Ghana
eTrade Readiness Assessment

United Nations

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Geneva, 2023

NOTE

Within the UNCTAD Division on Technology and Logistics, the E-Commerce and Digital Economy Branch carries out policy-oriented analytical work on the development implications of information and communications technologies (ICTs), e-commerce and the digital economy. It is responsible for the preparation of the Digital Economy Report as well as thematic studies on ICT for Development.

The Branch promotes international dialogue on issues related to ICTs for development and contributes to building developing countries' capacities to measure the digital economy and to design and implement relevant policies and legal frameworks. It also monitors the global status of e-commerce legislation (UNCTAD Cyberlaw Tracker). Since 2016, the Branch has coordinated a multi-stakeholder initiative entitled eTrade for all (etradeforall.org), which aims to improve the ability of developing countries, particularly least developed countries (LDCs), to use and benefit from e-commerce. The initiative is also behind the UNCTAD eTrade for Women (eT4W) programme, launched in 2019, which aims to promote a more inclusive digital economy, in particular through its network of Advocates. These female digital entrepreneurs are active in all developing regions, and contribute to capacity building, mentoring and awareness-raising activities for more inclusive gender policies.

Reference to companies and their activities should not be construed as an endorsement by UNCTAD of those companies or their activities.

The following symbols have been used in the tables:

- **Two dots (..)** indicate that data are not available or are not separately reported. Rows in tables have been omitted in cases where no data are available for any of the elements in the row.
- **A dash (-)** indicates that the item is equal to zero or its value is negligible.
- **Reference to "dollars" (US$)** means United States of America dollars unless otherwise indicated.
- **Details and percentages** in tables do not necessarily add up to the totals because of rounding.

The exchange rate used when writing the document (April 2023) was 0.086 US$ per Ghanaian cedi.

PREFACE

The eTrade for all initiative, launched at the fourteenth session of the United Nations Conference on Trade and Development (UNCTAD XIV) in July 2016, is a practical example of how to harness the digital economy in support of the 2030 Agenda for Sustainable Development, notably the following Sustainable Development Goals:

- Goal 5: Achieve gender equality and empower all women and girls.
- Goal 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- Goal 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

The initiative seeks to raise awareness, enhance synergies, and increase the scale of existing and new efforts by the development community to strengthen the ability of developing countries to engage in and benefit from e-commerce, by addressing seven relevant policy areas: E-commerce readiness assessment and strategy formulation, ICT infrastructure and services, Trade logistics and trade facilitation, Payment solutions, Legal and regulatory frameworks, E-commerce skills development and Access to financing.

As part of the initiative, UNCTAD works with Governments of developing countries and key stakeholders to improve their digital economy capabilities through the eTrade Readiness Assessments (eT Readies). The eT Readies analyse the digital and e-commerce ecosystems of beneficiary countries and provide policy recommendations based on the challenges and opportunities for e-commerce development identified across the seven policy areas. To operationalize those recommendations, UNCTAD established an Implementation Support Mechanism in 2020. Through the Mechanism, UNCTAD has been increasing in-country coordination support and building national capacities to ensure more efficient and effective implementation of e-commerce policies and initiatives.

The eTrade Readiness Assessment of Ghana is the thirty-fifth such assessment conducted by UNCTAD, and the eleventh within the Economic Community of West African States (ECOWAS) region after eight country assessments –Senegal, Togo, Burkina Faso, Liberia, Mali, Benin, the Niger and Côte d'Ivoire– and two regional assessments, for the West African Economic and Monetary Union (WAEMU) and ECOWAS. These assessments provide recommendations that enable countries to move forward, at both the national and regional levels, in leveraging e-commerce for development. The Ghana eT Ready is a first step by the Government of Ghana in implementing the recommendations from the ECOWAS eTrade Readiness Assessment and the ECOWAS E-commerce Strategy (2023–2027).

I hope that this report will contribute to support the Government of Ghana in its efforts to build a strong and safe e-commerce ecosystem favourable to its consumers and enterprises.

Shamika N. Sirimanne
Director, Division on Technology and Logistics, UNCTAD

ACKNOWLEDGEMENTS

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ABBREVIATIONS

2IPD	Integrated Index for Postal Development
A4AI	Alliance for Affordable Internet
AfCFTA	African Continental Free Trade Area
BCEAO	Banque Centrale des États de l'Afrique de l'Ouest (Central Bank of West African States)
CSA	Cyber Security Authority
D4J	Digitalize for Jobs
DIP	Digital Inclusion Project
ECOWAS	Economic Community of West African States
eT Ready	eTrade Readiness Assessment
GEPP	Ghana E-Payment Portal
GhIPSS	Ghana Interbank Payment and Settlement Systems
GIFEC	Ghana Investment Fund for Electronic Communications
GIX	Ghana Internet eXchange
GRA	Ghana Revenue Authority
GRTP	Ghana Rural Telephony Project
GSM	Global System for Mobile Communications
IATA	International Air Transport Association
ICT	information and communications technology
IFC	International Finance Corporation
IMF	International Monetary Fund
ITC	International Trade Centre
ITES	Information Technology Enabled Services
ITU	International Telecommunication Union
LDC	least developed country
LPI	Logistic Performance Index
MDAs	ministries, departments and agencies
MJ	Ministry of Justice
MOCD	Ministry of Communications and Digitalisation
MOF	Ministry of Finance
MOTI	Ministry of Trade and Industry
NCA	National Communications Authority
NITA	National Information Technology Agency
OECD	Organisation for Economic Co-operation and Development
PAPSS	Pan-African Payment Settlement System
PCSRC	Postal and Courier Services Regulatory Commission
SIM	Subscriber Identity Module
SMEs	small and medium-sized enterprises

TFA	Trade Facilitation Agreement
UNCDF	United Nations Capital Development Fund
UNCITRAL	United Nations Commission on International Trade Law
UNCTAD	United Nations Conference on Trade and Development
UPU	Universal Postal Union
WAEMU	West African Economic and Monetary Union
WCO	World Customs Organization
WTO	World Trade Organization

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EXECUTIVE SUMMARY

The assessment of the readiness of Ghana to engage in e-commerce has revealed both strong potential and interest for the development of the digital economy and e-commerce. Consultations organized by UNCTAD provided an opportunity to initiate discussions between private sector representatives of e commerce and the digital economy, telecommunications operators, and representatives of ministries and agencies in charge of ICT, trade and the digital economy. This has enabled actors central to the e-commerce supply chain to elaborate on the challenges encountered on the path towards digitalization, and present ongoing initiatives by the Government of Ghana – including those under the auspices of the Ministry of Trade and Industry (MOTI), and the Ministry of Communication and Digitalisation (MOCD).

E-commerce readiness assessment and strategy formulation

Ghana has continuously displayed its willingness to promote the development of the digital economy in recent years. A set of programmes and initiatives has been successively launched in the context of Ghana's Digital Agenda (2018)[1] and the Ghana Beyond Aid Charter and Strategy (2019),[2] both with strong support to economic digitalization. MOCD has developed a digital strategy to establish Ghana as a leader in ICT innovation in sub-Saharan Africa by 2023, and a leader in Africa for the digital economy by 2028. Several aspects of the digital economy have been upgraded, from the development and implementation of a legislative and regulatory framework to the objective of developing its broadband infrastructure, including through the promotion of accessibility and use of ICT by fostering national skills and expertise in ICT. To achieve this objective, the Government notably relies on several national structures, including the National Information Technology Agency (NITA), which is the implementation arm of MOCD, and the National Communication Authority (NCA), an independent regulator responsible for setting standards, licensing and regulating communications, promoting the adoption of new technologies and services, and improving the quality of ICT and digital services.

The Government has also implemented a set of public sector digital platforms to digitalize its services – for e-procurement, e-immigration, e-taxation, e-parliament, e-judiciary and the GhanaCard – through the digital identification programme.

At the same time, a strategy dedicated to e-commerce would be important to improve the institutional setting and clarify the leadership of different agencies and directorates and improve monitoring and communication on ongoing actions that build knowledge of potential actors and main stakeholders on e-commerce.

ICT infrastructure and services

Massive investments and efforts have been made by the Government of Ghana, with substantial achievements. Regarding the development of ICT infrastructures and access to the Internet, actions from MOCD, through NITA, have enabled the Internet penetration rate to reach 76 per cent of the Ghanaian population in 2023, according to data from NCA.

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1. Ghana, National Communications Authority, *Our Contributions In 2018 Towards Ghana's Digital Agenda.* Available at https://nca.org.gh/wp-content/uploads/2021/11/Key-NCA-Projects-2018.pdf.

2. Ghana, *Ghana Beyond Aid Charter and Strategy Document.* Available at http://osm.gov.gh/assets/downloads/ghana_beyond_aid_charter.pdf.

Despite connectivity expansion, many people still don't have meaningful access to the Internet, especially at broadband speed and in rural areas, where the digital divide remains wide. This results in the exclusion of people who, for instance, do not have digital IDs or transaction accounts from which to access online public services and financial services.

Trade logistics and trade facilitation

Ghana has made some progress in the area of trade logistics by initiating a digital addressing system, but the system can be further optimized. Weaknesses in the supply chain of logistics and delivery services remain a major challenge for the development of inclusive e-commerce in the country. National postal services have limited resources and postal parcels are not tracked. Meanwhile, private operators dominate the parcel delivery market to compensate for postal deficiencies. Further collaboration is also necessary between postal and customs services to improve coordination and decrease the clearance time for postal parcels.

Regarding trade facilitation, Ghana continues to implement the Trade Facilitation Agreement, and ranks first among ECOWAS countries on the customs dimension of the Logistic Performance Index (LPI). In 2023, Ghana also ratified the African Union Convention on Cross-Border Cooperation.

Payment solutions

Ghana has made substantial progress on financial inclusion. The Bank of Ghana has initiated the 2019–2024 Payment System Strategy (Go Digital). Digitalized payment solutions are increasingly used by the population. The share of Ghanaian adults with formal financial accounts increased to 72 per cent in 2021. The active mobile money account ownership penetration rate is now 89 per cent, according to the Financial Access Survey (International Monetary Fund (IMF), 2022).

Nevertheless, the cost of digital payments remains high for users. There is also limited trust in digital payments and low penetration rates of debit and credit cards, which serve as a deterrent to the uptake of digitalized payments.

Legal and regulatory frameworks

The regulatory framework for e-commerce and the digital economy is in place. Laws include the Electronic Transactions Act 772 (2008), amended by the Electronic Transactions Amendment Act 838 (2012), which provides the regulation of electronic communications and related transactions; the Data Protection Act 843 (2012); and, more recently, the Cyber Security Act 2020 (Act 1038) of Ghana.

Although Ghana has adopted a legal framework for e-commerce, it now needs to be effectively implemented, and the various national actors must be made aware of it. This is important to strengthen consumer protection and build the confidence necessary for users to move into e-commerce. The capacities of the judiciary and law enforcement agencies need to be strengthened. The legal framework also needs to be completed for the business-to-business sector, and some of the laws still need to be updated.

E-commerce skills development

Although training opportunities for digital skills have increased in Ghana, the e-commerce ecosystem needs further support for digital skills development. Ghanaian entrepreneurs are still lacking the digital skills needed on the labour market, highlighting a mismatch of supply and demand. In addition, access to universities, especially when it comes to technological programmes, remains limited.

Access to financing

Finally, support is necessary to expand access to financing for small businesses. Digital start-ups struggle to attract funding, facing limited appetite from commercial banks, which generally require partners or guarantees. This is in addition to the already limited financing by commercial banks in Ghana. Entrepreneurs also often lack the necessary management and financial skills to present a financial plan to potential financing partners and institutions.

The systematic review of the seven pillars at the core of the assessment has highlighted a paradox between the promising projects initiated by the Government and their implementation. The economy of Ghana is far ahead of most other West African countries regarding almost all of the seven policy areas, but a clearer vision and strategy dedicated to e-commerce is needed to seize its potential. Specifically, the lack of a cross-sectional, high-level approach to the development of the digital economy hampers Ghana from taking advantage of the complementarities and shared experiences in this area. A national e-commerce strategy can help to provide a common and shared direction resulting from a holistic vision, to avoid the multiplication of uncoordinated and decentralized sectoral initiatives. Overcoming this structural deficit will also help to build the necessary level of trust and enable the promotion and development of e-commerce.

The challenges reviewed along the seven pillars must not overshadow the strong potential and resources Ghana has to promote and strengthen its digital economy ecosystem, and reach the objectives related to job creation and inclusive and sustainable economic growth. An Action Matrix is proposed, with a set of suggested actions to accelerate policies initiated by the Government and support e-commerce development.

The feedback from public and private representatives during UNCTAD consultations from March to May 2023 provides indications of the degree of maturity of several items, in line with the development of e-commerce. It specifically highlights the need to strengthen the following aspects, for which less than 50 per cent of the respondents assessed them to have a high degree of maturity (mature or very mature): high level of political support for e-commerce and digital strategy (49 per cent), coordination between institutions (48 per cent), trade logistics and cross-border facilitation (49 per cent), legal framework for e-commerce (47 per cent), and access to finance (30 per cent) (figure I). More positive assessments were given with regard to digital payments, general understanding of e-commerce and the availability of national service providers.

Figure I: Needs and opportunities for e-commerce development in Ghana

(public and private sectors, 132 answers)

Please evaluate the following items related to e-commerce development based on their maturity

	Very mature	Mature	Neutral	Not mature	No opinion
High-level political support	17%	32%	29%	17%	
Coordination between institutions	17%	31%	28%	19%	
General understanding of e-commerce	26%	31%	28%	12%	
Internet connectivity and connection costs	21%	31%	24%	22%	
Trade logistics and cross-border facilitation	18%	27%	28%	24%	
Legal framework for e-commerce	15%	32%	29%	20%	
Digital payment for e-commerce	25%	40%	21%	10%	
Computer skills among entrepreneurs	19%	32%	30%	15%	
Availability of national service providers	25%	33%	25%	13%	
Access to finance	8%	22%	32%	37%	

■ Very mature　■ Mature　■ Neutral　■ Not mature　■ No opinion

Source: UNCTAD (2023) Ghana eTrade Readiness Assessment Online Survey.

SUMMARY OF KEY FINDINGS AND RECOMMENDATIONS

MAIN FINDINGS	MAIN RECOMMENDATIONS
E-commerce readiness assessment and strategy formulation	
• The development plan for the digital economy is implemented through several programmes and initiatives of Ghana's Digital Agenda (2018) or of the "Ghana Beyond Aid" Charter and Strategy (2019). • MOCD has developed a digital strategy to establish Ghana as a leader in ICT innovation in sub Saharan Africa by 2023, and a leader in Africa for the digital economy by 2028. • A holistic national e-commerce strategy is missing, leading not only to weak leadership and coordination between the different institutions related to ICT, digital economy or e-commerce, but also to poor visibility on ongoing actions. • The governance framework is mostly ICT and technology-oriented, reflecting the absence of a national strategy dedicated to e-commerce. • There is also a strong need for national statistics on e-commerce.	• Adopt a national strategy for the development of e-commerce and e commerce statistics, including in a gender-disaggregated manner. • Take stock of the actions undertaken by the Government and disseminate to the public the progress made and impact of the actions in progress. • Put in place a public–private consultation framework to accompany the development of e-commerce; sensitize and convince potential actors of the benefits of e commerce for consumers, producers and service providers; and reinforce the coordination of activities of the ministries and their actions due to the transversal character of e-commerce.
ICT infrastructure and services	
• The Internet penetration rate in Ghana is 76 per cent of the population in 2023, according to data from telecommunications operators. • Improving infrastructure and Internet access for the population, including addressing cost, is still a priority given the objective of universality, in a context where the digital divide between urban and rural areas remains strong, notably regarding the access to electricity.	• Map priority needs in terms of backbone and mileage expansion, including the needs for access to electricity. • Identify a partnership model for the development of the network if the size of the markets does not allow the private operators to reach the break-even point, with public market allocations adapted to the objectives of universal public service. • Encourage the emergence of visible, representative and autonomous consumer and e-commerce associations, to promote greater transparency of costs and responsibilities in the quality of the Internet network.

MAIN FINDINGS	MAIN RECOMMENDATIONS
Trade logistics and trade facilitation	
• Logistical and trade facilitation dimensions, whether national or international, constitute a major difficulty for the development of e-commerce in Ghana, to provide the necessary level of trust on delivery services, which are crucial for e-commerce. • Small operators are massively resorting to private operators or even to their own services for parcel deliveries, which doesn't enable sound development of e commerce. • A digital addressing system has been implemented (GhanaPostGPS) with mitigated feedback. • International postal exchanges suffer from insufficient collaboration between postal and customs services.	• Initiate a review with the Postal and Courier Services Regulatory Commission (PCSRC) for a holistic policy and regulatory framework for postal and logistics services relevant to e-commerce and the digital economy. • Audit and review the experience of the GhanaPostGPS system to correct its limitations and guarantee a generalized digital addressing system. • Set a network of relay stations in the bus stations and/or underserved locations, and search for alternative solutions where GhanaPostGPS doesn't function. • Initiate discussions between Ghana Post and the Ghana Revenue Authority (customs) to enhance coordination and implement process improvements to decrease clearance time for postal parcels. • Investigate how paperless trade processing solutions as proposed by UPU through the Customs Declaration System module could be integrated with the Customs Management System of Ghana.
Payment solutions	
• The dematerialization of payments is still limited today in Ghana, despite the strong development of mobile money and that of the banking penetration rate, as well as the full interoperability between mobile money providers and banks introduced by the Bank of Ghana in December 2018. • The high transaction costs of digital payments, as well as trust issues, are also still preventing the generalization of the use of digitalized payments. The penetration rate of debit/credit cards is still limited (29 per cent), even if this region is outstanding in comparison to other countries in the region. • E-commerce preferred payment solutions henceforth remain "cash on delivery".	• Encourage commercial banks to promote the use of debit cards to raise the debit cards penetration rate (29 per cent, IMF Financial Access Survey, 2022) to the bank deposit accounts penetration rate (72 per cent, IMF Financial Access Survey, 2022). • Inform and raise awareness of e-commerce users, both consumers and sellers, on the benefits of online payments and more generally on the advantages to adhere to e commerce through electronic marketplaces.

