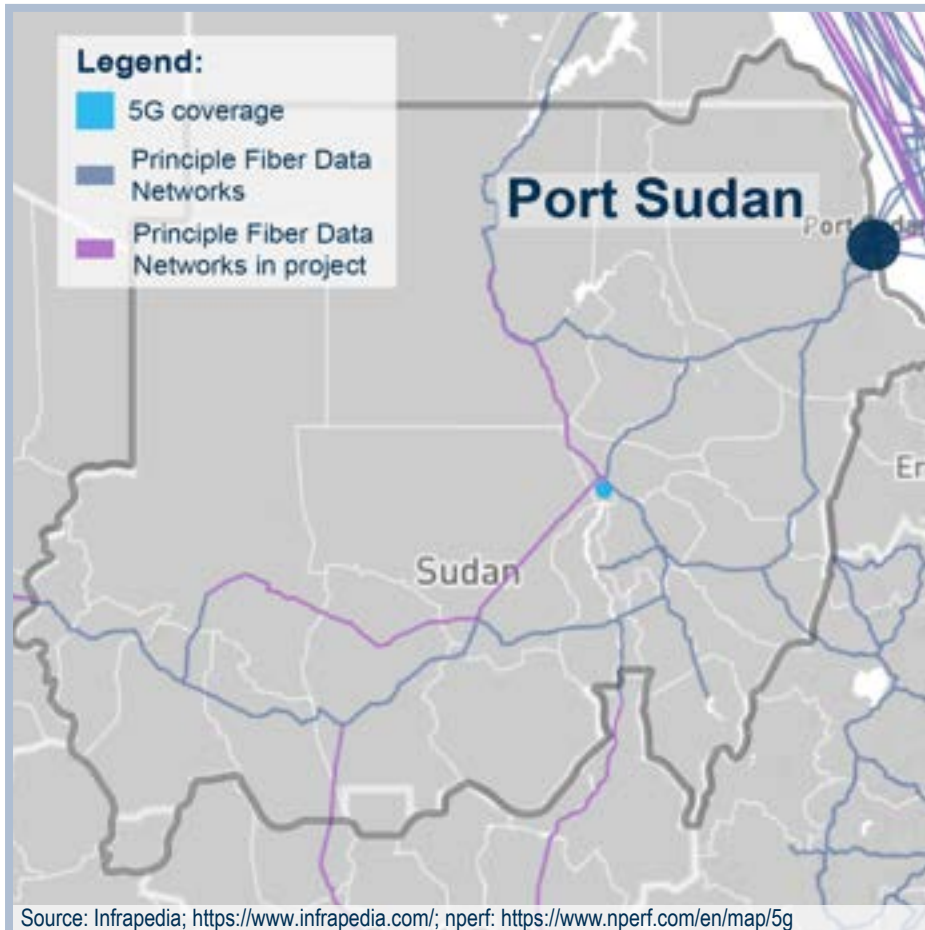
Port authorities:

Port Sudan Sea Ports Corporation

Maritime authority:

The Sudanese Maritime Administration Corporation (SMAC)

National ICT infrastructure



Network Readiness Index

32.7 Region avg.

Global Cybersecurity Index

35.0 2020

AIDI: ICT (2018)

16.1 African Infrastructure Development Index for ICT

Internet penetration

28.4% WB, 2020
% of population using the internet

3.6%
Avg annual growth WB, 2010-2020

Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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-1.8

USAID, 0 = worldwide average

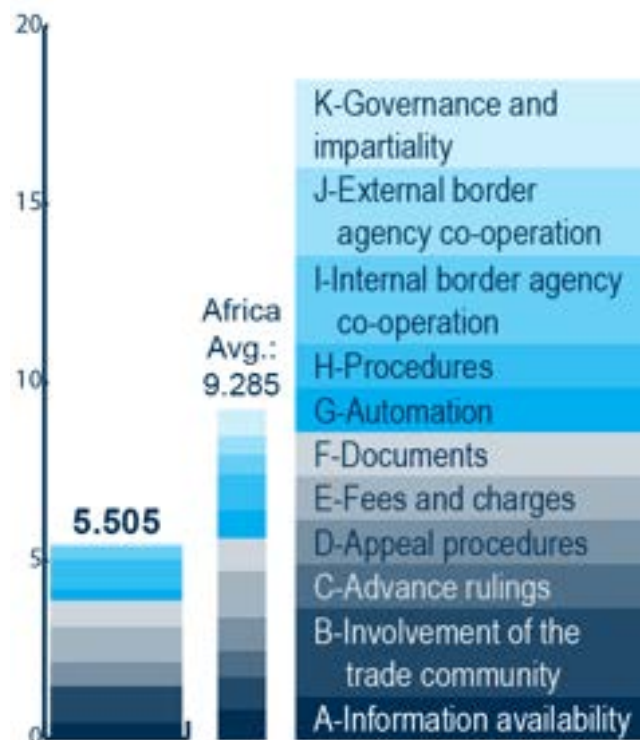
2.3

2021






Policies and digital Strategies

Sudan National Strategy of ICT industry 2007 -

It includes among its objectives moving towards the information society, the dissemination of ICT, providing access for all, increasing employment opportunities and reducing poverty.



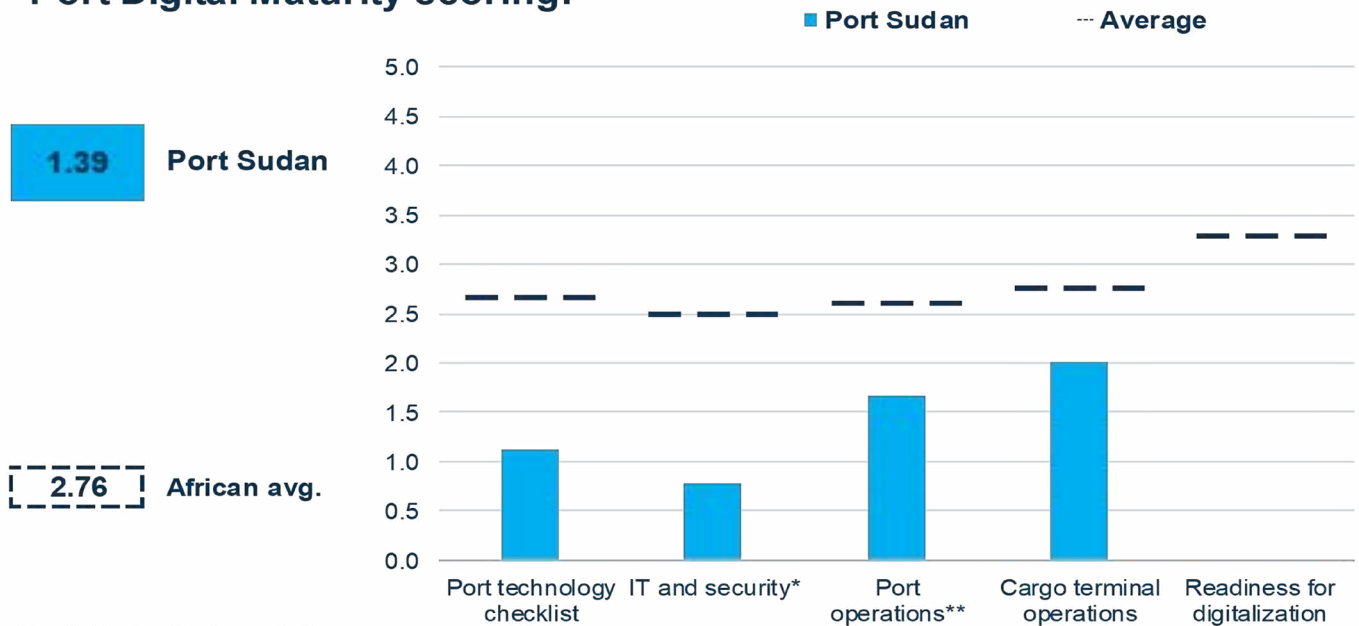
Digitalization legislation

ICT Authority	Data Protection	Cybercrimes	Single Window	Other
				
Cybercrime Act, 2007	-	-	-	Electronic Transactions Act, 2007
Title: Cybercrime Act	Title: -	Title: -	Title: -	Title: Electronic Transactions Act
Institute: Ministry of Justice	Institute: -	Institute: -	Institute: -	Institute: Electronic Licensing National committee

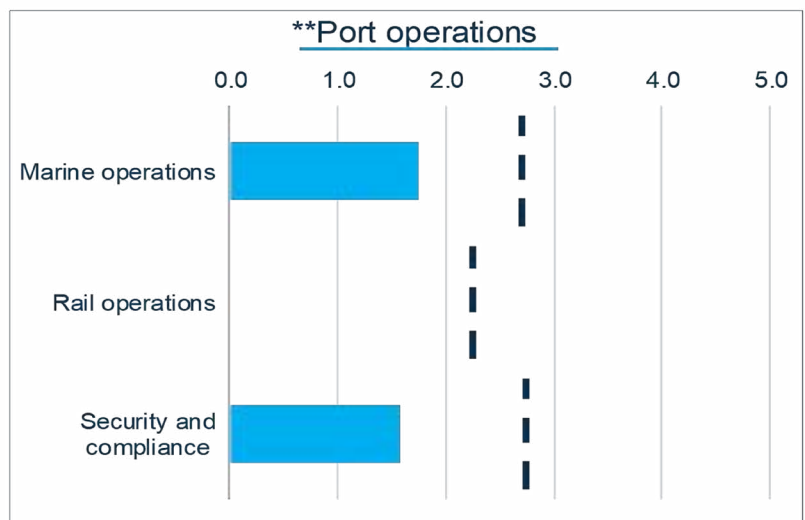
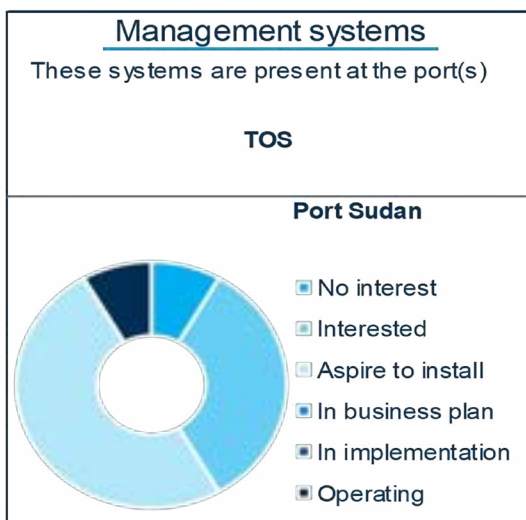
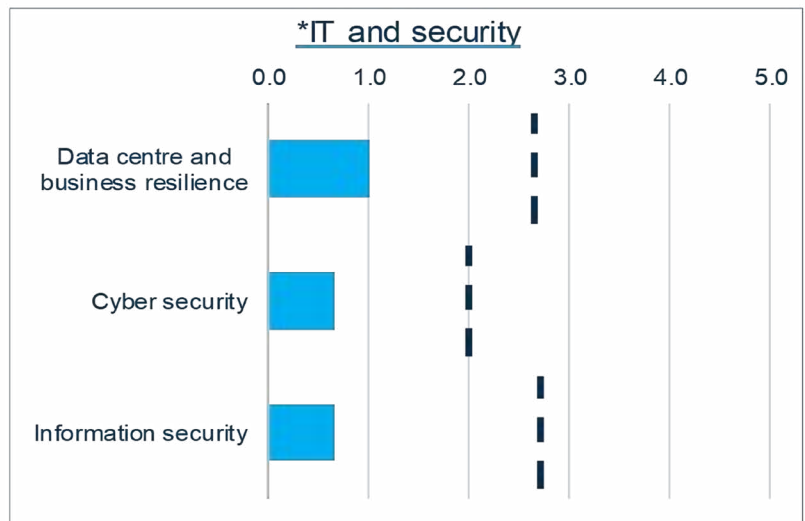
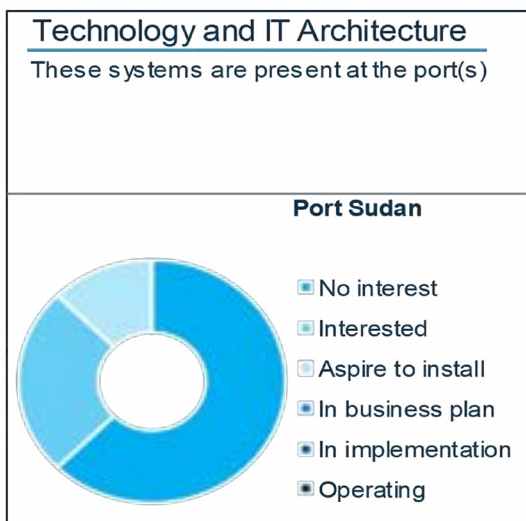
Port IT systems and services

Note: Data is not obtained from an interview but from desktop research and expert judgement

Port Digital Maturity scoring:



Port Maturity breakdown:



Tanzania

Country statistics

Population (millions):	63.6
GDP (2021):	US\$ 70.7 bn
GDP per capita (2021):	US\$ 1,146.0
Human Capital Index (2020):	0.4

International trade: **30% of GDP**

Export: **US\$ 9.6 billion**
Where 11.0% goes to African Nations

Import: **US\$ 11.7 billion**
Where 45.3% is from African Nations

Global Competitiveness Index:

48.2

WEF, 2019

Port statistics

Dar es Salaam		
Port model:	Landlord Port	
Trade volumes:	17,500K	Tonnes
	502K	TEU
Vessels handled:	1,500	per annum

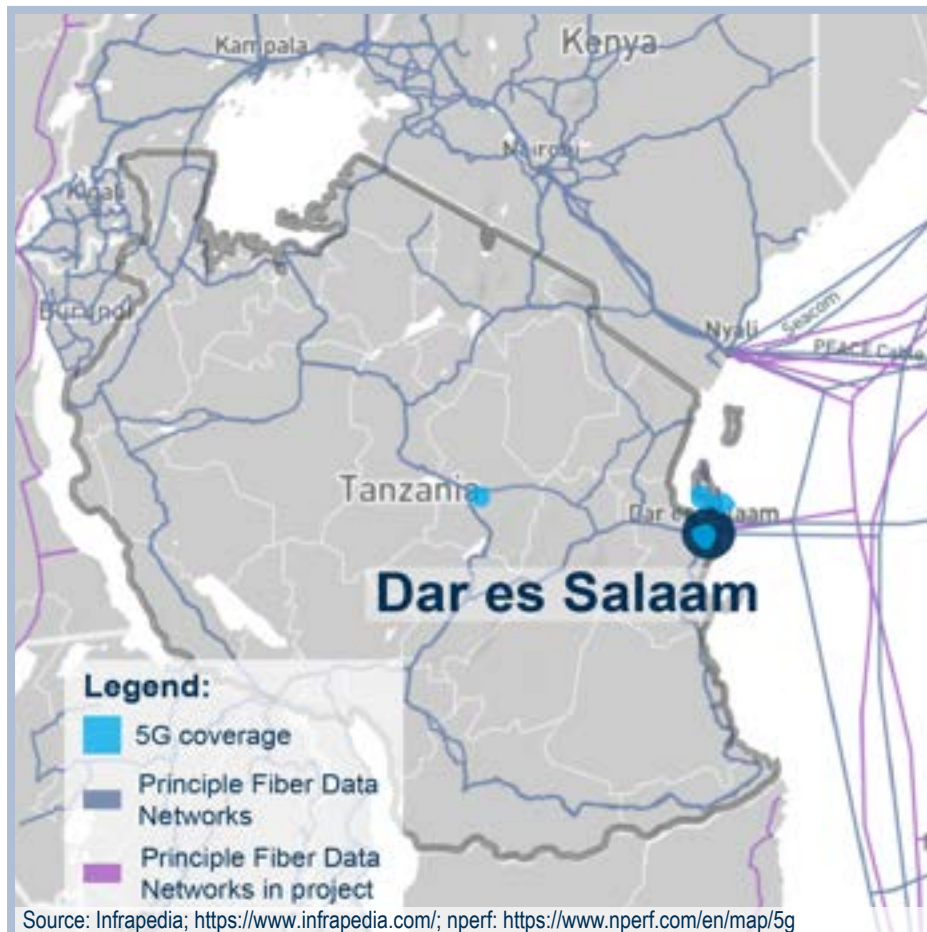
Port authorities:

Dar es Salaam Tanzania Ports Authority (TPA)

Maritime authority:

Surface and Maritime Transport Regulatory Authority

National ICT infrastructure



Network Readiness Index

37.8

Global Cybersecurity Index

90.6 2020

AIDI: ICT (2018)

10.4 African Infrastructure Development Index for ICT

Internet penetration

22.0% WB, 2020
% of population using the internet

1.9%
Avg annual growth WB, 2010-2020

Data centers

2 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

Internet censorship effort 0.6 USAID, 0 = worldwide average	Country policy and institutional assessment (CPIA) 3.5 2021	OECD: Trade Facilitation Indicator
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Policies and digital Strategies

National ICT Policy 2017 -

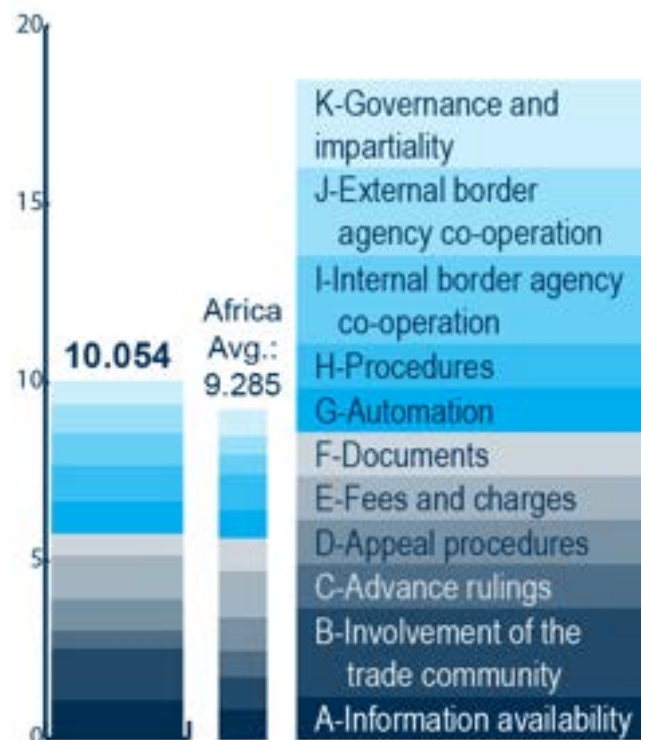
This policy aims to create an enabling environment for the development and use of ICT in Tanzania, with a focus on promoting innovation, expanding access to ICT infrastructure, and improving digital skills and literacy.

The e-Government Agency (eGA) Strategic Plan 2021 - 2026






Develop and implement a comprehensive national ICT governance framework and infrastructure, including policies, regulations, and user-friendly e-government services, to enhance cybersecurity, capacity building, partnerships, and resource management in the public sector.

TPA Digital Transformation Strategy 2020 - 2024

To digitally transform Tanzania's port industry, initiatives include implementing an PMIS, automating cargo clearance, establishing electronic billing and payment, adopting a paperless documentation system, and enhancing digital communication among stakeholders.