MAIN FINDINGS	MAIN RECOMMENDATIONS
Legal and regulatory frameworks	
• The legal and regulatory frameworks governing both traditional trade and e commerce are in place but should be globally updated. These laws, which are based on the ECOWAS regulatory framework and are intended to reassure the whole supply chain of e-commerce, do not seem to be strictly enforced. • The institutional framework for consumer protection, whether in ICT or online commerce in general, is poorly structured and not very visible. • The Electronic Transaction Act of Ghana is based on the provision of the UNCITRAL Model Law on Electronic Commerce, and the United Nations Convention on the Use of Electronic Communications in International Contracts.	• Strengthen the capacities and skills of the judiciary in the field of e-commerce for the proper enforcement of laws. • Ensure that the authorizations provided to e commerce sites for the processing of personal data are effectively posted on these sites. • Disseminate and promote the laws in order to reassure and convince potential users of e-commerce with the implementation of sanctions for operators who do not comply with the regulations. • Structure the institution in charge of consumer protection, whether in the field of ICT or online commerce, to help strengthen the confidence of actors in the digital economy. • Amend the Electronic Transaction Act to take into account the provisions of the UNCITRAL Model Law on Electronic Transferable Records, to legitimize the use of electronic transferable records, domestically and across borders. • Accede to the United Nations Convention on the Use of Electronic Communications in International Contracts to provide a clear and modern legal rule for cross-border digital trade.
E-commerce skills development	
• Programmes and training exist, both public and private, in the ICT and digital economy sectors. • However, the digital ecosystem seems to have difficulties in finding locally the skills necessary for its development, indicating a mismatch between the newly proposed training courses and market needs.	• Map public organizations and private companies and digital markets' needs to detail the mismatch between the skills required, the existing skills and the training offered. • Accompany this mapping with certification and accreditation of training courses, in order to provide visibility to the beneficiaries of these courses and to potential employers. • Systematically monitor the actions of incubators and accelerators, and propose an accreditation system on them.
Access to financing	

• Technology start-ups face two major challenges:
  » Firstly, they generally do not have access to direct financing from banks, which require guarantees that they cannot provide. As in many other countries, they usually resort to equity financing.
  » Secondly, commercial banks' financing to the economy is specifically limited in Ghana, with very low loan/deposit ratios, even compared with neighbouring countries; and, moreover, interest rates are very high.
• The development of skills is also essential for project management and business management in order to attract investors.
	• Set up targeted guarantee funds.
	• Call on technical and financial partners for financing programmes or establishing guarantee funds for technology start-ups.
	• Communicate and disseminate opportunities when special funds or finance are offered.

METHODOLOGY

The eTrade Readiness Assessment of Ghana aims at identifying the main barriers and opportunities for e-commerce development in the seven policy areas of eTrade for all, by providing a detailed diagnostic of the digital ecosystem, and identifying key policy actions for which support can be mobilized.

The information provided in this report is based on qualitative and quantitative data collected from desk research, responses from the three online surveys (public, private and consumer), the results of the national multi-stakeholder and bilateral consultations, and specific contributions made by eTrade for all and development partners.

UNCTAD has developed a five-phase methodology for the project in order to (a) ensure a high level of participation and engagement of key stakeholders in the overall assessment process, (b) raise awareness of the opportunities offered by e-commerce (through capacity-building and knowledge sharing), (c) strengthen the public–private sector dialogue and enhance inter-ministerial coordination and policy coherence in the field of e-commerce, and (d) mobilize support from development partners to accelerate the country's digital transformation.

Phase 1. Initial consultations

Initial consultations were conducted with the Government of Ghana and the United Nations Resident Coordinator's Office to identify key stakeholders from the public and private sector, and scope priorities of the assessment. Development partners were informed of the project.

Phase 2. Institutional setting and mapping

This phase included the establishment of a national steering committee, "Ghana's National Steering Committee on E-commerce and Digital Trade", composed of focal points from relevant ministries and representatives of the private sector. It also included an inception mission, which kicked off the assessment; informed various stakeholders about the scope, objectives and timelines of the project; and helped inform national consultations. The mission also served to consolidate the stakeholders' mapping exercise.

Phase 3. Data collection

This phase included:

- Desk review: The phase enabled the conduct of a preliminary analysis through the collection and review of documentation, statistics and qualitative insights from various sources within the eTrade for all initiative, compiled by UNCTAD.
- Online eT Ready surveys: Three questionnaires (for the public sector, private sector and consumers) were adapted to the national context and disseminated online from 17 March to 25 April 2023. A total of 64 institutions from the public sector, 104 companies from the private sector and 160 responses from consumers were collected and analysed for the assessment.
- National multi-stakeholder consultations: National multi-stakeholder consultations were organized in Accra, from 15 to 17 March 2023. These consultations included a series of bilateral meetings, interviews and a multi-stakeholder consultative workshop. These consultations were an opportunity

for representatives from both the public and private sectors (including academia, civil society and development partners in Ghana) to express their needs and share information on the state of relevant ongoing e-commerce-related priorities and actions.

Phase 4. Report drafting

The first draft of the report covering the seven key policy areas and the eT Ready Action Matrix went through an internal UNCTAD review process, and a peer review process by technical partners, national experts and eTrade for all partners.

Phase 5. Report finalization and dissemination

The final report and Action Matrix were then presented to national stakeholders and validated by Ghana's National Steering Committee on E-commerce and Digital Trade. The national launch of the report included a high-level policy dialogue around e-commerce, and a donor round table to mobilize support for policy implementation.

FINDINGS UNDER THE SEVEN ETRADE FOR ALL POLICY AREAS

1. E-COMMERCE READINESS ASSESSMENT AND STRATEGY FORMULATION

The Government of Ghana has launched programmes to develop ICT and the digital economy in the context of Ghana's Digital Agenda (2018) and the "Ghana Beyond Aid" initiative (2019). These initiatives and programmes share a strong focus towards the digital economy, and have enabled actions for the development of digital services, whether infrastructure, definition of the regulatory framework or deployment of online services. These actions are by nature beneficial to e-commerce. There is, however, no national strategy for e-commerce, which is reflected at the institutional level, and does not allow for effective coordination among all the institutions directly or indirectly linked to one of the components of this trade.

1.1. Information and communications technologies and e-commerce national policies

There is currently no national strategy or policy dedicated to the development of e-commerce. The promotion of ICT to foster a digital economy has been constantly part of the national strategy of the Government of Ghana for the last 20 years:

- The Integrated ICT for Accelerated Development programme indeed expressed the willingness to promote public and private investment in various modes of infrastructures to support the development agenda of Ghana.
- The Ghana e-Transform Project (2013) was initiated to improve the efficiency and coverage of government service delivery using ICTs through (a) an improved environment for electronic government and business; (b) support for upgrading the national identification system and online verification services, which will provide support to develop a robust national identification system, based on international standards, to help prepare Ghana support a modern e-commerce industry and improved e-government services, and alleviate poverty; (c) scale up applications to improve service delivery in priority sectors to support the use of ICT to improve quality and reach of services in the health and education sectors.
- Ghana's Digital Agenda (2018) has set a strong focus on the support to economic digitalization through the responsibility of the National Communication Authority within the "Ghana Beyond Aid" Charter and Strategy (2019). MOCD has developed a digital strategy to establish Ghana as a leader in ICT innovation in sub-Saharan Africa by 2023, and a leader in Africa of the digital economy by 2028.
- Go Digital: The Payment System Strategy 2019–2024 (Bank of Ghana) is designed to foster efficient payments, improve financial inclusion and enhance financial innovations.
- The rural telephony and digital inclusion project aims at providing connectivity to 3.4 million citizens in rural communities. The Ghana Rural Telephony Project and Digital Inclusion Project (GRTP and DIP) are designed to extend connectivity to 2,016 unserved communities identified across the country, using the Ghana Investment Fund for Electronic Communications (GIFEC) as the implementing agency.
- Ghana is a member of the Smart Africa Alliance through its adhesion to the Smart Africa Manifesto.

1.2. National coordination and governance frameworks

The governance framework is mostly ICT- and technology-oriented, reflecting the absence of a national strategy dedicated to e-commerce.

The organization is headed by MOCD, and is in charge of the development of reliable and affordable digital infrastructure and service, as well as of the development policy and regulation of ICT in Ghana. MOCD is supported by an agency and an authority:

- NITA, established in 2008, is the implementation arm of MOCD, specifically in charge of the implementation of digital government infrastructures, the expansion of connectivity to the municipalities and districts, and of building up a Tier 3 data centre to host all government applications. The object of the agency is to regulate the provision of ICT, ensure quality ICT and promote standards of efficiency. NITA exists to create an enabling environment for effective deployment and use of ICT by all sectors, through the implementation of sound policies and regulatory frameworks. As of May 2023, 1,499 ministries, departments and agencies (MDAs), metropolitan, municipal and district assemblies and State-owned enterprises have been onboarded onto the Ghana.gov platform, according to NITA. The Ghana.gov citizen's app, now the official government app for all residents and citizens of Ghana, also offers a seamless connection to official public notifications from various government bodies and institutions, job opportunities spanning both the public and private sectors, and access to all government services and eligible subsidies.
- NCA, created in 2003 in the context of the Integrated ICT for Accelerated Development, is an independent regulator responsible for setting standards, licensing and regulating communications. It is also in charge of promoting the adoption of new technologies and services, with an improved quality of ICT and digital services.
- Finally, GIFEC is in charge of providing universal access to electronic communications, following the Electronic Communications Act of 2008.

Table 1: Structures in charge of the preparation and implementation of national digital orientations and strategy

Structure	Attributions
MOCD	• Development of reliable and affordable digital infrastructure and services • Development policy and regulation of ICT in Ghana.
NITA, 2008	• ICT policy implementation arm of the Ministry of Communication and digitalizationMOCD. • Implementation of several digital government infrastructures. • In charge of providing the connectivity to Municipal and District Assemblies (municipal and district assembliesMDAs) across the country. • Development of the Tier 3 data centre to host all government applications.
NCA, 2003	• Independent regulator responsible for setting standards, licensing and regulating communications services (wire, cable, radio, television and satellite). • Promotion of the adoption of new technologies and services. • Influential to improve the quality of ICT and services.
GIFEC	• Provide universal service and access to underserved and rural communities, in line with the Electronic Communications Act (2008, Act 775)

Source: UNCTAD (2023) Ghana eT Readiness Assessment.

Respondents to the UNCTAD survey have provided a mitigated opinion regarding the maturity degree of digital economy governance, with barely 50 per cent of respondents acknowledging some positive degree of maturity (mature or very mature) regarding high-level political support and coordination between institutions. Note that this critical vision reflects a high level of exigence and a strong understanding of the importance of the digital economy and e-commerce (see figure II (II.a and II.b)).

More generally, very few dimensions are considered as very mature. The highest degree of maturity for public respondents is for the general understanding of e-commerce (21 per cent very mature), which also gets 30 per cent of the private respondents.

More than 60 per cent of respondents have acknowledged some degree of maturity (mature or very mature) regarding the digital payment. While this promising statistic might be overstated, as respondents are specifically tech-oriented, this illustrates the efforts and improvements of the Ghanaian economy towards the digital economy.

Figure II: Degree of maturity for several dimensions of the digital economy

II.a: Public sector respondents (63 answers)

Please evaluate the following items related to e-commerce development based on their maturity:
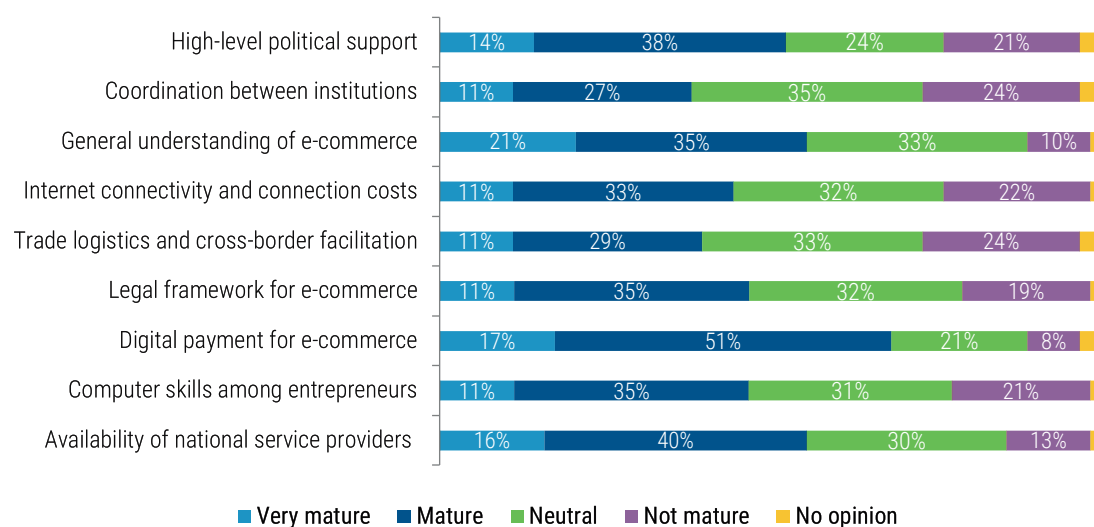
II.b: Private sector respondents (70 answers)

Please evaluate the following items related to e-commerce development based on their maturity:

	Very mature	Mature	Neutral	Not mature	No opinion
High-level political support	19%	26%	33%	14%	
Coordination between institutions	23%	34%	21%	14%	
General understanding of e-commerce	30%	28%	23%	14%	
Internet connectivity and connection costs	30%	28%	16%	22%	
Trade logistics and cross-border facilitation	24%	25%	24%	24%	
Legal framework for e-commerce	18%	28%	27%	21%	
Digital payment for e-commerce	33%	30%	21%	12%	
Computer skills among entrepreneurs	27%	28%	30%	9%	
Availability of national service providers	33%	27%	20%	14%	
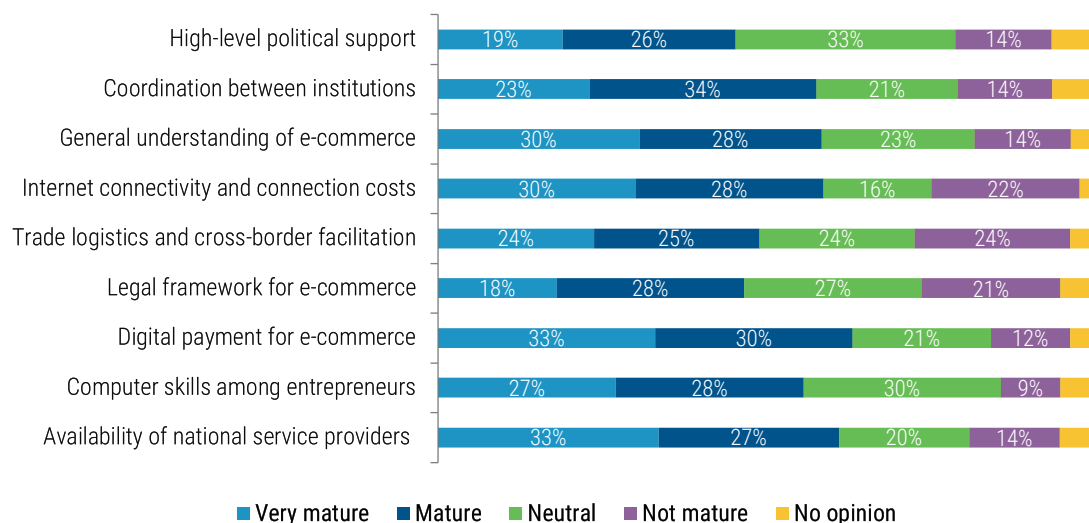
Source: UNCTAD (2023) Ghana eTrade Readiness Assessment Online Survey.

1.3. Public–private dialogue regarding e-commerce

Consultations in Accra during the assessment have evidenced the need to strengthen communications between the administration and the private sector, not only regarding ongoing actions being implemented by the Government through its digital strategy, but also about initiatives destined towards the private sector or regarding private sector needs.

Specifically, only 32.8 per cent of public sector respondents (out of 64) were aware of the existence of a platform, technical committee or other institutional coordination mechanism involved in e commerce policy development. Moreover, references provided by those respondents revealed a lack of understanding of what such an institutional coordination mechanism was, some of them quoting the "Domestic Tax Revenue Division", "Jumia", "GIZ" or "AfCFTA".

1.4. ICT development indexes and e-government

Ghanaian performance regarding e-commerce and ICT make Ghana a frontrunner in the ECOWAS region, in line with the government strategy for digital economy and efforts to promote an e government approach.

The E-Government Development Index combines three dimensions: ICT development, online services and human capital. Figure III displays values for Ghana and also average values for African countries and for the world. Finally, figures for ECOWAS countries as well as for South Africa, which is leading Africa, are provided for international comparison.

Ghana ranks first among ECOWAS member States and 101st globally, with an index close to the world average (see figure III.a). It is far above the average index for African countries and LDCs, as well as the non-LDC ECOWAS States of Cabo Verde, Côte d'Ivoire and Nigeria.

Specifically, Ghana is leading ECOWAS countries on ICT infrastructures with an ICT infrastructure index beyond the world average level. While still lower than that of South Africa, which ranks first in Africa, this reflects ongoing efforts as part of the digital strategy of the Government.

Regarding online services and human capital indexes (III.b and III.d), Ghana ranks second within ECOWAS, but also very close to the world average level of development, far above the African countries' average.

Ghana also leads the e-participation index for 2022, as a result of mechanisms implemented by the Government to use online tools to favour interactions both between the Government and its people, and among the people, for the benefit of all, through e-information. Such mechanisms include notably, e-consultations, engaging citizens in contributions to and deliberation on public policies and services, e-decision-making by empowering citizens through co-design of policy option and co-production of service components and delivery modalities. Ghana is not only the leader for ECOWAS countries, but also far beyond African countries' average value, and is at the world average value.

Figure III: E-government indicators: Ghana, ECOWAS and the rest of the world (2022)[3]

III.a: E-Government Development Index (EGDI) (2022)
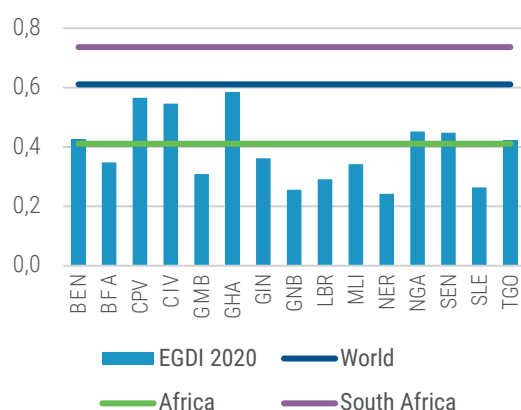
III.b: Online services
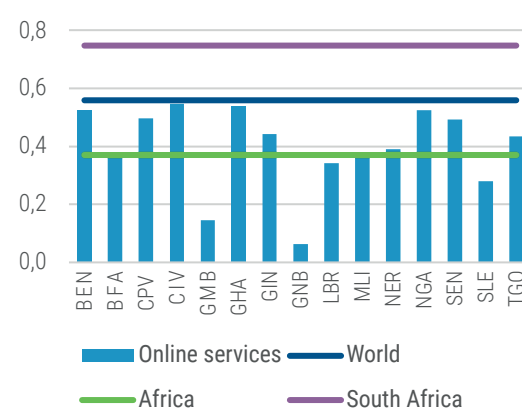
III.c: ICT infrastructure
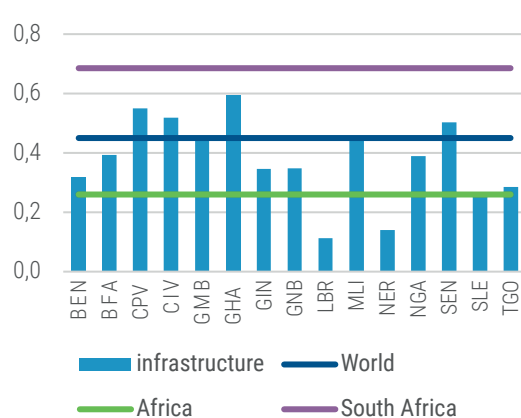
III.d: Human capital

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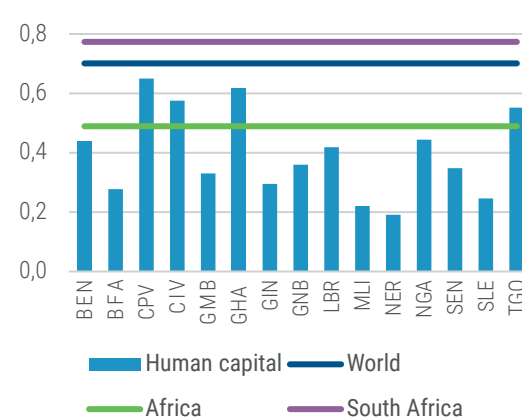
3. ISO 3166-1 alpha-3 codes are **three-letter country codes defined in ISO 3166-1**, part of the ISO 3166 standard published by the International Organization for Standardization (ISO), to represent countries, dependent territories, and special areas of geographical interest. See annex 2 for the three-letter international standard for country codes (ISO 3166).

III.e: E-Participation index (2022)
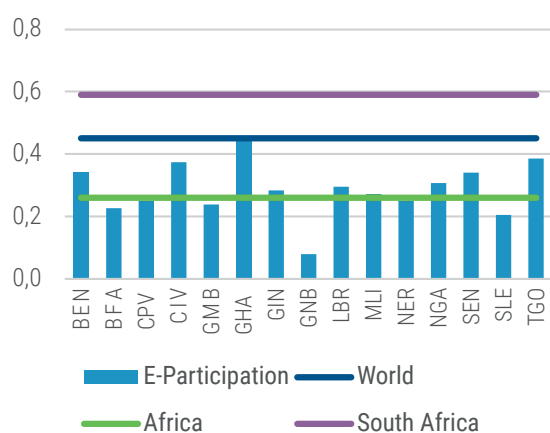
Source: United Nations E-government Survey (2022).

Substantial improvements have been achieved regarding the implementation of an e-government. The following achievements and ongoing actions present the improvements towards an online administration (e-government), as part of the e-Transform Project, which was part of Ghana's Digital Agenda (2018):

• The online Ghana E-Payment Portal (GEPP) has been introduced for electronic payments for government services, including online payment of taxes.
• Government services have been digitized.
• An electronic national identity register – the National ID Card or GhanaCard (part of the e Transform Project) – has been introduced. GhanaCard also includes an e-passport, which contains biometric information that can be used to authenticate the identity of travellers. In March 2023, 17.4 million registrations had been counted, according to the National Identification Authority's statistics.
• The National Digital Property Addressing System from the Land Use and Spatial Planning Authority identifies and provides unique addresses for all properties in Ghana.
• Paperless processes are also being implemented regarding customs clearance, as part of Ghana's Digital Agenda (2018), through the Ghanaian customs management system Ghana Community Network and the adoption of a single window.
• A total of 19 pharmacies are currently enrolled on the digital e-pharmacy platform, mostly from Greater Accra and the Central Region.

1.5. E-commerce activities and statistics availability

While e-commerce is growing in Ghana, with adoption increasing notably since the start of the coronavirus disease (COVID-19) pandemic – as evidenced by the development of local platforms such as Hubtel, Jumia, Plendify, Jiji, Uber Eats and Bolt Food, in addition to international platforms such as Amazon or Alibaba– it is difficult to obtain a clear overview of the e-commerce market and potential, due to a lack of reliable statistics. The consumer survey completed through the national consultations, however, has evidenced the four sectors mainly benefitting from such a development: of the 113 respondents who reported buying products online, 60.2 per cent purchased food products, 61.1 per cent textile and clothing, 46 per cent beauty and personal care, and 43.4 per cent jewellery and accessories.

The National Communications Authority and Ghana Statistical Services reported in 2020 that 9.6 per cent of its surveyed individuals five years of age and older used the Internet to perform "electronic commerce, trade and transactions". NCA also provides data regarding ICT and the access rate to the

Internet as a whole, including mobile data, but there are very few data specifically on e commerce. Statistics on e-commerce should also be collected from enterprise surveys whenever possible – for example, on enterprises using the Internet to sell or purchase. Such information would be important to initiate and pursue the development of the e-commerce market by enabling the mapping of actors, identifying needs and disseminating opportunities for the different sectors. Such data should ideally also be collected using internationally agreed methods to allow for data comparison between countries, and benchmarking against peers. UNCTAD provides guidance on how to produce core indicators on e-commerce and the digital economy (see box 1).

Box 1: Measuring the digital economy

Every two years, UNCTAD compiles statistics from national statistical offices in developing countries regarding their latest available data on ICT use by businesses (most recently in 2021, with the next compilation to be launched in August 2023). In Africa, only Mauritius and Tunisia provided data in the 2021 collection.

In fact, the digital economy tables in the UNCTAD statistical portal[1] show that few African countries regularly report on ICT use by businesses to UNCTAD. In addition, UNCTAD statistics on the ICT producing sector, bilateral trade flows by ICT goods categories, share of ICT goods as a percentage of total trade, and international trade in ICT and digitally deliverable services show that the share of digitally deliverable services in African countries' total services exports remains well below that of countries in other regions of the world.

The limited availability of timely, robust, and comparable statistics makes it difficult for policymakers and trade negotiators in Africa to establish benchmarks and monitor progress in their transformation to a digital economy and engagement in digital trade, to guide digital economy policy that works for development. In order to build its capacity to produce national official statistics on e-commerce and the digital economy, Ghana may wish to access UNCTAD resources in this area.

For example, UNCTAD delivers training for national statistical offices based on the UNCTAD *Manual for the Production of Statistics on the Digital Economy 2020*[2] and the Organisation for Economic Co operation and Development (OECD)–World Trade Organization (WTO)–IMF–UNCTAD Handbook on Measuring Digital Trade (forthcoming). The UNCTAD Manual focuses on core indicators of ICT use by businesses – including e-commerce, value added and employment in the ICT sector – and considers other statistical quality issues such as sampling, survey design and dissemination. The OECD–WTO–IMF–UNCTAD Handbook focuses on measuring trade in goods and services that are digitally ordered/digitally delivered in a way that is internationally comparable, and considers the role of digital intermediation platforms.

In addition, UNCTAD is developing statistical guidelines for measuring the value of e-commerce sales and purchases,[3] and every year convenes a Working Group on Measuring E-commerce and the Digital Economy[4] (in 2022 chaired by Kenya) that brings together international and regional experts and statisticians to discuss the latest developments in digital economy statistics.

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1. https://unctadstat.unctad.org/
2. *Manual for the Production of Statistics on the Digital Economy 2020,* Revised Edition, United Nations publication, Sales No. E.21. II.D.15. Available at https://unctad.org/publication/manual-production-statistics-digital-economy-2020.
3. Measuring the value of E-commerce, United Nations publication, Sales No. E.23.II.D.5. Available at https://unctad.org/ publication/measuring-value-e-commerce.
4. Available at https://unctad.org/meetings-search?f%5B0%5D=product%3A340.

1.6. Women and e-commerce in Ghana

Women in Ghana play a critical role in the economy, accounting for 50.7 per cent of the population.[4] Therefore, it is essential to understand the level of women's participation in e-commerce in Ghana as business owners, workers and consumers. Specifically considering three gender domains through the lens of e-commerce, (i) women capacity and skills, (ii) women's access to resources and opportunities, and (iii) security and online vulnerability.[5]

Capacity and skills

Upskilling women through targeted ICT and e-commerce training programmes could open new pathways for future employment and business growth in Ghana.

More than 50 per cent of public officials who responded to the Ghana eT Readiness Assessment Online Survey indicated that they were unaware of any trainings specifically targeting women on ICT or e-commerce in Ghana (figure IV).

Figure IV: Knowledge of ICT or e-commerce training programmes targeting women (public sector)

Are you aware of any training specifically targeting women on ICT or e-commerce in your country?
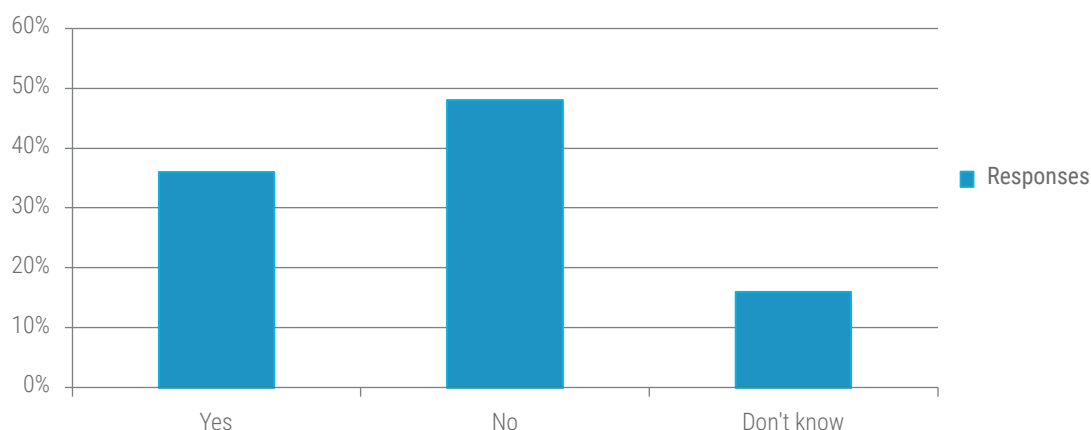
Source: UNCTAD (2023) Ghana eTrade Readiness Assessment Online Survey.

Given the rapid adoption of digital tools, and fast advancement in the development of technology, training programmes to upskill women in the economy could open new pathways for future employment opportunities and/or business sustainability for women-led or managed enterprises in Ghana. As of 2021, women made up 47.9 per cent of the labour force of Ghana,[6] and increasingly account for a larger proportion of the population (figure V). The entrepreneurship rate for women in Ghana is also on the increase, with over 25 per cent of local businesses being women-owned.[7] This is comparable to the results from the Ghana eTrade Readiness Needs Assessment Survey, where 50 per cent of private sector respondents noted that women had at least a 51 per cent stake/ownership in their company.

4. Ghana Statistical Services, 2021 Population and Housing Census, https://census2020.statsghana.gov.gh/

5. Y. Ismail and H. Hirani. Addressing the Gender Dimension of E-commerce: Towards a Holistic Analytical and Policy Framework (Geneva, CUTS International, 2021).

6. World Bank, DataBank (2021). Available at https://databank.worldbank.org/.

7. The Mastercard Index of Women Entrepreneurs, 2022.

Figure V: Women's participation in the labour force of Ghana

Source: International Labour Organization data.

An important step in this direction is Ghana Enterprises Agency's "Women SME Innovation Programme – Digitalize for Jobs (D4J)", a capacity-building programme that supports women-owned/led small and medium-sized enterprises (SMEs) in digitalization of business operation. The programme targets 400 women-owned SMEs and recognizes their importance to the Ghanaian economy and the opportunities for job creation. According to the Ghana Enterprises Agency, the project aims to:[8]

- Provide capacity-building to women-owned/led SMEs on different aspects of digitalization and how their companies can grow from its use.
- Increase SMEs' process efficiency and competitiveness by providing access to knowledge, digital tools and expertise in the field of digitalization and innovation management challenges.
- Ensure that the women-owned/led SMEs are creating jobs after the programme.
- Create a digitalized business environment conducive for rapid growth of SMEs in Ghana.

Access to resources

Results from the Ghana eT Ready Survey showed that over 60 per cent of private and public sector respondents were not aware of any programmes to promote women's involvement in e-commerce in Ghana (figure VI).

For women entrepreneurs to fully benefit from the digital economy and e-commerce, they will require e-commerce-related resources which include but are not limited to access to financing, e commerce skills and e-commerce support services.

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8.   Ghana Enterprises Agency, 2022. Available at https://gea.gov.gh/.

Figure VI: Knowledge of programmes targeting women's involvement in e-commerce

Are you aware of any programmes to promote women's involvement in e-commerce in your country?

■ Public sector   ■ Private sector
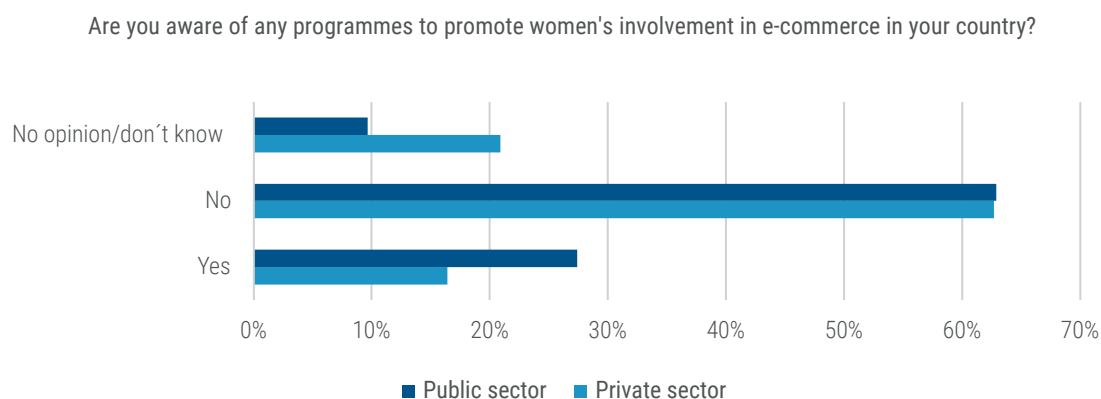
Source: UNCTAD (2023) Ghana eTrade Readiness Assessment Online Survey.

Experience from other African countries shows that mentorship programmes, incubation programmes, peer-to-peer learning services and business advice/consulting that focus on developing and integrating enabling e-commerce tools and services could be instrumental in supporting women-led SMEs in adopting e-commerce.

For more women-led businesses and/or entrepreneurs to adopt and benefit from e-commerce, the gap in access to available resources needs to be addressed. Reasons behind poor access to resources often include social biases against women, low business literacy among women and women-led SMEs, and the high cost of adopting new technology (ICT services, in the form of either know-how or products).

Access to resources also connotes the need to effectively communicate and share information on available programmes that promote women's involvement in e-commerce within the public and private sectors. More women and women-led businesses need to know how and where to access relevant information on these programmes. Strategic entry points include closer collaboration between the public sector and women's associations in the development programmes, and dissemination of information.

Security and online vulnerability

Security in this context refers to factors that could affect women's full adoption and meaningful use of e-commerce. These factors include perception of trust, privacy and data protection, safe online engagement on e-commerce platforms, and access to information on how to safely navigate and use online services and seek redress when incidents occur.[9] Certain online risks are amplified for women, making them less likely to use e-commerce. Some of these include susceptibility to online fraud due to illiteracy and/or language barriers; privacy concerns, specifically around medical records, private communications and personal location; and concerns about personal safety and online harassment.

Two pieces of legislation in Ghana – the Electronic Transactions Act (Act. No. 772) 2008, and the Data Protection Act (Act. No. 843) 2012 – broadly cover provisions that secure the rights of online users in the conduct of e-commerce, and may be used to secure rights and boost e-commerce trust for women.

Furthermore, the National Gender Policy 2015 of Ghana could be an enabling framework to act on ensuring that women using e-commerce platforms can safely engage, either as consumers or

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9. World Wide Web Foundation, "Women's Rights Online: Closing the digital gender gap for a more equal world", 12 October 2020.

businesses. The Gender Policy of Ghana aims to "mainstream gender equality and women's empowerment concerns into the national development process in order to improve the social, legal, civic, political, economic and cultural conditions of the people of Ghana; particularly women and men, boys and girls in an appreciable manner and as required by national and international frameworks".[10] The policy also seeks to address bottlenecks creating gender gaps in access to science and technology, digital knowledge and skills, thriving to establish a digital knowledge-based society that is inclusive of women's needs and strategic interests.