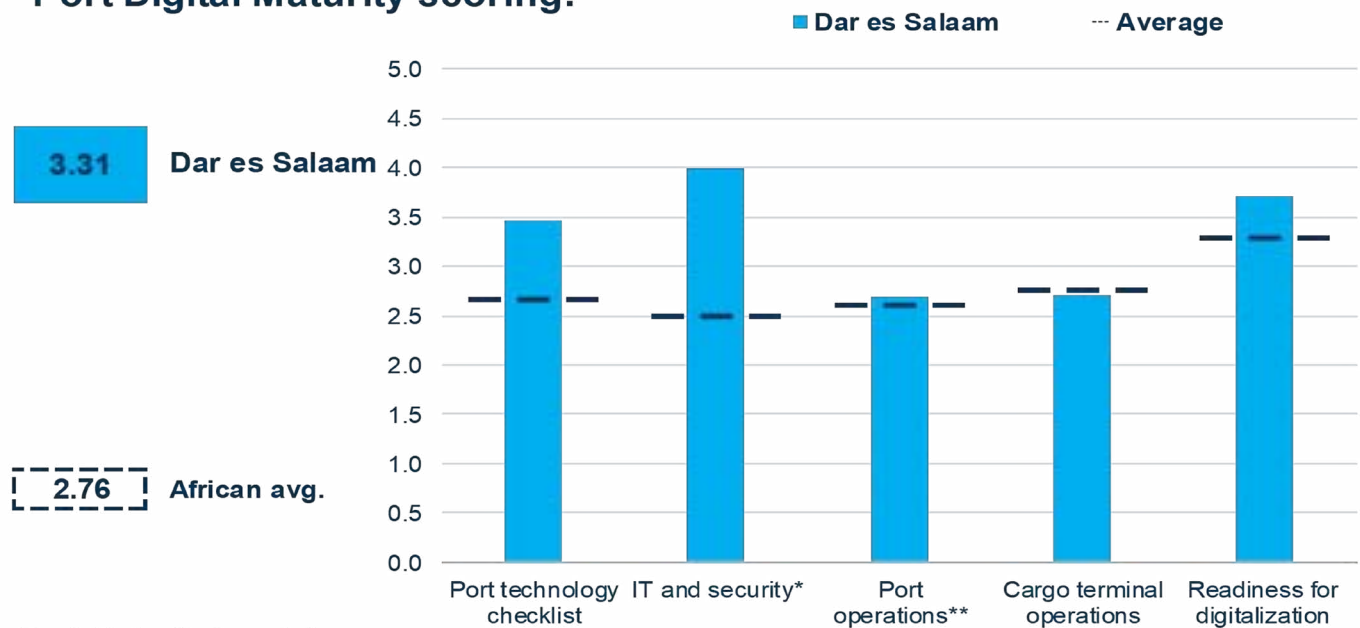


Digitalization legislation

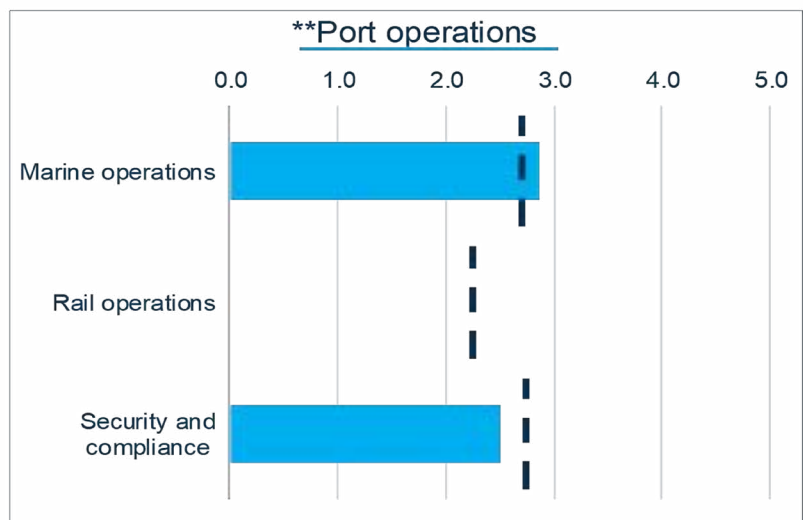
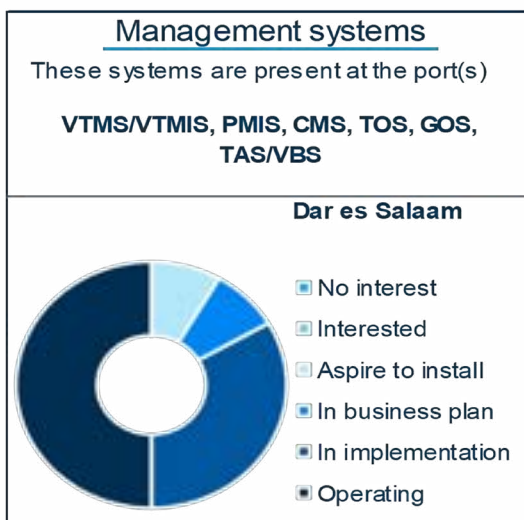
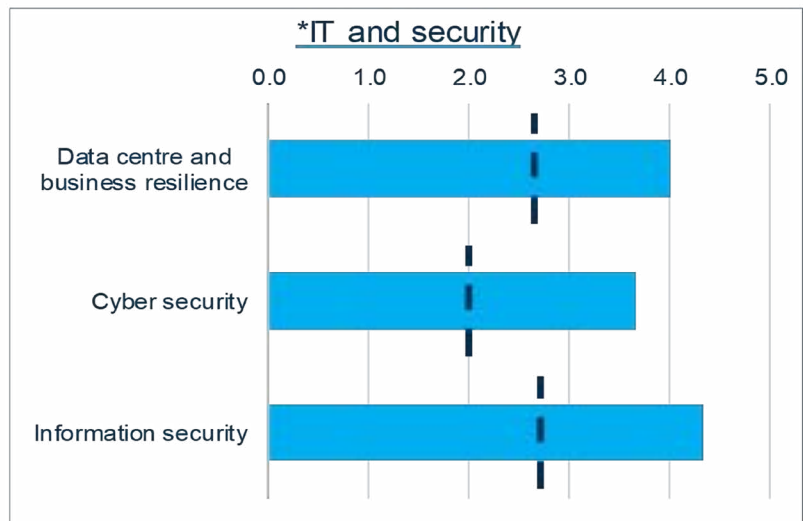
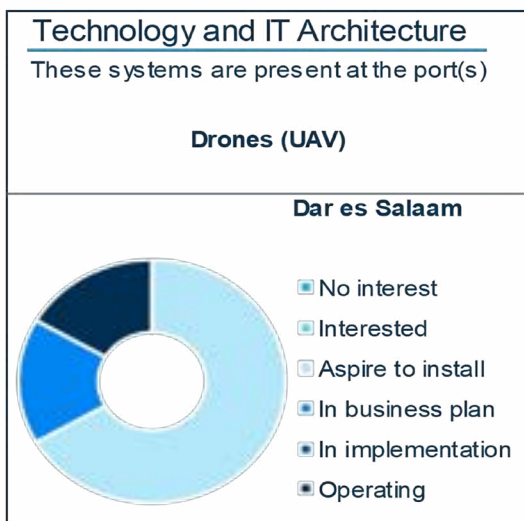
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
 Law No. 12 2003	 Law No. 9 of 2019	 Law No. 14 of 2015	 -	 Law No. 10 OF 2019
Title: the Tanzania Communications Regulatory Authority Act	Title: Data Protection Act	Title: the Cybercrimes Act	Title: -	Title: The e-Government Act
Institute: Tanzania Communications Regulatory Authority (TCRA)	Institute: the Ministry of Constitution and Legal Affairs	Institute: Ministry of Communication and Information Technology	Institute: -	Institute: the e-Government Authority

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Togo

Country statistics

Population (millions):	8.6
GDP (2021):	US\$ 8.3 bn
GDP per capita (2021):	US\$ 964.1
Human Capital Index (2020):	0.4

International trade: **55% of GDP**

Export: **US\$ 2.0 billion**
Where 34.9% goes to African Nations

Import: **US\$ 3.1 billion**
Where 23.8% is from African Nations

Global Competitiveness Index:

47.4

Region avg., 2019

Port statistics

Lome	
Port model:	Landlord Port
Trade volumes:	26,000K Tonnes
	1,700K TEU
Vessels handled:	1,600 per annum

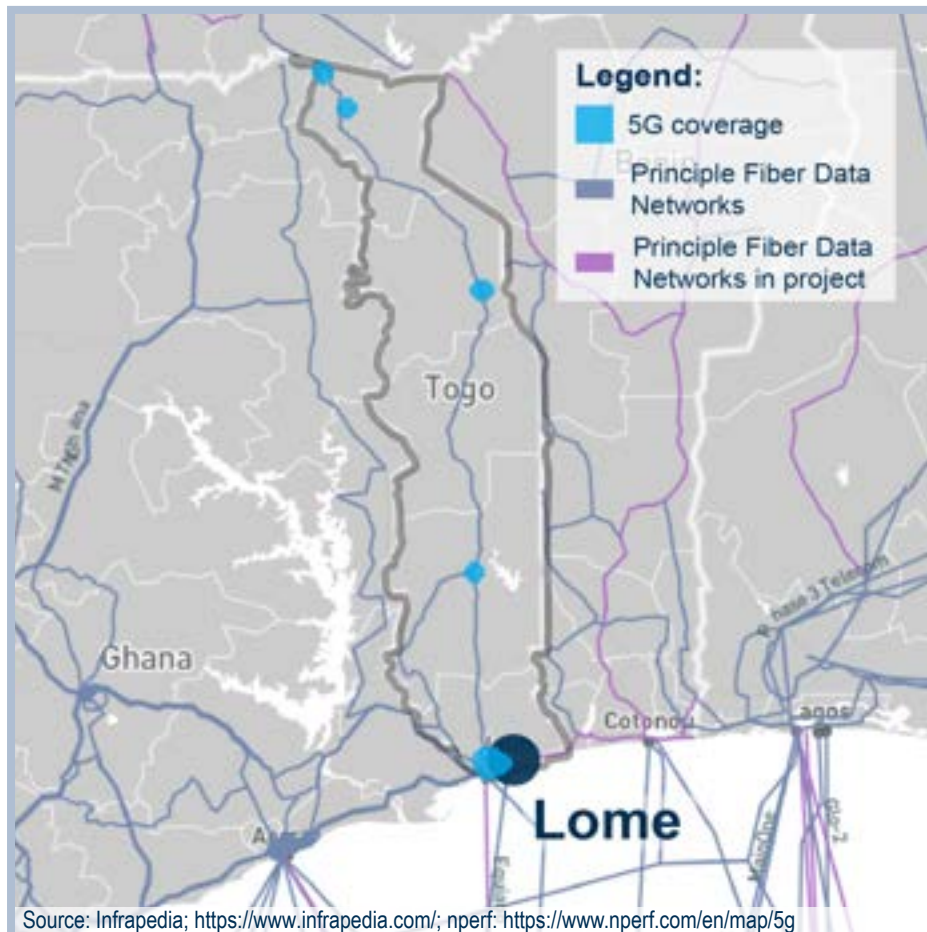
Port authorities:

Lome Port Autonome de Lome

Maritime authority:

Togolese Maritime Authority

National ICT infrastructure



Network Readiness Index

36.2 Region avg.

Global Cybersecurity Index

33.2 2020

AIDI: ICT (2018)

11.1 African Infrastructure Development Index for ICT

Internet penetration

24.0% WB, 2020
% of population using the internet

2.1%
Avg annual growth WB, 2010-2020

Data centers

0 Colocation data centres in the country

Cloud hosting centers

0 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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-0.3
USAID, 0 = worldwide average

3.5
2021

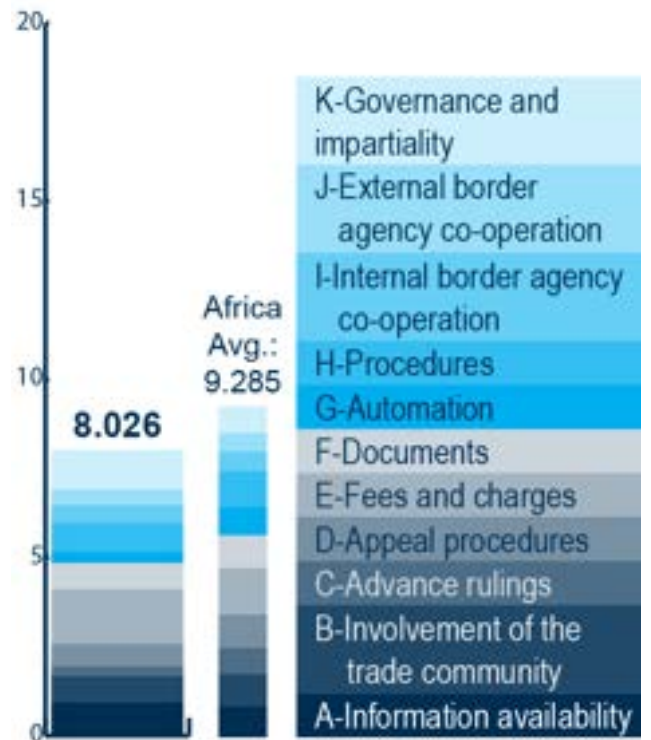
Policies and digital Strategies

National Digital Planning Strategy 2017 - 2022

The goals include expanding broadband access, becoming a digital readiness leader, enhancing educational institutions, fostering entrepreneurship and innovation, utilizing the digital sector for economic growth, and ensuring cybersecurity and data protection.

e-ID Togo 2018 - 2022

The goals are to develop a modern biometric identification system for citizens and residents, enable targeted service delivery, enhance interoperability, provide secure authentication, increase access to services, and ensure effective governance and subsidy distribution.

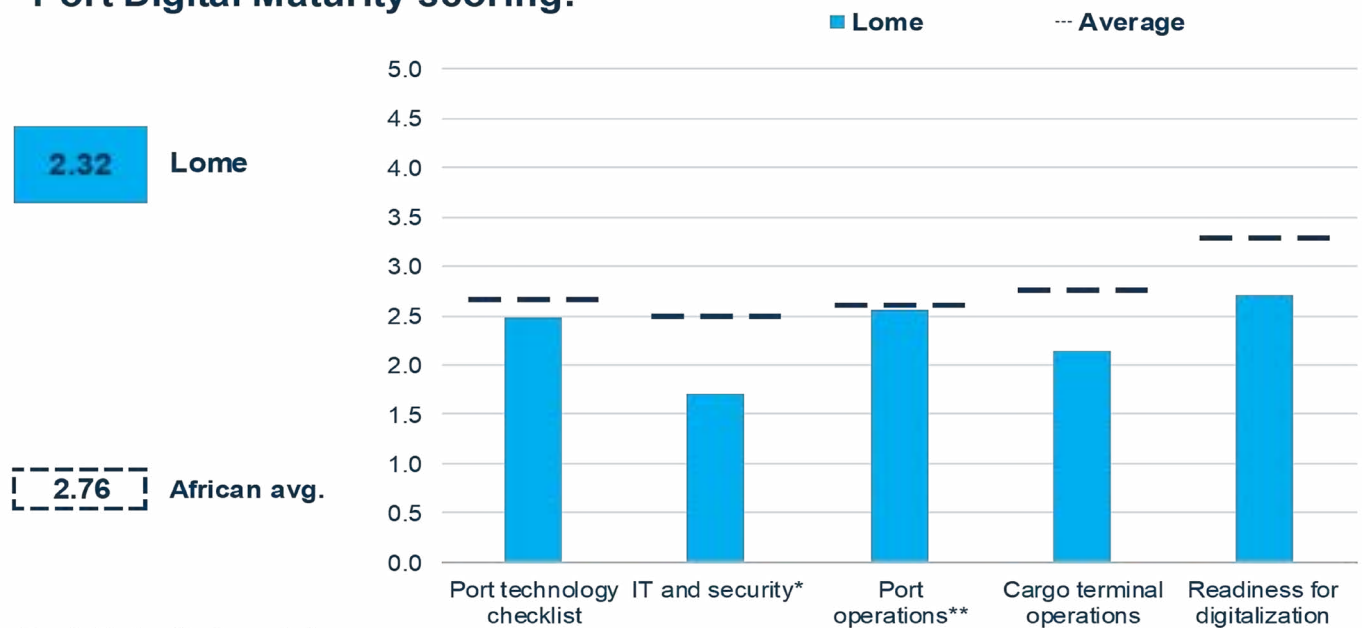


Digitalization legislation

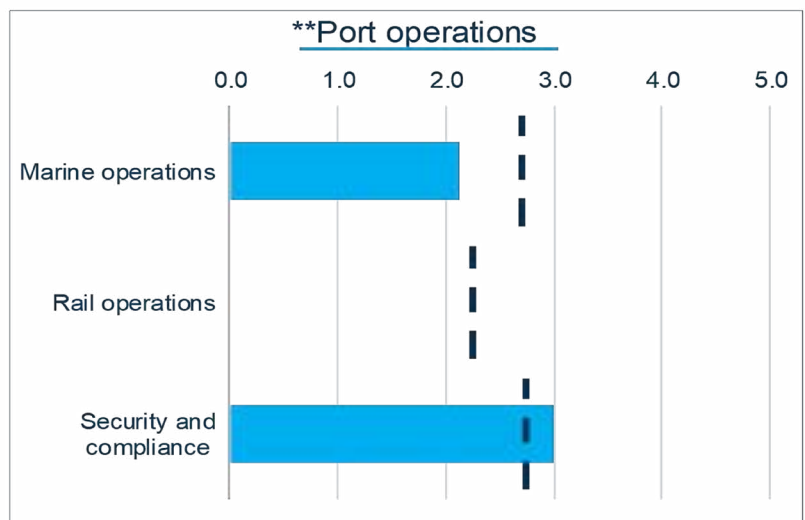
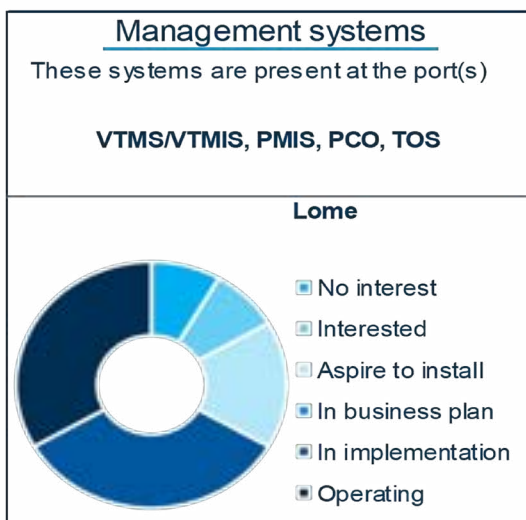
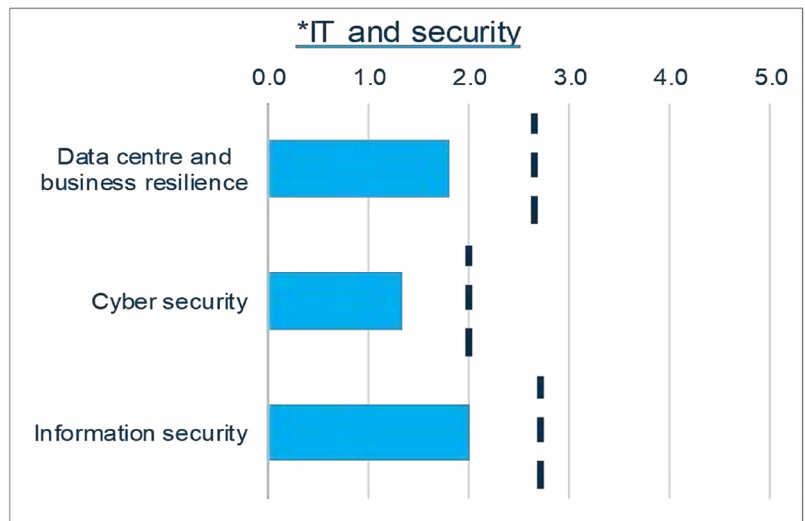
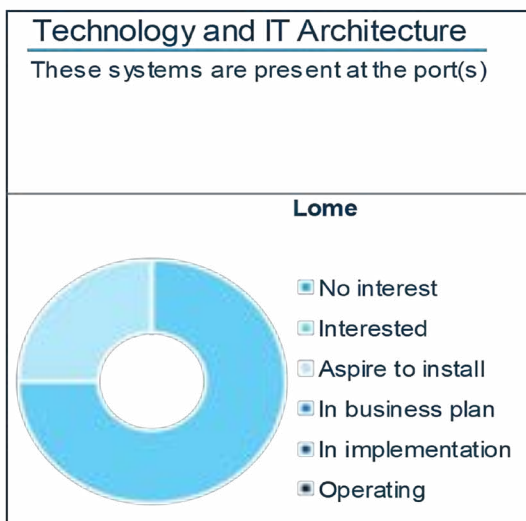
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
Law No. 2012-018	Law No. 2019-014	-	-	Law No. 2017-07
Title: On the electronic communications	Title: On the Protection of Personal Data	Title: -	Title: -	Title: On electronic transactions
Institute: The electric communications regulatory authority	Institute: Togolese data protection authority ('IPDCP')	Institute: -	Institute: -	Institute: The Togolese government

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



Tunisia

Country statistics

Population (millions):	12.3
GDP (2021):	US\$ 46.7 bn
GDP per capita (2021):	US\$ 3,807.2
Human Capital Index (2020):	0.5

International trade: **94% of GDP**

Export: **US\$ 19.4 billion**
Where 9.7% goes to African Nations

Import: **US\$ 25.1 billion**
Where 3.2% is from African Nations

Global Competitiveness Index:

56.4

WEF, 2019

Port statistics

Rades		
Port model:	Public Service Port	
Trade volumes:	6,000K	Tonnes
	300K	TEU
Vessels handled:	1,200	per annum

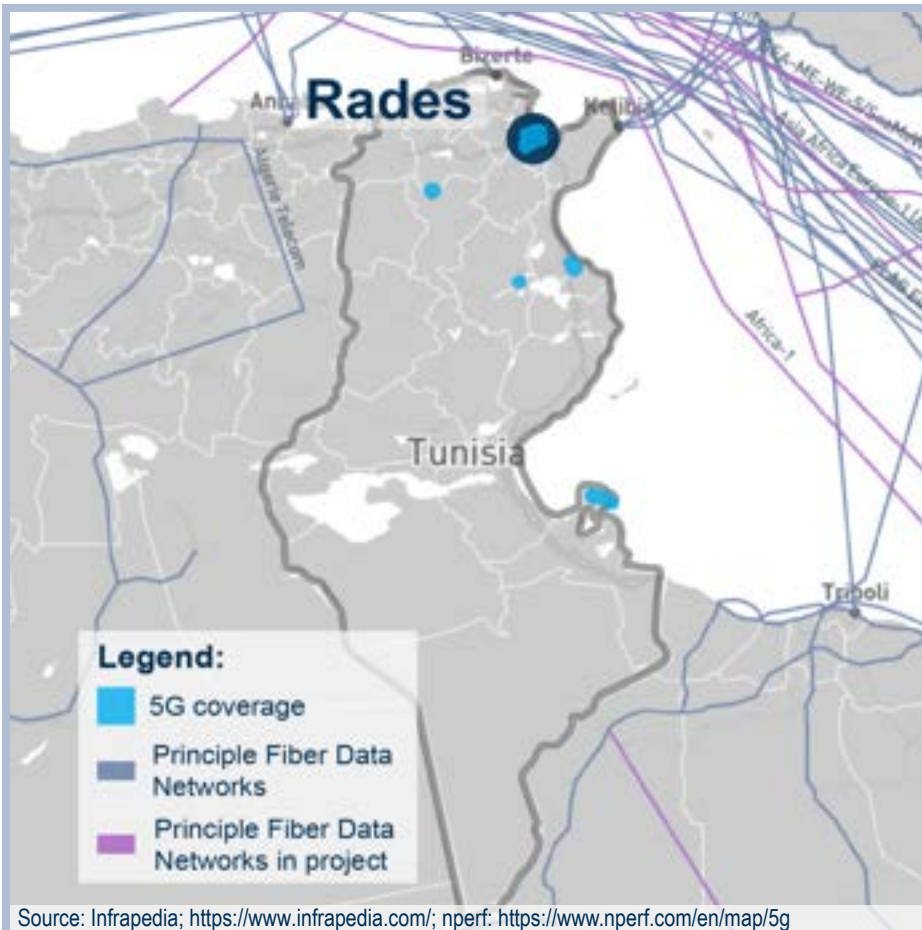
Port authorities:

Rades Office de la Marine Marchande et des Ports (OMMP)

Maritime authority:

Office de la Marine Marchande et des Ports (OMMP)

National ICT infrastructure



Network Readiness Index

45.5

Global Cybersecurity Index

86.2 2020

AIDI: ICT (2018)

38.1 African Infrastructure Development Index for ICT

Internet penetration

71.9% WB, 2020
% of population using the internet

3.5%
Avg annual growth WB, 2010-2020

Data centers

2 Colocation data centres in the country

Cloud hosting centers

1 Providers offering Infrastructure as a Service

Institutional Framework

<p>Internet censorship effort</p>	<p>Country policy and institutional assessment (CPIA)</p>	<p>OECD: Trade Facilitation Indicator</p>
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0.9
USAID, 0 = worldwide average