Opportunities

E-commerce has the potential to create jobs for women and improve their access to economic opportunities, as well as support business resilience for women entrepreneurs. For Ghana to take full advantage of these opportunities, there is space to build the capacity of women as workers, consumers and entrepreneurs; facilitate and communicate on accessible e-commerce relevant resources for women; and safeguard online privacy for women, including those who may be more vulnerable to online risks.

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10. Ghana National Gender Policy, "Mainstreaming Gender Equality and Women's Empowerment into Ghana's Development Efforts", 2015.

2. ICT INFRASTRUCTURE AND SERVICES

The telecommunications market in Ghana is mainly split between four operators that are licensed for mobile phone and Internet services, representing the bulk of the market. Mobile telephony has a penetration rate of over 130 per cent, and mobile Internet had a penetration rate of 72 per cent by the end of 2022. Internet access in Ghana relies mostly on mobile Internet, with fixed Internet connections remaining extremely marginal. Beyond the overall Internet penetration rate, it is essential to qualify the reliability and quality of connections, between 4G type broadband service (limited to 10.4 per cent by the end of 2021, according to the most recent data from NCA) and simple 2G type messaging service, as e-commerce by nature requires reliable connections allowing for dynamic content necessary for online transactions. Cost is also a consideration, while relatively more affordable than in the rest of ECOWAS countries.

2.1. Access to international submarine cables in Ghana

Ghana is connected to the international network through five international submarine cables.

- Africa Coast to Europe (ACE): 17,000 km long, it is managed by a consortium of 20 members. Several ECOWAS countries now rely exclusively on this cable for their access to the Internet (the Gambia, Guinea, Liberia and Mali, for example).
- Globacom-1 (GLO1): 9,800 km long, the cable is owned by the Nigerian operator Globacom, connecting Nigeria to the United Kingdom of Great Britain and Northern Ireland.
- Main One: 7,000 km long, it is the first submarine cable to fully belong to a private company along the West African coast, from Portugal to South Africa.
- MTN-West African Cable System (WACS): 14,530 km long, connecting South Africa to the United Kingdom, it has 14 terminals in Africa and 2 in Europe.
- Vodafone–South Africa Transit (SAT3)/West Africa Submarine Cable (WASC): 14,000 km long, this is part of a group of 37 operators.

The connexion to a sixth international cable is part of an initiated project called "2Africa", with a 37,000 km submarine cable by a consortium of multinationals (including Facebook) that will circumnavigate Africa and should be operational in 2024.

2.2. Telecom market and ICT market in Ghana

Mobile network

Mobile network penetration is strong. Mobile voice subscriptions represented 126 per cent of the population by the end of 2022. Internet mobile is the main means to access the Internet: the penetration rate of Internet mobile was 72 per cent by the end of 2022.

Four service providers are licensed by NCA: AirtelTigo, Glo, MTN and Vodafone, which are sharing the mobile market, for both voice subscription and access to the Internet mobile.

Note that, while a higher penetration rate is usually promising as reflecting a high demand for mobile telecommunications, a rate higher than 100 per cent might raise concern about quality of services,

as it reflects the need for users to accumulate alternative operators to ensure full access, despite the shortfalls of each operator.

Broadband wireless access and fixed network

Broadband wireless access and fixed network remain very limited, as in the rest of the region, with respectively 1.04 per cent and 0.12 per cent access to fixed network and broadband wireless access.

There are five broadband wireless access operators in Ghana: BLU Telecommunications, Broadband Home (BBH), Busy Internet, Surfline and Telesol, although Surfline controls 94 per cent of the broadband wireless market.

Three operators are on the fixed network segment: Vodafone (72.9 per cent), MTN (26.4 per cent) and AirtelTigo (0.7 per cent).

Figure VII: Telecommunications market: phone and Internet providers (2022)

VII.a: Fixed phone
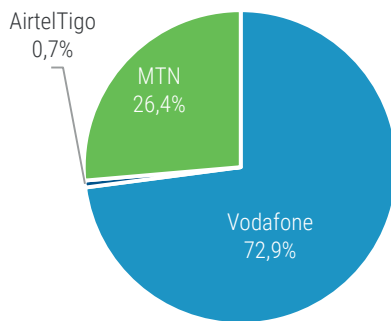
VII.b: Mobile phone
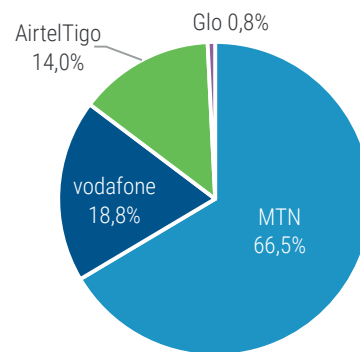
VII.c: Broadband wireless
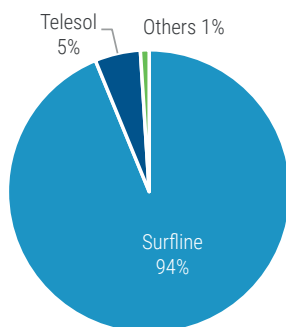
VII.d: Mobile Internet
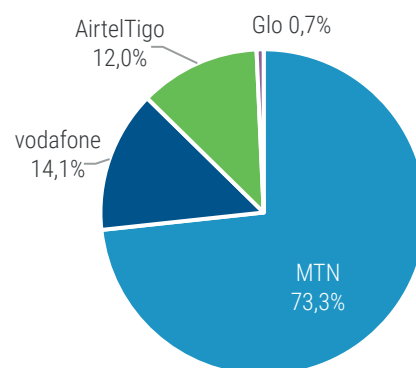
Source: National Communications Authority (2022)

Ghana Internet exchange – Ghana Internet eXchange (GIX) was officially launched in October 2005 in Accra.

The Ghana Internet eXchange (GIX) point serves Internet traffic in Ghana, to improve the connectivity and facilitate local Internet service providers and network operators to exchange traffic within the country. GIX is run and operated by the Ghana Internet eXchange Association, an independent non profit corporation established by the Ghana internet Service Providers Association.

2.3. Internet and ICT penetration rate

A reliable and robust access to the Internet is obviously a major prerequisite to any development of e commerce. This was highlighted by respondents to the survey. Indeed, 94 per cent of the private respondents mentioned access to ICT and to the Internet as important to very important to move forward online selling, and 75 per cent of private sector representatives with no online activity mentioned the lack of reliable access to the Internet as an obstacle to such a move.

The global Internet penetration rate in 2023 is close to 76 per cent of the Ghanaian population, according to data from the National Communications Authority. Note that the penetration rate here is mixing 2G, 3G and 4G. While it's still informative about the global penetration rate, the split is crucial to have a proper vision of Internet accessibility, as one cannot expand reliable e-commerce only from 2G. The most recent figure about the 4G penetration rate from NCA is 10.7 per cent in late 2021, which is not enough to expect an expansion of the digital economy towards a development and generalization of e-commerce.

2.4. Access to the Internet: cost of the mobile broad to end users

Figure VIII summarizes data for ICT access and Internet users, and provides statistics for both regional (ECOWAS) and international comparisons with data about African countries, as well as for South Africa, which ranks first in Africa in access to ICT. Data reported are from 2021, which are the most recent data allowing international comparisons.

Figure VIII: Internet and telecommunications penetration rate, Ghana, regional and international comparisons (2021) [11]

VIII.a: Internet users (%)
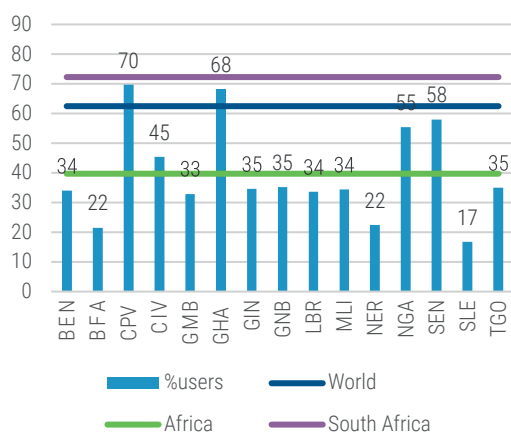
VIII.b: Fixed phone and broadband access
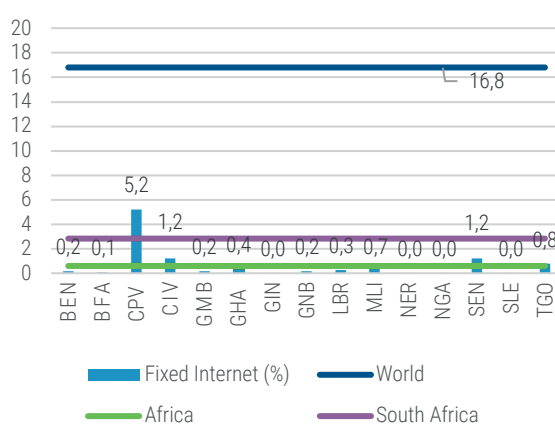
11. ISO 3166-1 alpha-3 codes are commonly used in the figure as **three-letter country codes defined in ISO 3166-1**, part of the ISO 3166 standard published by the International Organization for Standardization (ISO), to represent countries, dependent territories, and special areas of geographical interest.

VIII.c: Mobile Internet (%)
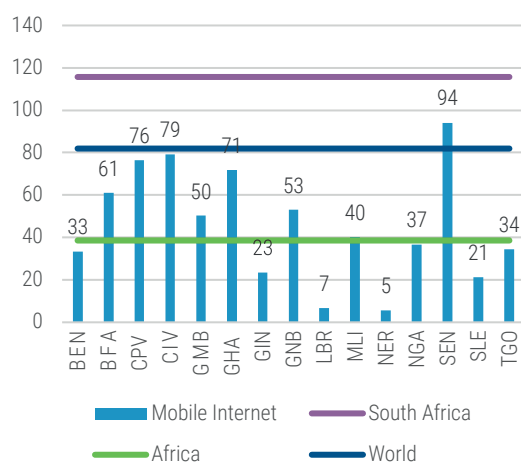
VIII.d: Mobile phone (%)
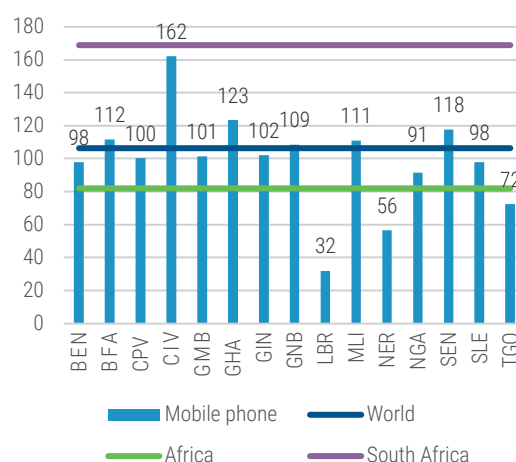
Source: UNCTAD, from International Telecommunication Union (ITU) data (2022).

Access to the Internet in Ghana: a regional comparison

GIFEC is institutionally in charge of providing universal service and access to underserved and rural communities, in line with the Electronic Communications Act (Act 775, 2008).

ICT cost is more competitive in Ghana than in most West African countries, as depicted through figure IX (IX.a). While this is specifically the case for small volumes of data (up to 1 GB), the price for large volumes of data is not consistent with the objectives of Internet access universality and e commerce generalization. Indeed, the prices for volumes of data higher than 5 or 10 GB represent respectively 5.7 and 11.4 per cent of gross national income, according to data from the Alliance for Affordable Internet (A4AI), making them unaffordable for a large part of the population.

This represents an issue for the digital economy expansion, as e-commerce requires access to large volumes of data and cannot be restricted to limited messages services.

Cost of mobile broadband and the Alliance for Affordable Internet initiative

Relative cost of Internet access and accessibility objectives by A4AI:[12]

1. **Ghana achieved the "2 for 1" objective:** The objective initially formulated by A4AI was that the cost of an Internet plan with a monthly volume of data greater than 1 GB should not represent more than 2 per cent of gross national income per capita. Only Côte d'Ivoire, Ghana and Nigeria have so far achieved this goal within ECOWAS countries (see figure IX (IX.a)).
2. **Upgraded objective: from "2 for 1" to "2 for 5":** The initial objective from A4AI has been revised to achieve access to 5 GB of data for 2 per cent of income by 2026, to take into account the evolution of needs in terms of connectivity in view of developments in the digital economy. The ECOWAS countries closest to this target today have a cost of access twice as high as the target

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12. A4AI was initiated in 2013 in Abuja with the aim of pushing people to lower the cost of Internet access. Its members include a mix of digital giants such as Google, Facebook, Cisco, Intel and Microsoft, alongside representatives of the public sector such as the United States Agency for International Development and UN Women.

as a percentage of monthly income (Nigeria, 4.3 per cent), and is 5.2 per cent in Ghana. The cost of accessing 5 GB of data represents nearly 25 per cent or more of the monthly income of the five most "expensive" ECOWAS countries (see figure IX (IX.b)).

Figure IX: Mobile broadband price in Ghana – regional comparison and A4AI initiative

IX.a: Mobile broadband price and gross national income (Ghana and ECOWAS, 2021)
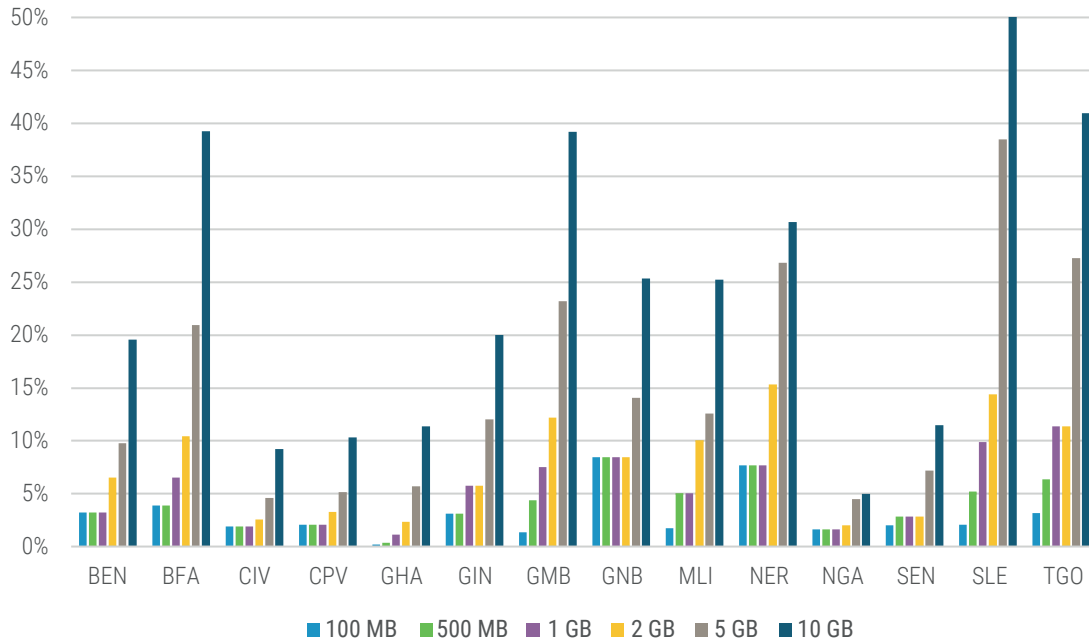
IX.b: Mobile broadband access and 1 for 2 initiative
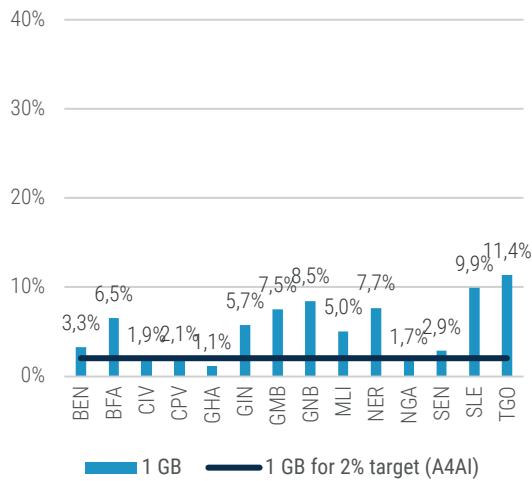
IX.c: Mobile broadband access and 5 for 2 initiative
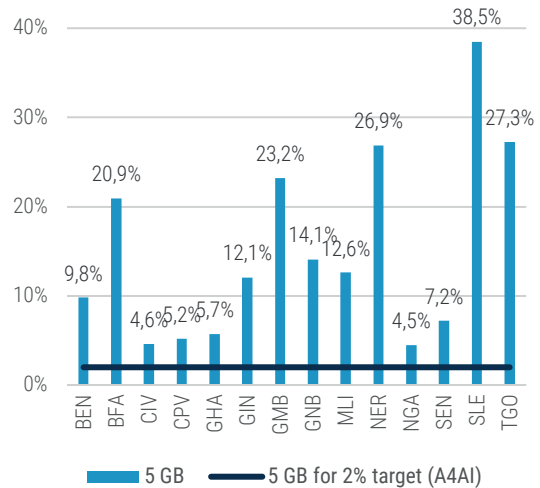
Source: UNCTAD from data from A4AI (2022)

Taxation of ICT services

There are currently in Ghana various taxes or fees levied on telecommunications. Specifically:

- Tax on national traffic
- Tax on international inbound traffic
- Annual fees on telecommunications operators' turnover
- Numbering fees
- Universal service fund
- New tax on electronic transactions (including mobile money), which was part of the 2022 budget

While this emerging sector may represent an opportunity for the Government to get new sources of revenues (taxes), it is important to underline that transparency and visibility are key regarding taxation schemes not resulting in a high degree of uncertainty likely to discourage investors in a complex environment.

2.5. Other ongoing projects

The main ongoing projects implemented by NITA, the agency specifically dedicated to support and achieving the ICT policy of MOCD, are:

Connectivity to municipal and district assemblies across the country, and support to local ICT businesses and information technology-enabled services in Ghana: The Information Technology Enabled Services (ITES) Secretariat of MOCD of Ghana is part of the eGhana Project by the Government of Ghana created to nurture the ITES/Business Process Outsourcing industry through addressing obstacles and promoting changes that are needed to promote and sustain the ITES/Business Process Outsourcing industry in the private sector to be globally competitive.

Development of the Tier 3 Data Centre to host all government applications and develop digital government infrastructures: The Data Centre facility is a crucial feature of the e-government communication infrastructure network: the entire government network will be served with eGovernment applications from this facility, and all the critical equipment and applications will be housed in the Centre as well. The Data Centre will house several racks of computing equipment – including high-performance servers, fibre channel disk storage and backup storage systems – and sufficient power conditioning and availability resources to keep the data centre running perpetually, with or without mains power. From the Data Centre, the various MDAs will be provided initially with email, antivirus software and document management systems, and more of such utility applications over time, to ensure structured and simplified workflow between and among the MDAs. Active directory services will also be provided from the Data Centre to the various MDAs, though at the organizational unit level, the directory will be managed through the local system administrators.

Implementation of Public Keys Infrastructures: As part of the Ministry of Finance (MOF) cybersecurity agenda system, this is funded by the World Bank in the context of the e Transform Project. Some technical steps have been achieved, but it still needs to be generalized and made accessible to end users, through a business model to be adopted.

2.6. Electricity access

The attractiveness of the digital industry obviously depends on access to electricity, which is one of the challenges typically faced by ECOWAS countries, specifically in rural areas.

The electrification strategy of Ghana was initiated through the National Electrification Scheme in 1989, with the policy objective of ensuring that all parts of the country are provided with reliable electricity supply by 2020. At the commencement of the Scheme in 1990, accessibility to electricity was estimated at about 20 per cent. Ghana has since achieved an enviable record of having the highest electricity access rate in sub-Saharan Africa. The national average access rate was in 2021 at 85.9 per cent, with the ultimate goal of achieving universal access.

This development, however, is inconsistent between urban and rural areas, as is commonly observed: while up to 94.7 per cent of the urban population has access to electricity, 26 per cent of the rural population still does not have access to electricity, and is consequently excluded from any digital economy development. Figure X provides a perspective with other ECOWAS countries for both rural and urban access (World Bank, 2022). Statistics from South Africa are reported as well.

Figure X: Access to electricity, urban and rural areas, Ghana and ECOWAS (2021)

X.a: Access to electricity, urban areas, Ghana and ECOWAS, 2021
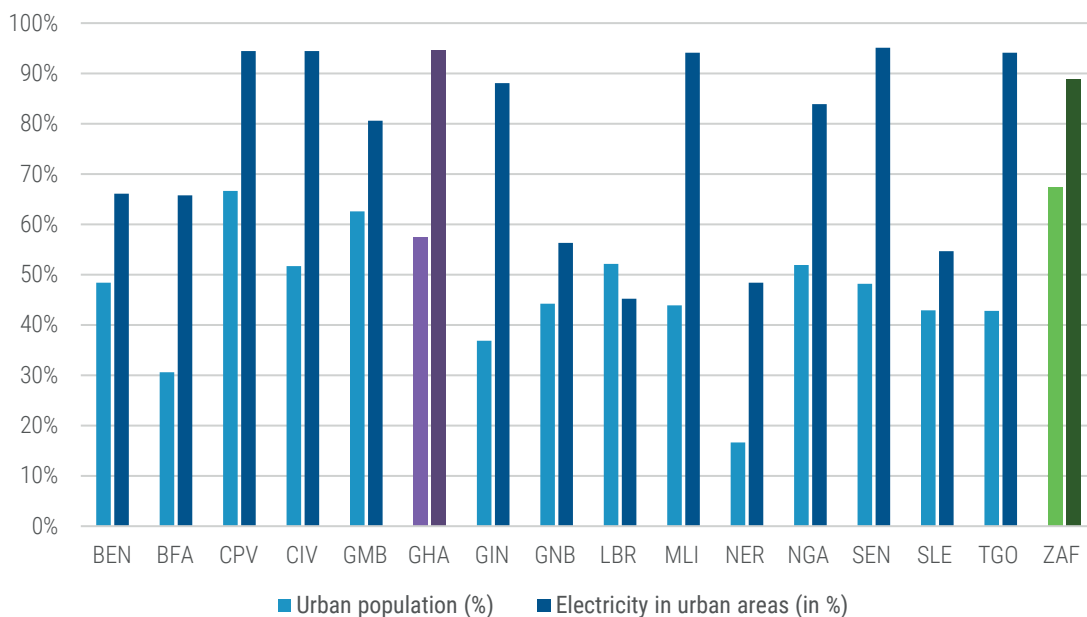
X.b: Access to electricity, rural areas, Ghana and ECOWAS, 2021
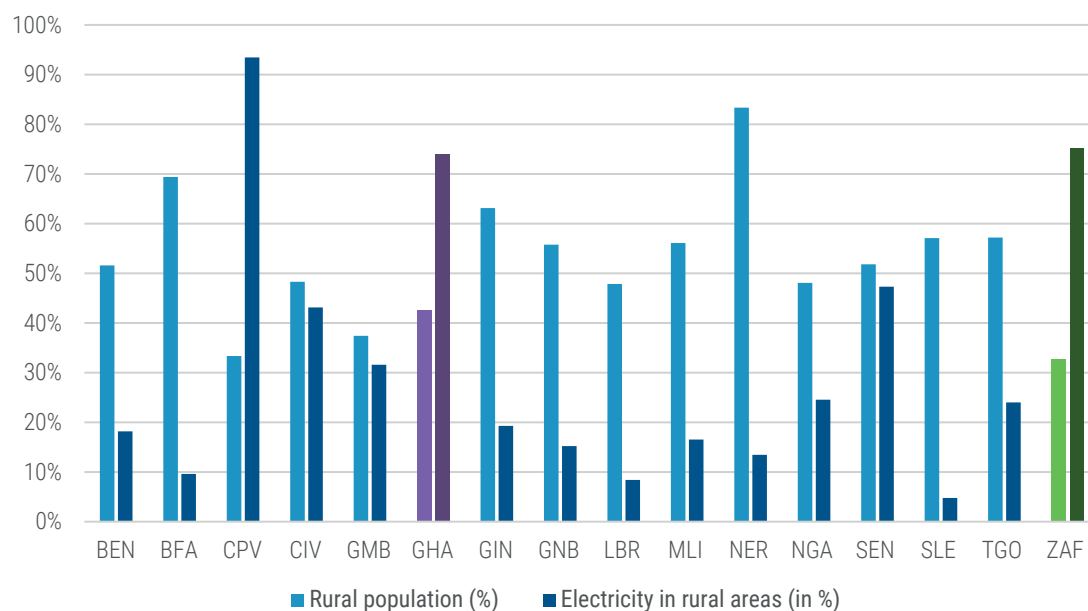
Note: Urban (rural) population (%) stands for the percentage of the total population living in urban (rural) areas. Electricity in urban (rural) areas (%) stands for the percentage of urban (rural) population having access to electricity.

Sources: World Bank, World Development Indicators 2022; and Sustainable Energy for All Africa Hub.[13]

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13. Available at www.se4all-africa.org.

3. TRADE LOGISTICS AND TRADE FACILITATION

E-commerce development in Ghana faces challenges with delivery services and, more generally, by the "delivery and logistics" dimension. Limited resources and a lack of reliable postal services or lack of tracking for postal parcels are some of the identified obstacles. Private operators largely dominate the parcel delivery market. International postal exchanges suffer from the lack of collaboration between postal and customs services.

3.1. Postal development

The UPU 2IPD relies on four dimensions:

- Reliability refers to the development of quality of service from a speed and predictability perspective.
- Reach is about the level of postal connectivity of the country with the rest of the world from an outbound perspective.
- Resilience depicts the estimated postal capacity to overcome economic, social, technological and environmental shocks in a sustainable way.
- Relevance assesses the relative success of different postal business models and activities from a demand perspective of postal services.

Each dimension gets a score of 0 to 100 and provides a global score, the 2IPD score, itself rescaled from 0 to 100. Figure XI displays Ghana and ECOWAS countries for regional comparisons for each of the four dimensions. The index for Switzerland is also reported, to provide perspective with the best player regarding postal services according to the UPU ranking.

According to the 2022 report from UPU, Ghana ranks 73rd globally, which makes it second among ECOWAS countries after Nigeria (62nd), and sixth among sub-Saharan African countries, after Cameroon (52nd), Nigeria (62nd), Kenya (64th) Ethiopia (68th) and South Africa (72nd).

While Ghana is a top player among ECOWAS countries regarding reliability and reach, this index is evidence that there is still a lot of room for improvement. Specifically, Ghanaian postal services share the same shortfalls as other West African countries, specifically regarding the "relevance" dimension, which illustrates the issue public postal operators have within the subregion. The "reach" dimension also needs to be improved, as does "reliability", which is obviously at the core of what is expected to enable e-commerce services relying on sound logistic services.

Figure XI: Integrated Index for Postal Development (2IDP), Ghana and ECOWAS (2021)

XI.a: 2IDP – Score
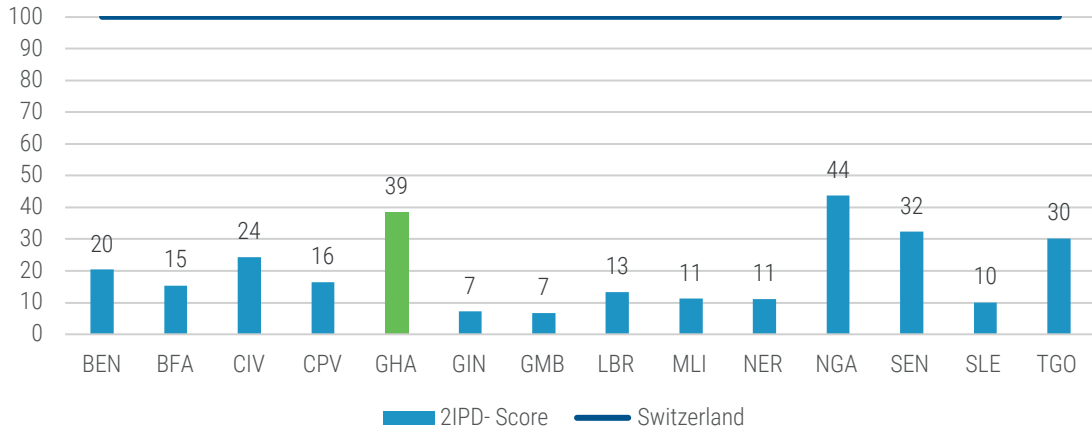
XI.b:2IDP – Reliability
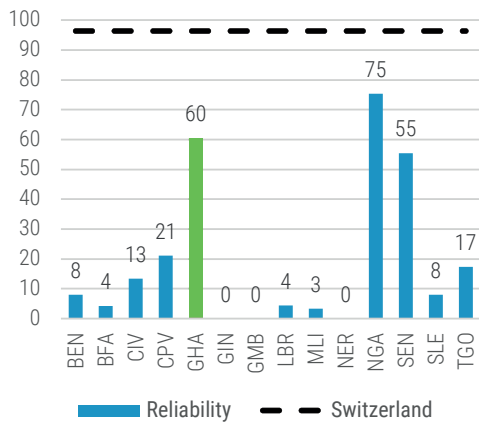
XI.c:2IDP – Reach
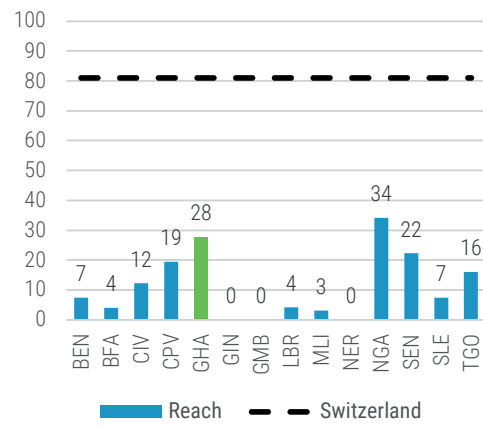
XI.d: 2IDP – Relevance
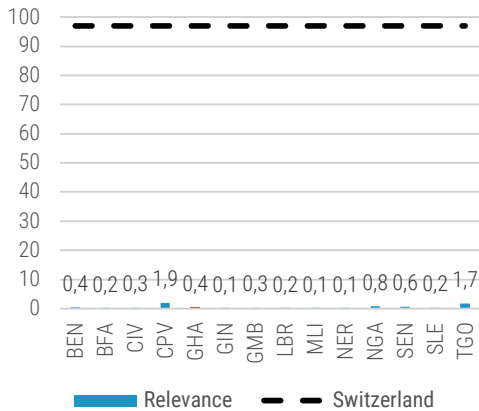
XI.e: 2IPD – Resilience
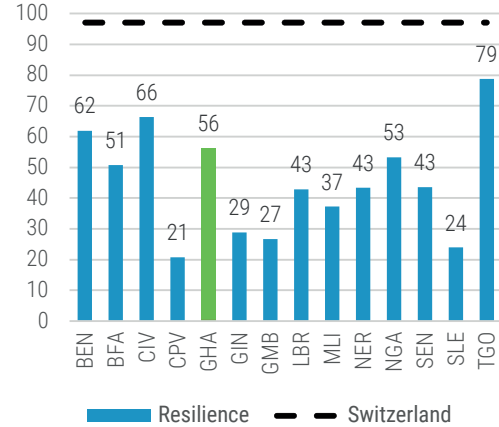
Source: UPU (2022).

3.2 Digital addressing system: the GhanaPostGPS experience

Ghana's Digital Agenda (2018) proffers a solution to digital addressing in Ghana with the deployment of an official digital property addressing system from the Land Use and Spatial Planning Authority. See box 2 for details about the GhanaPostGPS solution, which was first launched in 2017. Discussions with stakeholders during consultations highlighted that the application has not been as successful as expected, because (a) it is isolated from other platforms, while most other applications use Google Maps to determine a user's location; and (b) it has suffered from a lack of education and communication to generalize its use, resulting in local delivery services still asking recipients to give directions instead of online maps or institutions like banks, which were initially supposed to require digital addresses when signing up for an account but are still asking for "physical addresses".

A group of researchers conducted the study "Digitalisation for whom: the determinants of residents' use of the digital property address system in Accra, Ghana" to investigate the achievements of this experiment.[14] The study was conducted in three suburban communities of Accra, relying on representatives of 999 households. The study concluded that the satisfaction of the population on this experiment was mitigated. Critical vision of the application outcomes claiming uptake was low, and people were frustrated with the system for having underestimated (a) the insufficient digital culture of the residents; (b) disparities in access to the Internet, as commonly observed for other digitalization programmes and initiatives in African cities; and (c) the need to get the engagement of people expected to use the services. The issue of trust came up among the people interviewed, notably in line with irregularities in past digital initiatives. Ultimately, the survey revealed that 62 per cent of residents, including public agencies, were not using it in their daily operations.

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14. Louis Kusi Frimpong and others, *Smart and Sustainable Built Environment,* 2022, vol. 43, No. 1.

Box 2: GhanaPostGPS

GhanaPostGPS is the official digital property addressing system of Ghana. It covers every inch of the country, and ensures that all locations in Ghana are addressed. With GhanaPostGPS, every location has a unique digital address.

GhanaPostGPS is a global addressing system which divides Ghana into grids of 5m² and assigns each one a unique address, known as a digital address. With this system, every land and property gets a permanent address.

The address AK-039-5028 is for the Kumasi Main Post Office. In a deconstructed form, AK-039 is the postal code for the area. "A" refers to the region of the location (Ashanti Region), while "K" refers to the district (Kumasi District), "5028" is the unique address within the postal code. The postal code and the unique address come together to form the unique digital address.

Source: GhanaPostGPS, available at www.ghanapostgps.com.

These shortfalls in the Ghanaian postal service are consistent with the feedback from the survey conducted during the assessments. Indeed, up to 73.3 per cent of the 45 respondents from the private sector are commonly using their own delivery services for national parcel delivery, which reflects the lack of a reliable national postal service.

3.3 Logistics and trade facilitation

LPI assesses performance across 139 countries, relying notably on speed of trade measurement from tracking shipments datasets. By providing insights on the whole supply chains, this index provides a holistic vision, as supply chains are only as good as their weakest links. Areas considered for LPI are customs administration, infrastructure, international shipments, logistics competences, tracking and tracing, and timeliness.

This index demonstrates that much needs to be done to close the existing "performance gap" between high and low performers, including Ghana. Indeed, Ghana ranks 97th globally and 5th among the ECOWAS countries for which this index could be provided, and its performance is between 52 and 66 per cent of that of the best performer worldwide (Singapore). Figure XII provides the details of the index and its components.