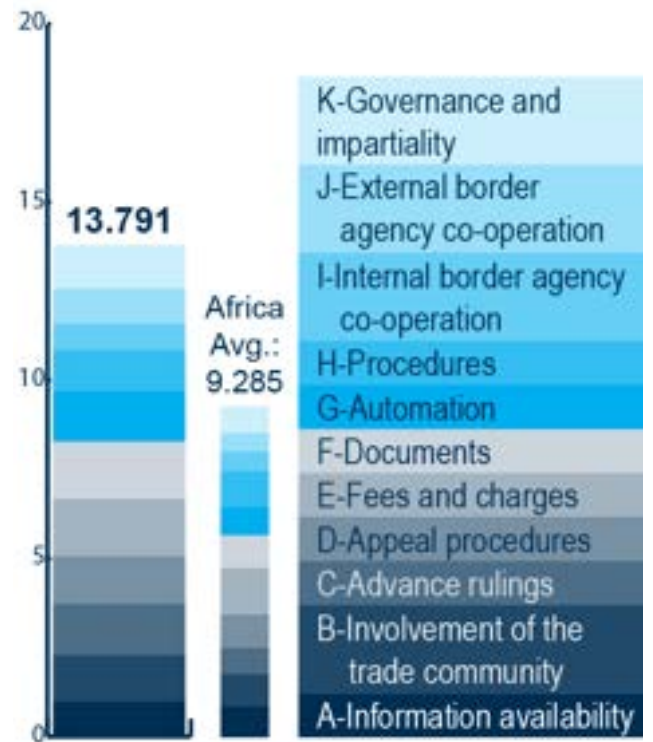
-
No data

Policies and digital Strategies

National Digital Transformation Strategy 2021 - 2025
The goals are to develop digital and financial inclusion, attract investment in the digital sector, digitize administrative procedures, define Tunisia's strategy on emerging technologies, adapt training to ICT needs, and implement a cybersecurity policy while strengthening data protection.

National strategic plan Digital Tunisia 2020 2016 - 2020
Goals include reducing the digital divide, enhancing digital literacy, establishing an efficient e-Government, improving business competitiveness through ICT investment, and facilitating Tunisia's transition to digital technology through appropriate regulations.

Smart Tunisia programme
Smart Tunisia is a national program aimed at fostering digital investment, nurturing the IT ecosystem, promoting innovation, positioning Tunisia as a technology destination, and attracting international operators to view Tunisia as a Talent Hub.

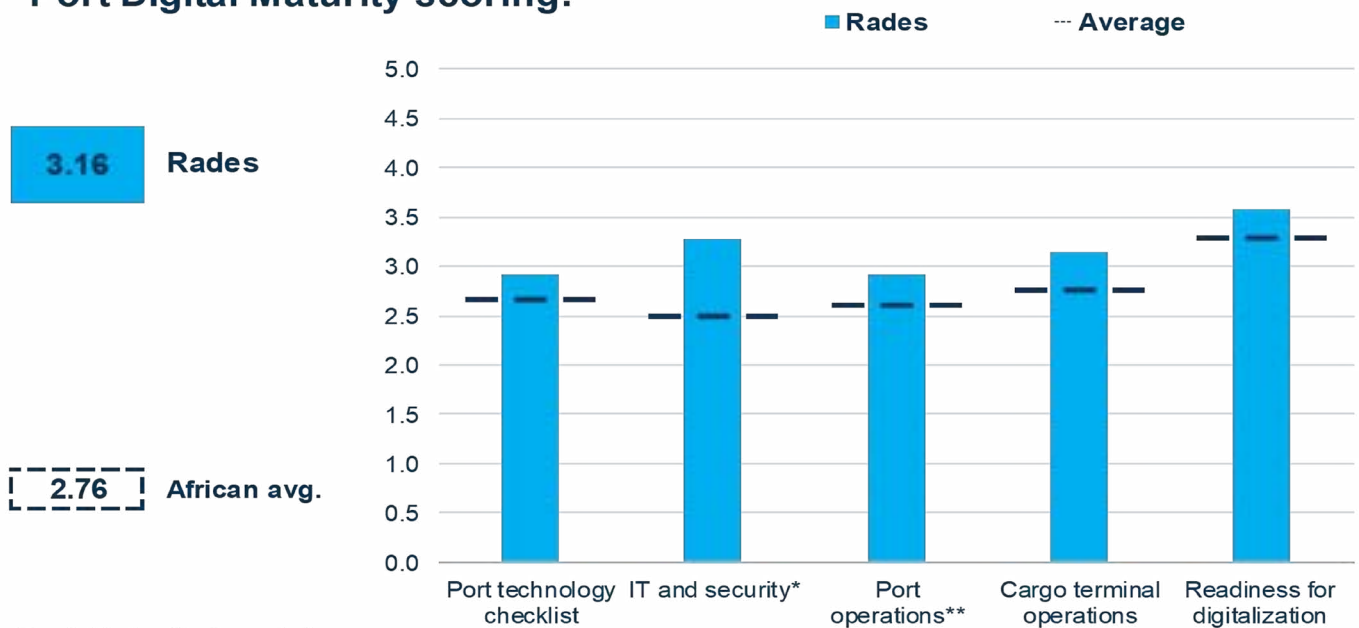


Digitalization legislation

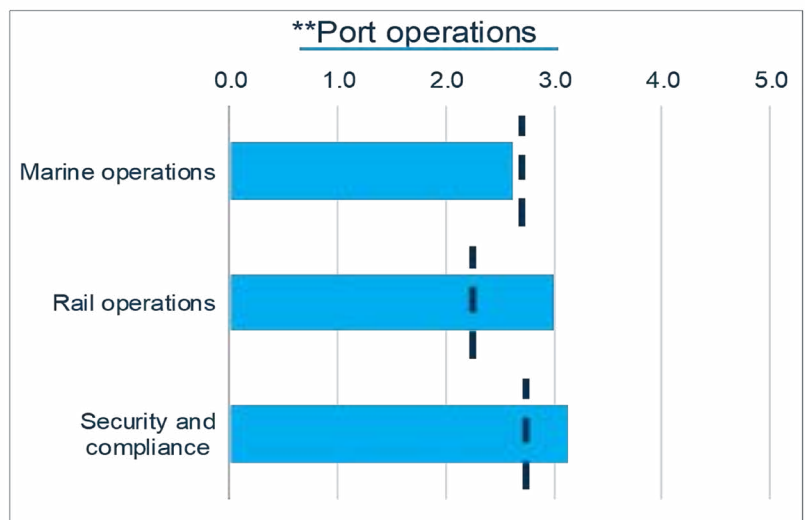
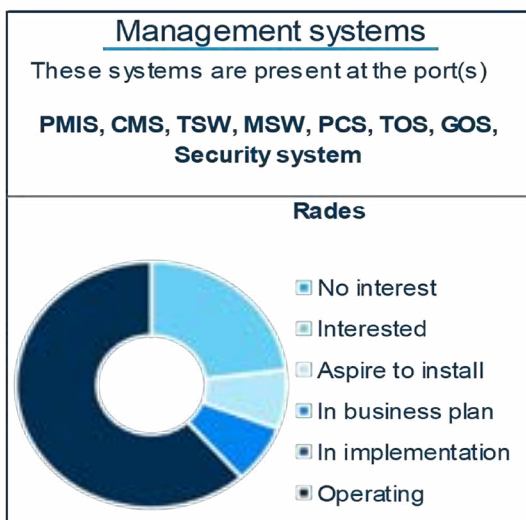
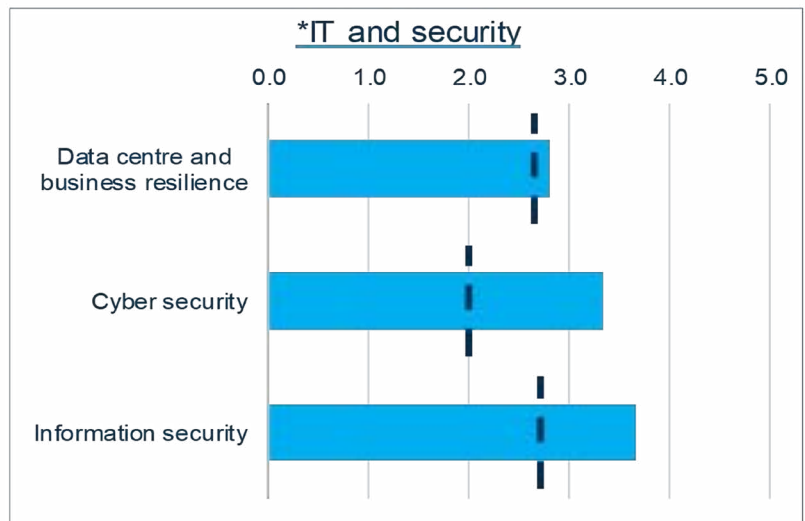
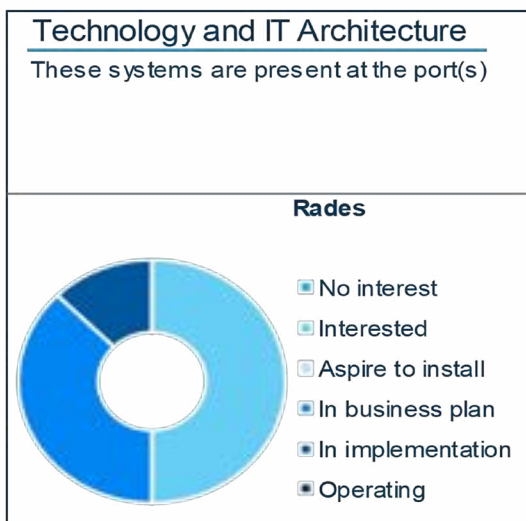
ICT Authority	Data Protection	Cybercrimes	Single Window	Other
Law No. 2001-1	Law No. 2004-63	Decree-Law No. 2022-54	Decree No. 2020-48	Law No. 2016-22
Title: promulgating the Telecommunications Code	Title: On the Protection of Personal Data	Title: relating to the fight against offenses relating to information and communication systems	Title: on import and marketing approval procedures for telecommunications terminal equipment and radio equipment	Title: On the access to information
Institute: National Telecommunications Authority	Institute: Tunisian data protection authority ('INPDP')	Institute: Ministry of ICT	Institute: the Ministry of Communication Technologies and the Digital Economy	Institute: The ministry of ICT