Figure XII: Logistic Performance Index – Ghana, regional and international comparisons (2022)

XII.a: Logistic Performance Index
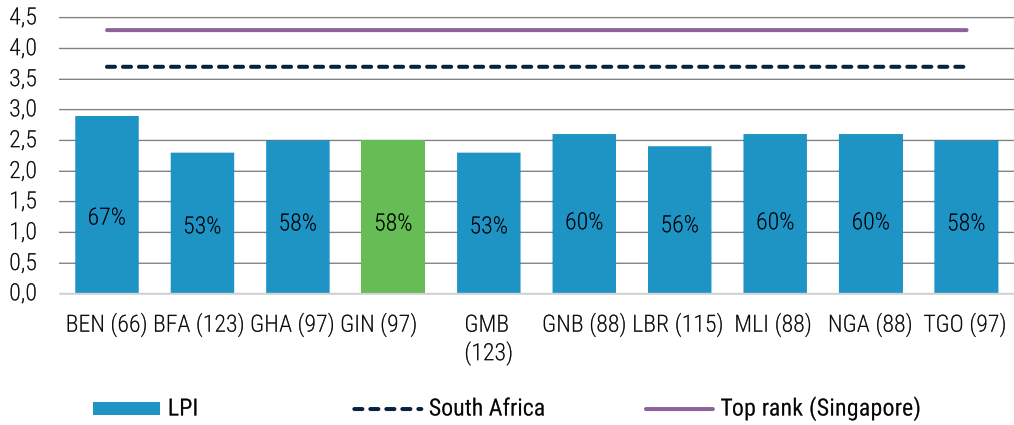
XII.b: Customs index
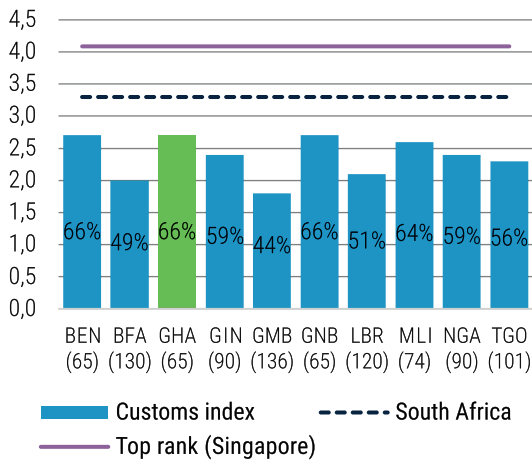
XII.c: Infrastructure index
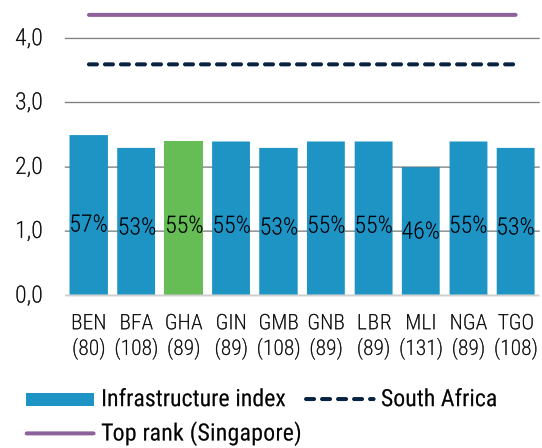
XII.d: International shipments
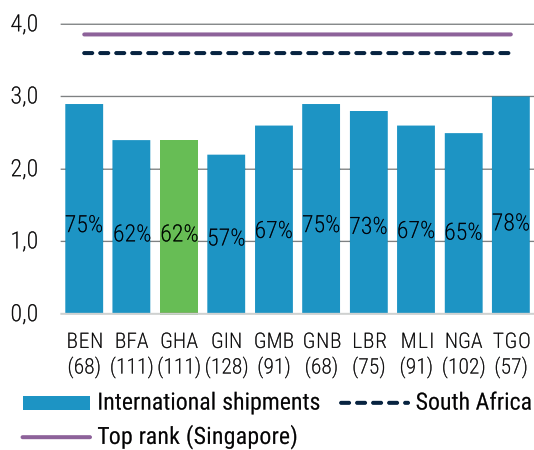
XII.e: Logistics competence
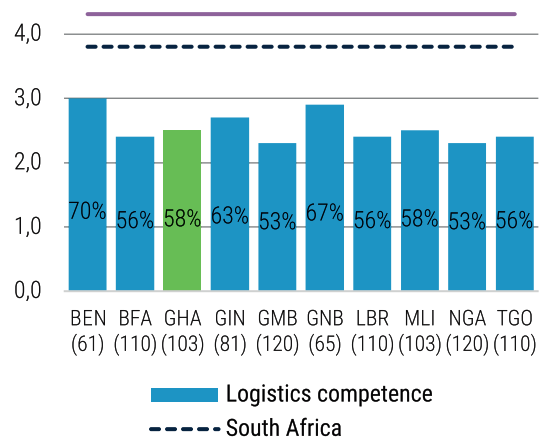
XII.f: Tracing and tracking
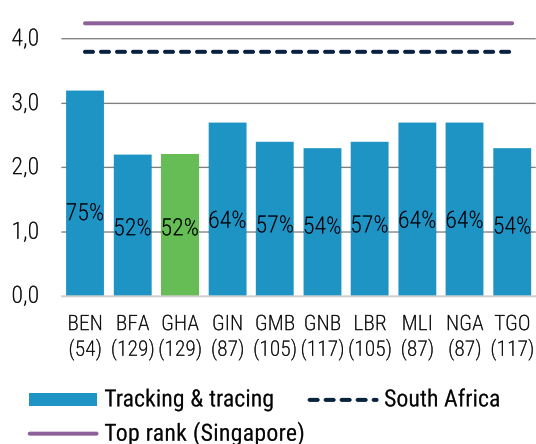
XII.g: Timeliness
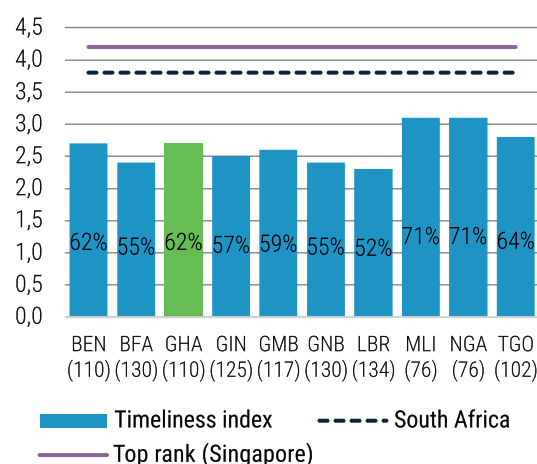
Source: UNCTAD from World Bank (2023).

Box 3: Creating economic value through e-commerce – case study of Jetstream Africa

Jetstream is a Ghanaian e-logistics platform that provides cross-border logistics services to Ghanaian importers and exporters. CEO Miishe Addy describes her company as one that leverages technology to create economic value. Founded in 2018, a year before the first case of the corona virus and the subsequent COVID-19, Jetstream was able to scale up to 20 per cent market share in its top commodity in the Ghana–United States trade corridor, with a team of less than 10 people and performing along well-established companies with staff strength thrice its size.

According to Miishe Addy, one of the challenges businesses face in managing supply chain logistics is: "You need to have trusted partners with local providers in every country you do business in. If you're moving cargo from country 'A', you need to know or have contact with freight forwarders or you might need to coordinate truck drivers, customs brokers, and shipping lines, and you need to do all that sort of partnering with local people until your cargo gets to your customer in Ghana." Using its digital platform, Jetstream provides access to advance pricing and competitive freight options, and tracks and keeps tax-compliant records of all transactions that occur along the supply chain.

At the peak of the pandemic, Jetstream was able to leverage service clients in the pharmaceutical sector, which led to the company tripling its revenue that year. According to Miishe: "We did this because we were one of the only freight forwarders in our market using technology to coordinate the warehouse-to-warehouse transport of cargo from overseas into West Africa, even during physical lockdowns." Despite her success in the logistics sector, CEO Miishe still faces challenges doing business in Ghana because she is a woman. She emphasizes that more needs to be done to actively ensure that financing is directed towards women entrepreneurs, even if that means setting up financing benchmarks for banks in favour of women. She also feels that more needs to be done to better sensitize investors on what female leadership looks like:

» We are not given the benefit of the doubt… there's very rarely a smoking gun, so no one's going to say, "I'm not going to give you an investment because you're a woman or I'm not going to do a partnership with you because you're a woman", but they automatically assume that whatever you're doing is small.

To date, Jetstream Africa has been able to raise US$16.1 million, according to Crunchbase.com, thus showing that they are invested in big business that creates real economic value.

3.4 Trade facilitation

Ghana has several bilateral, regional and multilateral trade agreements. It has been a WTO member since 1995, and was member of its predecessor the General Agreement on Tariffs and Trade since 1957. Ghana ratified the Trade Facilitation Agreement (TFA) on 4 January 2017. The TFA aims at reducing non-tariff barriers and facilitating cross-border trade, notably through decreased clearance time. In this context, developing countries determine which commitments they are in a position to implement immediately (category A), after a certain period of time (category B), or after receiving technical assistance or capacity-strengthening (category C). The current implementation rate of commitments stands at 45.8 per cent, within the time frame of February 2017–December 2025.

Main ICT-related achievements of the Ghana Revenue Authority (GRA) notably include:

- The implementation of a customs management system – the Ghana Community Network;
- The adoption of a single window for international trade, the Integrated Customs Management System.

Note that Ghana ranks first among ECOWAS countries regarding the customs dimension of the Logistic Performance Index, and 65th worldwide.

Ghana is also a member of ECOWAS and is a party to the new African Continental Free Trade Area (AfCFTA), which has been ratified by 47 African Union countries, including Ghana in July 2022.[15]

Ghana has bilateral agreements with the European Union (the Economic Partnership Agreement) and the United Kingdom (the Interim Trade Partnership Agreement). Also, Ghana has a Trade and Investment Framework Agreement with the United States of America.

In January 2023, the Parliament of Ghana ratified the African Union Convention on Cross-Border Cooperation (Niamey Convention), which Ghana had signed by in 2017.

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15. Status of ratification of AfCFTA as of September 2023.

4. PAYMENT SOLUTIONS

The use of mobile money has grown significantly in Ghana over the past few years, as it has in many African countries. However, the dematerialization of payments remains limited, and cash remains largely the most-used payment solution, notably "cash on delivery", for e-commerce transactions. This poses security problems related to the transport of cash, and implies additional difficulties for merchants, who may be confronted with consumers who do not show up at the place of collection of the goods, or renegotiate the amount of the transaction once the delivery is made. Operations and transactions related to mobile money are essentially deposits and withdrawals from the mobile money account used as an electronic wallet. This is largely due to the costs associated with transferring mobile money from one account to another, as well as withdrawals. There is also a problem of user confidence. The relatively low level of debit/credit card penetration rate (29 per cent of adult population, according to the IMF Financial Access Survey, 2022) also explains the low use of online payments via credit cards.

4.1. Payment System Strategy

The development of the payment digitalization is part of the Payment System Strategy 2019–2024 and part of the Ghana Digital Agenda.

The Government has set up a new Digital Payments Coordination Unit to drive effective stakeholder engagement on the implementation of key actions, notably the following:

- The National Financial Inclusion and Development Strategy (2018–2023), developed in collaboration with the World Bank, aims at increasing financial inclusion from the current 58 per cent to 85 per cent by 2023, helping create economic opportunities and reducing poverty.
- The Digital Financial Services Policy, developed in partnership with the Consultative Group to Assist the Poor, builds on existing technological gains to create a resilient, inclusive and innovative digital ecosystem that contributes to social development, a robust economy and a thriving private sector.
- The Cash-Lite Roadmap, designed in collaboration with the United Nations-based Better Than Cash Alliance, puts forward concrete steps to build an inclusive digital payments ecosystem. This includes better access to financial services, enabling regulation and oversight, and promoting consumer protection.

4.2. Regulation of e-money: Guidelines for E-Money Issuers in Ghana (2015)

The Bank of Ghana released Guidelines for E-Money Issuers in Ghana in July 2015 as part of its strategy to better regulate the retail payment and funds transfer mechanisms environment, and make it both more efficient and safer. The Bank of Ghana encourages the use and acceptance of electronic money for retail payments, notably as a mean to increase financial inclusion. Also, some safeguards and controls are provided to mitigate the risks associated with e-money business and ensure consumer trust. Finally, the Bank of Ghana specifies rules for non-traditional banks, such as e-money issuers offering financial services through retail agents.

The objectives of the guidelines are to:

- Promote financial inclusion without risking the safety and soundness of the financial system;
- Extend financial services beyond traditional branch-based channels to the domain of everyday transactions;
- Ensure that electronic money is only provided by financial institutions regulated under the Banking Act, 2004 (Act 673) or duly licensed non-bank entities that are engaged solely in the business of e-money and activities related or incidental to the business of e-money, and which are regulated and supervised by the Bank of Ghana ("Dedicated EMIs" (e-money issuers));
- Ensure that customers of e-money issuers benefit from adequate transparency, fair treatment and effective recourse.

4.3. Payment digitalization initiatives

Mobile money interoperability

Mobile money payment interoperability was developed by Ghana Interbank Payment and Settlement Systems (GhIPSS), with active collaboration of the mobile industry, to allow direct and seamless transfer of funds from one mobile money wallet to another across networks. GhIPSS (a subsidiary of the Bank of Ghana) provides the backbone of the country's digital payments, making interoperability possible to transfer money across different mobile money providers, between bank accounts and mobile wallets, interbank transfers, automated teller machine (ATM) networks and domestic card payments.

In May 2018, the Bank of Ghana mandated that all mobile money providers connect to Ghana Link (GHLink), the switching and processing system of GhIPSS, interconnecting financial institutions and systems of third party payment service providers. Full interoperability between mobile money providers and banks was then introduced in December 2018. Interoperability was set to support users to transact business. It drives financial inclusion, lowers transaction costs, increases service reach and reduces reliance on cash for payments. It also provides a financial transaction engine that is versatile, efficient and robust, and enhances patronage by both banked and unbanked segments of the population.

Ghana E-Payment Portal (GEPP)

GEPP has been designed to facilitate electronic payments for government services by citizens, businesses and other entities conducting business with the Government of Ghana. It accepts a range of payment options, including card payments, mobile money and bank transfer. Available services include payment of fixed fees, tangible goods and services. Payments for taxes are also supported.

e-Cedi

The Bank of Ghana is working to develop a digital currency, e-Cedi, which will be a digital form of its currency available to offline users. The e-Cedi, which the Bank of Ghana is yet to pilot, seeks to facilitate transactions without the need for power or connectivity.

Pan African Payment Settlement System

After a test phase initiated in the West African Monetary Zone, the Pan-African Payment Settlement System (PAPSS) instrument was launched commercially on 17 January 2022 in Accra, within the region composed of the Gambia, Ghana, Liberia, Nigeria and Sierra Leone. PAPSS is a platform designed to facilitate instant cross-border payments in local currency between countries, even though, unlike WAEMU countries, West African Monetary Zone countries do not have a common currency. The system thus allows a customer from a given country to pay in their own currency, while the seller located in another country will receive the payment in their own local currency. The Board of Directors of PAPSS is composed of the President of the Central Bank of the Niger; representatives of the central banks of the Gambia, Ghana, Guinea, Liberia and Sierra Leone; representatives of the African Export–Import Bank, the initiator of the initiative; the African Development Bank; and the African Union. The Managing Director of Smart Africa – an alliance of 32 African countries, international organizations and global private sector actors in charge of the African digital agenda– announced that the institution and the African Export–Import Bank had recently signed a memorandum of understanding to support the development of pro-PAPSS policies and regulations across the continent. The collaboration between Smart Africa and PAPSS could help boost intra-African trade within the framework of AfCFTA.

4.4. Digital payment services

Mobile money services

In Ghana, mobile money services are well developed, with the high penetration rate of mobile phones described through the review of pillar 2 (123 per cent, according to ITU, 2022). Mobile devices are powered by different telecommunications network providers that allow subscribers to transfer money and make payments in accordance with the Guidelines for E-Money Issuers (2015).

The main telecommunications companies are MTN Ghana, Vodafone and AirtelTigo. The Bank of Ghana also reports that, in 2021, there were 40.9 million registered mobile money accounts and 17.5 million active accounts, leading to the outstanding penetration rate of 89 per cent of the adult population. (See figure XIII for detailed statistics at the ECOWAS level from the IMF Financial Access Survey, 2022.) The International Finance Corporation reports that Ghana is among the fastest-growing markets for mobile money services in Africa.

While this very high penetration rate demonstrates a clear adoption of the digitalized payment system as mobile money, the two following shortfalls emphasize the need to go even further to adopt the use of mobile money for e-commerce:

- This very high penetration rate does not correspond to achieved universal access. Indeed, as was reported and discussed during the consultations and already mentioned about the impressive mobile phone penetration rate, there can be several accounts per person due to the uncertain quality of coverage from the telecommunications operators.
- Mobile money operations are essentially for e-wallet recharge/withdrawal or telephone credit re-charge, more rarely for person-to-person transfer, but the use of "vendors" as concerns Subscriber Identity Module (SIM) cards for dedicated formal payments, either for e-commerce or for "on-site commerce", remains an exception. While the Bank of Ghana does not provide statistics on the categories and use of mobile money operations, this was mentioned during UNCTAD consultations with the stakeholders, and is commonly observed and documented from the data provided by the

BCEAO (Banque Centrale des États de l'Afrique de l'Ouest (Central Bank of West African States)) regarding WAEMU countries.

Banking penetration

Ghana has the distinction within the ECOWAS region of having both a high mobile money and high banking penetration rate. Indeed, the banking penetration rate, measured from the percentage of the adult population having a bank account, is 72 per cent, far behind the 146 per cent of Nigeria, which has a more limited expansion of mobile accounts (only 19 per cent, including inactive accounts), but twice as much as Côte d'Ivoire (35 per cent).

This high penetration rate is promising for digital economy development requiring digitalized payments:

- This high banking penetration rate may also result from multiple accounts per person in different commercial banks, actually resulting in a more concentrated banking penetration rate.
- The percentage of the adult population having debit cards remains more limited – 29 per cent of the adult population, according to the IMF Financial Access Survey, 2022. Meanwhile, it is by and large ahead of West African countries, as it is more than double the percentage of Côte d'Ivoire (13 per cent) and Benin (12 per cent), which rank second and third best, respectively, among ECOWAS countries.

Figure XIII: Banking and mobile money penetration (2021)

XIII.a: Banking and mobile money penetration

■ Bank account penetration rate (%) ■ Debit card penetration (%) ■ Active mobile money accounts (%)
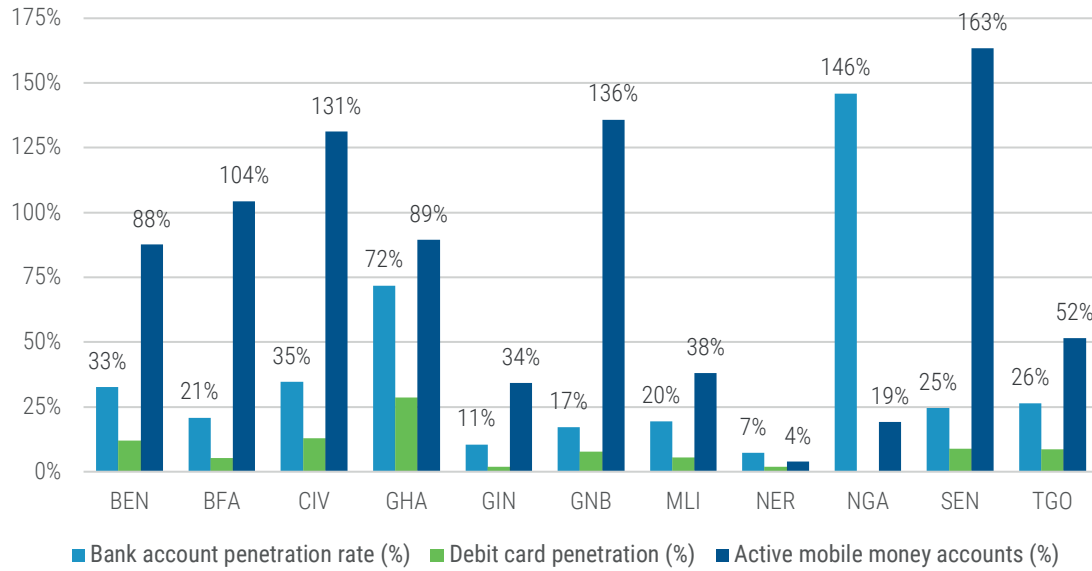
Note: Data about mobile money accounts for Nigeria include inactive accounts, due to availability constraints.

XIII.b: Banking versus mobile money penetration rates

■ Bank account penetration rate (%) ■ Active mobile money accounts (%)
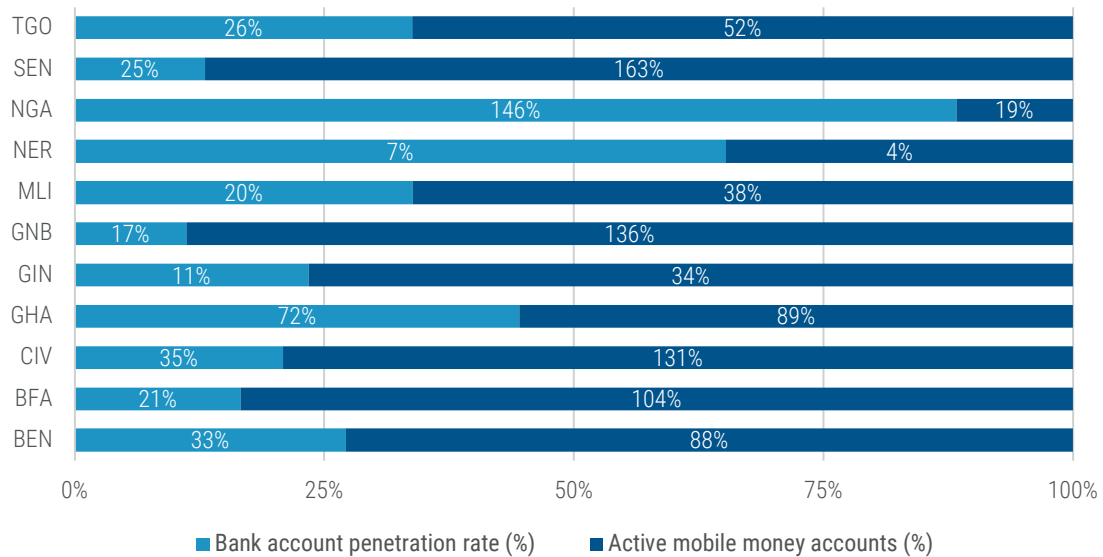
Source: IMF Financial Access Survey, 2022.

5. LEGAL AND REGULATORY FRAMEWORKS

The Ghanaian legal and regulatory frameworks on the use of ICT, digital, e-commerce and consumer protection are quite comprehensive, with a set of laws on telecommunications regulation and electronic transactions, personal data protection and cybercrime. However, challenges concern the dissemination and capacities to implement and monitor the actual application of the legislation. Some of these laws should also be updated, such as the Electronic Transactions Amendment Act of 2012.

5.1. Key digital and e-commerce laws

Over the last two decades, Ghana has adopted a whole set of laws and a regulatory framework regarding electronic communications, electronic transactions, mobile regulations, data protection, cybercrime and cybersecurity, and consumer protection.

Electronic communications

- The National Information Technology Act (Act 771, 2008) established the National Information Technology Agency to regulate ICT.
- The National Communications Act (2008) (Act 769, reviewing the existing NCA, 1996) established the National Communications Authority as the central body to license and regulate communications activities and services in the country, and to provide for related purposes.
- The Electronic Communications Amendment Act (775, 2008) provided for the regulation of electronic communications and broadcasting, the use of the electronic-magnetic spectrum, and for related matters.
- The Electronic Communications Regulations (2011) Principles are applicable to the electronic communications industry General Principles 1. The following general principles shall apply to the Authority, operators of electronic communications networks and providers of electronic communications services.
- The Electronic Communications Regulations (2016) provided the Rules of Procedure of the Electronic Communications Tribunal.

Electronic transactions

- The Electronic Transactions Act (Act 772, 2008), amended by the Electronic Transactions Amendment Act (Act 838, 2012) provides the regulation of electronic communications and related transactions. The Act has several objectives, including (a) the removal and prevention of barriers to electronic communications and transactions; (b) the promotion of government services and electronic communications with public and private bodies, institutions and citizens; (c) ensuring that vulnerable groups and persons with disabilities are taken into account; and (d) promoting legal certainty and confidence in electronic signatures, through the admissibility of electronic records. Section 10 specifies conditions for digital signatures to be presumed authentic.
- The Electronic Transactions Act enacts the UNCITRAL Model Law on Electronic Commerce (1996), and the UNCITRAL Model Law on Electronic Signatures (2001), and incorporates the substantive provisions of the United Nations Convention on the Use of Electronic Communications in International Contracts (2008).

Mobile regulations

- Mobile Number Portability Regulations (2011) permit a subscriber to transfer from one mobile telecommunications service provider to another while the subscriber retains the mobile number allocated to that subscriber by the mobile telecommunications service provider from whom that subscriber is transferring.
- SIM Registration Regulations (2011) define how a subscriber shall, for the purpose of registration, furnish the network operator or service provider with personal information, such as residential or occupational address of the subscriber, and date of birth.

Data protection

- Data Protection Act (Act 843, 2012) recognizes a person's right (data subject rights) to protect their personal data or information by mandating a data controller or processor to process (collect, use, disclose, erase, etc.) such personal data or information, in accordance with the individual's rights. The Data Protection Commission was established in 2012. Typical issues and challenges discussed during the national consultations are about the degree of implementation of the Act, as well as the requisite skills for the officers in charge of the monitoring.

Cybercrime and cybersecurity

- At the level of the African Union, the Convention on Cyber Security and Personal Data Protection (Malabo Convention) of 27 June 2014 is the reference text in the framework of electronic commerce and digital economy in general. This Convention regulates electronic transactions, including electronic signatures and the protection of personal data, as well as cybersecurity and the fight against cybercrime. To enter into force in the African Union requires ratification by 15 member States. However, to date, only 14 countries have signed it (including Benin, Guinea-Bissau and Togo) and only 5 have ratified it (including Ghana, Guinea and Senegal), with Togo soon to be the sixth.
- The Budapest Convention was ratified in 2018, and entered into force in 2019. This is the framework for hundreds of practitioners from parties to the Convention to share their experiences and create relationships that facilitate cooperation on cybercrime in specific cases, including emergency situations, beyond the specific provisions of the Convention. All countries can join. Benin, Burkina Faso, the Niger and Nigeria have been invited by the Council of Europe to join, while Senegal (2016), Cabo Verde (2018) and Ghana (2018) have already ratified it.
- The Cyber Security Act 2020 (Act 1038) of Ghana created the Cyber Security Authority (CSA) to regulate cybersecurity activities in Ghana, to promote the development of cybersecurity in the country, and see to the general protection of citizens in the cyberspace (2020).

Consumer protection

- Consumer protection policy beyond e-commerce: The Government of Ghana has initiated national consultations through the Ministry of Trade and Industry to develop a comprehensive consumer protection policy as part of the Ghana trade policy, beyond just e-commerce and ICT potential issues. The shortfalls previously identified were specifically the lack of easy and cost-effective redress mechanisms to protect the consumers.

  The first phase was completed 31 March 2023, with a four-month period of consultations, which should result in the development of a comprehensive consumer protection policy regarding (a)

physical safety of goods and distribution facilities; (b) promotion and protection of consumers' economic interests through fair trading practices; (c) quality standards for safety and health of consumers and consumer goods and services; (d) consumer redress and representation measures; (e) advertising of products and services; (f) education and information; (g) consumer choice; (h) promotion of sustainable consumption and environment; (i) product information and labelling; (j) addressing special needs of vulnerable and disadvantages consumers; and (k) special subject areas (food, water, pharmaceuticals, etc.).

- Consumer protection policy specific to e-commerce:

  The Electronic Transactions Act specifies information to be provided by e-commerce suppliers:

  » Commercial electronic transmissions must specifically mention the option to cancel the subscription to the mailing list (through opt-in and opt-out options) and the identifying particulars of the source from which that person obtained the consumer's personal information.
  » Unsolicited electronic communications should not be sent to consumers without obtaining prior consent unless they are sent to a consumer concerning a service.
  » The consumer is entitled to recover the costs of cancelling the unsolicited communication. An agreement will not be concluded if a consumer fails to respond to an unsolicited communication.
  » The supplier is liable for any damage the consumer may suffer from failure to use a secure payment system. Unless the parties to the online transaction have stipulated specific rules, a supplier must execute an order within 14 days of receiving the order. If the supplier fails to perform due to the unavailability of the goods, he must immediately inform the consumer.
  » The consumer can affirm or cancel the transaction if the suppliers fail to perform within 14 days of the agreed date.
  » The law allows the consumer the power to cancel a transaction within a grace period.
  » Any provision in an agreement online between a business and a consumer which does not consider consumer protection will be considered void.

The Payment Systems and Services Act has also outlined these specific consumer protection provisions.

In the context of regional trade integration, notably ECOWAS, the mutual recognition of electronic certificates guaranteeing the authenticity of electronic signatures according to their definition from the additional Act of ECOWAS (A/SA.2/01/10 of 16 February 2010) is limited to one technical solution. Ghana and most of its regional partners are in the process of securing the reliability of the electronic certificates through a Public Key Infrastructure, but its use or mutual recognition from one country to another has not yet been generalized within ECOWAS. The ECOWAS additional Act should henceforth be amended to integrate or adopt other solutions for cross-border recognition, including the United Nations Convention on the Use of Electronic Communications in International Contracts (see below).

Ghana could consider the adoption of the United Nations Convention on the Use of Electronic Communications in International Contracts (2005) aiming at facilitating the use of electronic communications in international trade by ensuring that contracts and other communications exchanged by electronic means have the same validity and binding force as their traditional paper equivalents. Note that this Convention builds on earlier texts drafted by the Data Protection Commission, including the UNCITRAL Model Law on Electronic Commerce (1996) and the UNCITRAL Model Law on Electronic Signatures (2001), which Ghana has already adopted. Moreover, since Ghana has already incorporated the substantive provisions of the Convention in domestic law, the effect of the adoption of the Convention would be to increase legal predictability and certainty of electronic communications exchanged across borders, by extending rules that are already well known in Ghana.

Moreover, the Electronic Transactions Act excludes from its scope of application bills of exchange and bills of lading. The reason for this is that, at the time of the adoption of the Act, there was no adequate legislative model. Ghana could now consider the adoption of the UNCITRAL Model Law on Electronic Transferable Records to fill that gap. This would provide a significant contribution to modernizing trade financing, which may facilitate access to credit, and to improving logistics operation and, more generally, paperless trade.

5.2. Digital and e-commerce laws awareness and enforcement.

ECOWAS laws need to be updated. Beyond the purpose of the regional or subregional dimension, the consultations held in Accra in the context of this assessment have shed light on preoccupations regarding both the degree of enforcement of such legal framework and regulation, and on the awareness and access to the information regarding this legal framework. These preoccupations are illustrated by answers to the UNCTAD survey in the context of the assessment (see figure XIV).

The orders of magnitude are similar from one dimension to another, but specifically regarding consumer or producer protection, only 15.8 per cent of respondents considered the law to be strictly applied, while 18.8 per cent considered there was no enforcement at all, and 36.6 per cent answered that enforcement was limited to awareness-raising.

Cybercrime, the dimension that is perceived as having a higher degree of enforcement, is only considered as strictly enforced by 28.7 per cent of respondents.

Figure XIV:: Enforcement of the legal framework (102 answers)

For each of the following dimensions of the legal framework, would you say that law enforcement is strict (including sanctions), broad (reminder), flexible (awareness), or not at all?

	Strict (sanction)	Broad (reminder)	Flexible (awareness)	Not at all
Secure payments	23,0%	42,0%	29,0%	6,0%
Consumer/producer protection	15,8%	28,7%	36,6%	18,8%
Data protection	22,5%	33,3%	37,3%	6,9%
Cybercrime	28,7%	24,8%	37,6%	8,9%
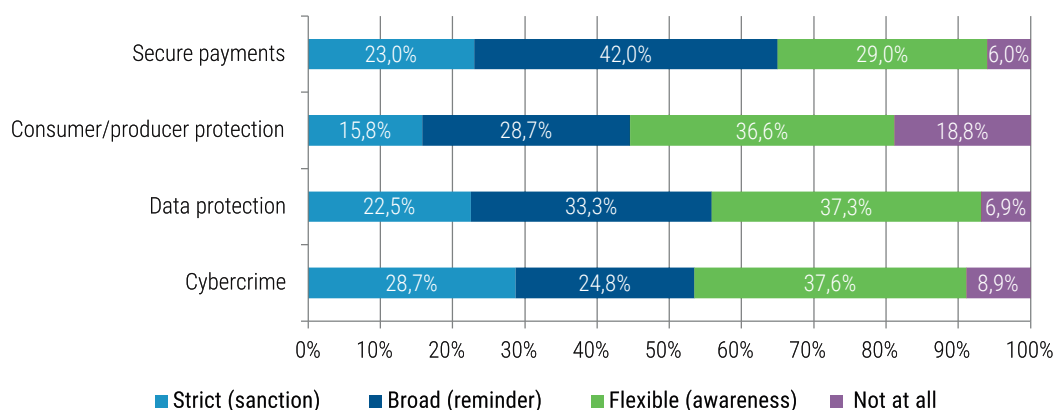
Source: UNCTAD (2023) Ghana eTrade Readiness Assessment Online Survey.

Consistent with these answers, only 23.5 per cent of respondents considered that the regulations in place in Ghana were sufficient to guarantee the safety of the producer, 47 per cent considered they were not, and 29.4 per cent didn't know (out of 51 answers from the private sector).

Finally, only 15.7 per cent of the respondents found that the information concerning e-commerce legislation (information website, practical guides to download, etc.) were widely accessible, while 74 per cent found them moderately (62.7 per cent) or not accessible at all (11.8 per cent) (51 answers from the private sector).

6. E-COMMERCE SKILLS DEVELOPMENT

The supply of training courses and diplomas for digital skills and e-commerce has increased in recent years. However, there seems to be a mismatch between the training offered by universities and technical training schools, and the needs expressed by digital market players. A digital skills development plan needs to be integrated into the national e-commerce strategy to adjust the training offer to the needs of companies, and to structure the ecosystem, including incubators and technology start-ups. These programmes must consider the fact that access to university remains quite restricted, hence the access to technological university programmes (18.7 per cent of tertiary schooling in 2021, according to the World Development Indicators (2022) from the World Bank).

6.1. Strengthening the digital skills to seize opportunities and close the skills gap

Strengthening digital skills is essential to get African countries prepared for a changing world and labour market. The report Digital skills in Sub-Saharan Africa: Spotlight on Ghana[16] from the International Finance Corporation (IFC) in May 2019, estimates that 9 million jobs will require digital skills in by 2030, with 20 million corresponding opportunities for training and US$4 billion in revenue potential through 2030. The report provides a set of recommendations regarding a medium-to-long-term vision of needs for digital skills upgrade, notably regarding how the demand for digital skills should be understood and how the skills gap should be closed.[17]

Digital skills are essential to the future workforce, with basic skills in the most demand, as well as some intermediate and advanced skills. According to the IFC report, around 65 per cent of hired employees in surveyed African companies should have basic digital skills, considering there will be 230 million "digital jobs" in sub-Saharan Africa by 2030, resulting in massive needs for training in the meantime. There is a demand–supply gap across all levels of digital skills, but even more for intermediary skills (use of Excel sheets, presentations, digital research and marketing). While the demand in sub-Saharan Africa for digital skills will increase continuously for the next decade, economies in Africa will falter without more focus on learning digital skills. While Governments in sub-Saharan Africa and Ghana have taken steps to integrate ICT in education, the policy response has not been sufficient, given strong demand resulting notably from the digitization and automation of agriculture, manufacturing and services. The greatest opportunities are in the short-term business-to-business and business-to-government training for basic and intermediate skills, although there are significant opportunities in business-to-consumer skills focused on intermediate and advanced skills.

6.2. The need to improve digital skills

Stakeholders gathered for the consultations in Accra during the assessment acknowledge this need for a global upgrade of digital skills in Ghana regarding new technologies to embrace forthcoming opportunities relating to the digital economy and e-commerce.

Answers to the UNCTAD survey reveal the cross-sectional needs, with strong and heterogeneously distributed demand for improvement among the several dimensions highlighted through the survey.

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16. International Finance Corporation, *Digital skills in Sub-Saharan Africa: Spotlight on Ghana* (Washington, D.C., World Bank Group, 2018).
17. IFC May 2019. Available at www.ifc.org/en/insights-reports/2018/digital-skills-in-sub-saharan-africa.