Port IT systems and services

Port Digital Maturity scoring:



Port Maturity breakdown:



References

The desktop research for the Fact Files was carried out using publicly available online resources and historic reports and studies, including those provided by the World Bank and IAPH, with a focus on indices or reports that allow some standardised comparison between countries. Sources that are available for more countries within the scope are chosen above sources that are more recent (but including less countries). These sources include:

Country statistics:

- **Population:** World Bank. (2021). *Population, total*. World Bank Data.
https://data.worldbank.org/indicator/SP.POP.TOTL?end=2021&name_desc=false&start=1960
- **GDP:** World Bank. (2021). *GDP (current US\$)*. World Bank Data.
https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2021&name_desc=false&start=1960
Exceptions:
 - Somaliland: Somaliland Central statistics department. (2021). *Somaliland GDP Report 2021*. Somaliland Ministry of Planning and National Development.
- **GDP per capita:** World Bank. (2021). *GDP per capita (current US\$)*. World Bank Data.
https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2021&name_desc=false&start=1960
Exceptions:
 - Somaliland: Somaliland Central statistics department. (2021). *Somaliland GDP Report 2021*. Somaliland Ministry of Planning and National Development.
- **Human Capital Index:** World Bank. (2020). *Human Capital Index (scale 0-1)*. World Bank Data.
https://data.worldbank.org/indicator/HD.HCI.OVRL?name_desc=false
- **International Trade:** World Bank. (2021). *Trade (% of GDP)*. World Bank Data.
https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?end=2021&name_desc=false&start=1960&view=chart
- **Import and export (across the world and to/from African nations):** Chatham House, The Royal Institute of International Affairs. (2020). *Resource Trade*. <https://resourcetrade.earth/>
- **Global Competitiveness Index:** World Economic Forum. (2019). *The Global Competitiveness Report 2019*.
Exceptions:
 - Liberia, Mauritania and Sierra Leone: World Economic Forum. (2018). *The Global Competitiveness Report 2018*.
 - Comoros, Congo (Republic), Djibouti, Guinea-Bissau, Sao Tome et Principe, Somalia, Somaliland, Sudan and Togo: For each of these respective countries no WEF data is available. An average has been taken from all bordering countries of which WEF data is available. This is indicated with *Region Avg.* in the Fact sheets.

Port statistics:

- **Port model:** Royal HaskoningDHV
- **Trade volume:** S&P Global Maritime Portal. (n.d.). *Sea-web Ports*. Retrieved in 2023 from [Martime.ihs.com](https://www.maritime.ihs.com).
- **Vessels handled:** S&P Global Maritime Portal. (n.d.). *Sea-web Ports*. Retrieved in March 2023 from [Martime.ihs.com](https://www.maritime.ihs.com).

National ICT infrastructure:

- **Network Readiness Index:** Portulans Institute. (2022). *Benchmarking the Future of the Network Economy*. <https://networkreadinessindex.org/countries/>
Exceptions:
 - Comoros, Congo (Republic), Djibouti, Gabon, Guinea-Bissau, Liberia, Mauritania, Sao Tome et Principe, Sierra Leone, Somalia, Somaliland, Sudan, Togo :
For each of these respective countries no NRI data is available. An average has been taken from all bordering countries of which NRI data is available. This is indicated with *Region Avg.* in the Fact sheets.
- **Global Cybersecurity Index:** International Telecommunications Union. (2020). *Global Cybersecurity Index*. ITU Publications.
- **AIDI: ICT :** African Development Bank. (2018). *The Africa Infrastructure Development Index 2018: ICT index*.
- **Internet penetration:** World Bank. (2010-2020). *Individuals using the Internet (% of population)*. World Bank Data. <https://data.worldbank.org/indicator/IT.NET.USER.ZS>
- **Data centers:** DataCenterMap. (n.d.). *Data Centers*. Retrieved in March 2023 from <https://www.datacentermap.com/datacenters/>
- **Cloud hosting centers:** DataCenterMap. (n.d.). *Cloud infrastructure*. Retrieved in March 2023 from <https://www.datacentermap.com/cloud/>
- **Principle Fiber Data Networks (in project):** Infrapedia. (n.d.). Retrieved in April 2023 from <https://www.infrapedia.com/>
- **5G coverage:** nperf. (n.d.) *5G coverage map worldwide*. Retrieved in April 2023 from <https://www.nperf.com/en/map/5g>

Institutional Framework

- **Internet censorship effort:** USAID. (n.d.). *Country Dashboard*. Retrieved in March 2023 from <https://idea.usaid.gov/cd>
- **Country policy and institutional assessment (CPIA):** World Bank. (2022). *CPIA Africa*.
Exceptions:
 - Angola, Gabon, Mauritius, Namibia, South Africa: For each of these respective countries no CPIA data is available. An average has been taken from all bordering countries of which CPIA data is available. This is indicated with *Region Avg.* in the Fact sheets.
 - Tunisia: CPIA Africa scores are for sub-Saharan countries. Therefore, no data is available or regional average can be made for Tunisia.
- **OECD: Trade facilitation indicator :** OECD. (n.d.) *Trade facilitation*. <https://www.oecd.org/trade/topics/trade-facilitation/>