Figure XV: Digital skills to be improved

How would you rate your own mastery of the following skills for running your business? (49 answers)
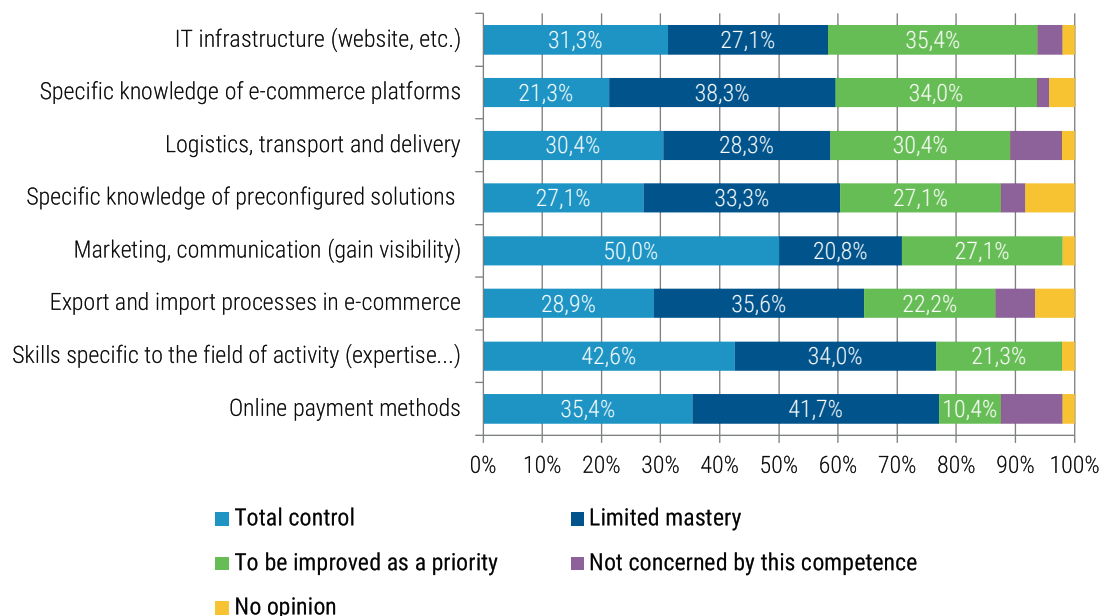
Source: UNCTAD (2023) Ghana eTrade Readiness Assessment Online Survey.

While these needs are explicitly expressed (40 of 70 respondents acknowledged limited mastery, or a need for improvement as a priority, depending on the skill), answers to the UNCTAD survey provide mitigated assessment about the relevance of the supply for digital trainings (see figure XVI). Indeed, 45.8 and 52.1 per cent of respondents consider the current ICT training offer through continuing education programmes, on-the-job training programmes or programmes dedicated to start-ups and/ or MSMEs, which do not meet the country's needs for the development of e-commerce and the digital economy.

Figure XVI: Does the current ICT training offer meet the country's needs for the development of e-commerce and the digital economy? (48 answers)
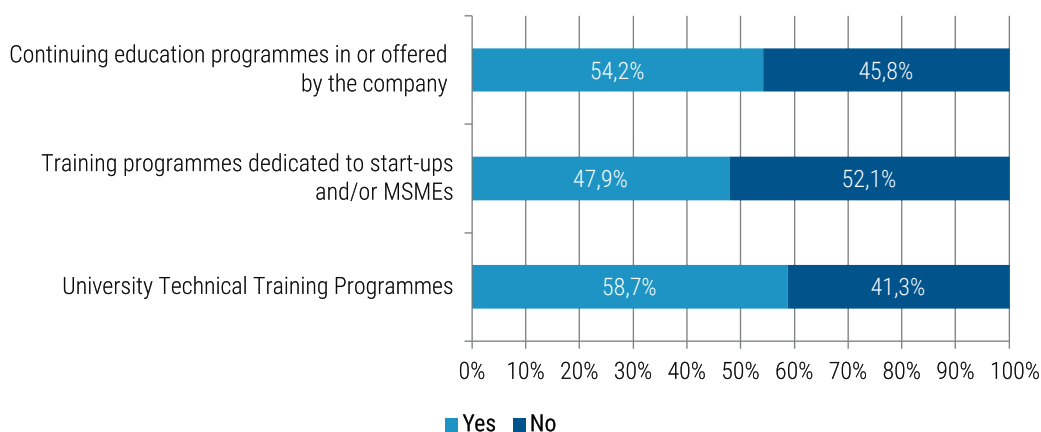
Source: UNCTAD (2023) Ghana eTrade Readiness Assessment Online Survey.

On the other hand, almost 60 per cent of respondents consider that university technical training programmes meet their needs, which though promising, still leaves room for improvement. But it unfortunately concerns only a limited part of the population, as the rate of tertiary schooling in 2020 was around 18.7 per cent, according to the World Development Indicators (2022), as reported in table 2.

Table 2 also reports the literacy rates for both the total population and youths, and provides two insights. First, literacy is generally improving, as the literacy rate has increased from 84.5 per cent to 93.5 per cent, if considering only those 15–24 years of age, and not the whole population 15 years of age and over. Secondly, the gender gap in literacy has decreased from 10 percentage points between the male and female population at the aggregated level, to 0.2 percentage points for the 15–24 years age group. Also, schooling rates are equivalent or even higher for females of all categories of schooling – primary, secondary and tertiary.

Table 2: Literacy and schooling rate (2020)

	Total	Male	Female
Literacy rate (15+)	80.4%	84.5%	76.2%
Literacy rate of the youth (15–24)	93.5%	93.6%	93.4%
Primary schooling (gross, %)	103.4%	102.6%	104.3%
Secondary schooling (gross, %)	77.7%	77.5%	77.8%
Tertiary schooling (gross, %)	18.7%	17.7%	19.6%

Source: World Bank (World Development Indicators, 2022).

It is important to keep in mind how limited the share of the population accessing tertiary education is, in order to expand the digital trainings through incubating programmes and people already out of school.

6.3. Education and incubation programmes

In the context of the national digital strategy, education and incubation programmes are being implemented to accompany the ICT sector. Consultations with stakeholders and UNCTAD survey results demonstrated the need to communicate more and expand the scope of such programmes, as it appeared the information was not very well shared, and only a quarter of the participants had ever benefited from an incubation programme (out of 67 respondents from the private sector).

Advance Information Technology Institute – Kofi Annan Centre of Excellence: The Ghana–India Kofi Annan Centre of Excellence in ICT was established in 2003 as the ICT Capacity Development Agency under MOCD. The core aim of the Centre is to promote individual and institutional capacity-building, research and innovation, and consultancy and advisory services in ICT and eGovernance solutions in Ghana and Africa.

School Connectivity Project: This project was designed to facilitate access to the Internet for schools. It makes information easily available to students and teachers to enhance learning. So far, 411 schools have benefited from the project, and more will be covered in the future. Funded by GIFEC, it helps schools to be equipped with computers, projects, uninterrupted power system, etc.

National Entrepreneurship and Innovation Programme: This is an initiative of the Government of Ghana to provide integrated national support for start-ups and small businesses. It provides business development services, start-up incubators and funding for young businesses, to enable them to grow and become successful. The programme has – in association with the eTransform Project and three technological centres, Ghana Tech Lab, Ghana Innovation Hub and Kumasi Business Incubator – contributed to training 11,000 youths, creating 49 start-ups and supporting 1,200 companies.

Community ICT Centres: These are community resource centres or business services, information hubs for individuals and educational institutions (training youths and women for digital initiatives). According to GIFEC, 214 Community ICT Centres have been built, 181 of them equipped and operationalized, and 82 provided with Internet connectivity.

6.4. Technological gender bias and initiatives to promote women

A series of programmes and initiatives have been implemented to help girls and women embrace ICT careers and adhere to new technology through skills strengthening, trainings and mentoring. Similarly to education programmes, consultations with stakeholders highlighted the need to better communicate on these initiatives. Indeed, as seen in figure VI, 63.5 per cent of the respondents (out of 67 respondents from the private sector) were not aware of any of such programmes – neither the ones listed below nor others.

Ghana Rural Telephony Project (GRTP) and Digital Inclusion Project (DIP): As part of the project implementation, beneficiary communities receive digital literacy programmes that the Government is implementing through GIFEC. For example, in 2022, the annual Girls-In-ICT programme was earmarked to train 5,000 girls in five regions. At the time of writing, 3,000 girls had received training, with the remaining 2,000 expected to be completed before the end of 2022. Similarly, the Digital Transformation Centre project was projected to train 14,000 people from diverse backgrounds in basic and intermediate ICT skills. A significant portion of the beneficiaries is earmarked for women. Other interventions, such as the ICT for Women Empowerment and Girls Can Code, are deliberate actions designed to improve digital literacy skills of connected communities under GRTP and DIP, and both cumulatively have trained over 2,000 women in the past two years.

Digitalize for Jobs (D4J) initiative (funded by the German Federal Ministry for Economic Cooperation and Development): About 400 women-led SMEs are benefitting from the women SME innovation programme D4J to fully leverage the potential of digitalization, and to better organize their business information. The programme is supported by the special initiative on Training and Job Creation, which operates under the brand "Invest for Jobs", an initiative of the German Federal Ministry for Economic Cooperation and Development.

Girls in ICT (ITU): A total of 1,000 girls have been trained in the North-east region. Girls in ICT is an initiative of ITU, aimed at exposing women and young girls to opportunities existing in the telecommunications and ICT field, and encouraging them to opt for related careers.

Shefortech – Empowering Women in Technology in Ghana: Auntie's Impact Movement GH (AIM GHANA) which is supporting the Shefortech initiative, is a non-governmental organization supporting girls' education, women's empowerment and social issues. This is a project to empower women in technology with the necessary skills, resources and mentorship opportunities to thrive in the industry. It aims to increase the number of women in technology-related fields, and create a supportive community for women in the industry.

7. ACCESS TO FINANCING

Technology start-ups present two challenges in terms of financing. Firstly, start-ups generally do not have access to direct financing from banks, which require partners or guarantees that start-ups cannot provide. In Ghana, as in many other countries, they usually have to resort to their own funds. This is linked not only to the activity of start-ups, which makes it difficult to meet the collateral requirements often demanded by banks, but also to the problems of project and financial management skills mentioned in section 6, when it comes to presenting a financing plan to a financial institution or a potential industrial partner. Moreover, commercial banks in Ghana have specifically low loans-to-deposit ratios, with limited roles in financing of the economy, which makes it even more challenging for technology start-ups.

7.1. Banking penetration and financial inclusion

The banking penetration rate, measured as the share of adults having made at least one deposit over the previous year, is approximately 72 per cent. This is by and large higher than the average strict banking penetration rate provided by BCEAO for WAEMU countries, which was around 22 per cent for 2021. While substantially smaller, the debit card penetration rate (29 per cent) is also by and large higher than the average for WAEMU countries. These statistics reveal a certain proximity between the population and the commercial banks. Still, commercial banks' financing of the economy is very limited.

7.2. The limited role of commercial banks in financing the local economy

At the macroeconomic level, credit to the private sector is consistently lower than expected, given the structural characteristics of Ghana. The outstanding loans from commercial banks are not only by and large inferior to deposits received by those same commercial banks, but have also been decreasing over time. Figure XVII highlights a loans-to-deposits ratio rising from 1.5 to 2.3 over the period 2017–2021, meaning that loans allocated to the private sector represent less than half of the deposits. This is notably due to the lack of robust credit risk mitigation tools and a contract enforcement framework that can mitigate the risks of strategic defaults by borrowers.

Figure XVII: Change in deposits and loans from commercial banks and microfinance institutions in Ghana, 2012–2021

XVII.a: Commercial banks
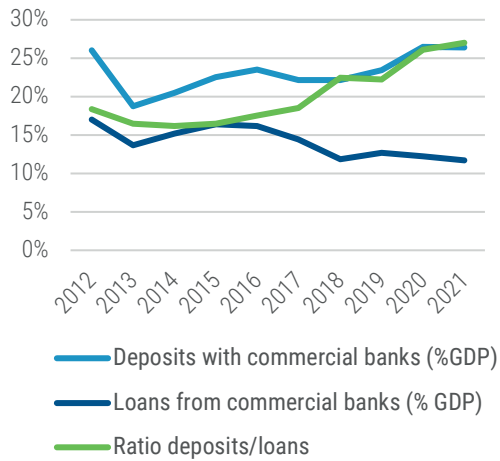
XVII.b: Credit union and cooperatives

Deposits with commercial banks (%GDP)

Loans from commercial banks (% GDP)

Ratio deposits/loans

Deposits with credit unions and credit cooperatives (% of GDP)

Loans from credit unions and credit cooperatives (% of GDP)
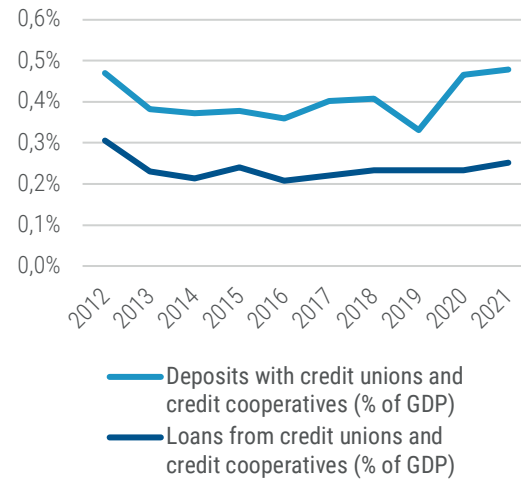
Source: IMF Financial Access Survey, 2022.

Commercial banks do not allocate loans to initiate technological activities or start-ups, given the complexity for the latter to provide guarantees. While this issue is not specific to Ghana, its significance is even bigger for the country, given the reluctance by commercial banks to allocate loans.

CONCLUSION

The systematic review of the seven pillars at the core of this assessment emphasizes a paradox, with a gap between promising projects and realization. The economy of Ghana is ahead of most other West African countries on almost all the seven pillars, but the absence of a global vision and strategy dedicated to e-commerce leaves the observed potential unexploited. Results from consultations organized for the purpose of a diagnosis by UNCTAD showed evidence of a strong willingness and commitment from the representatives of both the Government and the private sector to move forward towards the digital economy. However, there was also an urgent need to implement an institutional set up to (a) centralize, disseminate and communicate on ongoing actions from the Government, including the degrees of achievements and objectives to reach; and (b) address and answer the preoccupations of the private sector regarding the "go-to e-commerce market".

Massive investments and efforts have indeed been made by the Government of Ghana –notably by MOCD through NITA, and by the Bank of Ghana– to make Ghana a regional hub for digital services consistent with the digital transformation strategy, in the context of the Ghana Beyond Aid agenda. Connectivity is being expanded, digitalized payments solutions are increasingly commonly used by the population, and a digital addressing system has been initiated.

The Government has implemented a set of public sector digital platforms to digitalize its services –including a digital addressing system, e-procurement, e-immigration, e-parliament, e-judiciary and the GhanaCard– through the digital identification programme. Also, Ghana has made substantial progress on financial inclusion. The share of Ghanaian adults (over 15 years of age) with formal financial accounts increased to 72 per cent in 2021. At the same time, mobile money account ownership penetration rate also increased, to 89 per cent in 2021. In May 2018, the Bank of Ghana mandated that all mobile money providers connect to Ghana Link (GHLink), with full interoperability between mobile money providers and banks introduced in December 2018.

The e-commerce sector suffers from a structural institutional deficit. The absence of a strategy dedicated to e-commerce is translated in an incomplete institutional setting, which has led to a diffusion in leadership between agencies and directions, a lack of monitoring and communication on ongoing actions, and an insufficient knowledge of potential actors and main stakeholders of e commerce. This structural deficit hampers the potential of Ghana to reach the necessary level of trust to enable the promotion of e-commerce.

A cross-sectoral high-level approach to digital economy development is missing to centralize and coordinate the multiple and fragmented interventions in a holistic vision to take advantage of the complementarities and shared experiences in implementing an inclusive digital economy.

Areas of progress have been identified and discussed. Despite progress on connectivity expansion, many people still do not have access to the Internet –specifically broadband access, especially in rural areas, where the digital divide remains strong– excluding people who don't own a digital ID or transaction accounts from access to online public services and financial inclusion.

A reliable complete supply chain of logistic and delivery services remains a major obstacle for the complete and sound development of e-commerce. Ghanaian entrepreneurs still lack digital skills, which are difficult to find in the labour market. Digital start-ups struggle to attract funding, and are missing the requisite skills needed to scale operations. Beyond the infrastructure and logistical issues identified earlier, the e-commerce ecosystem needs support on these two fundamental aspects.

The challenges reviewed along the seven pillars must not hinder the strong potential and resources invested by the Government of Ghana to strengthen its digital economy, to attain the objective where it favours jobs and promotes inclusive and sustainable economic growth. The Action Matrix proposes some actions to accelerate policies initiated by the Government and support e-commerce development.

ACTION MATRIX

1. E-COMMERCE READINESS ASSESSMENT AND STRATEGY FORMULATION				
No.	Indicative action	Expected outcomes	Priority	Implementation
1.1	Design a holistic e-commerce strategy, including a plan to liaise e-commerce with economic sectors.	E-commerce is integrated in national and sectoral strategies. Roles and contributions of each governmental entity supporting the development of e-commerce ecosystem are clear.	High	MOTI, MOCD, MOF, PCSRC, UNCTAD, ITC, UPU, private sector (Ghana National Chamber of Commerce and Industry, Association of Ghana Industries, Ghana Chamber of Telecommunications)
1.2	Communicate on the improvements regarding digitalization programmes.	Population is better informed on digital economy development.	High	MOTI, MOCD, NITA, NCA
1.3	Define a public–private concertation framework to accompany the development of e-commerce.	Private sector is involved within the development and promotion of e-commerce.	High	MOTI, MOCD, MOF, NITA, NCA
1.4	Raise awareness and reassure potential e-commerce users regarding the best practices and regulatory/legislative framework for e-commerce and online payments, for consumers, producers or services providers.	Potential e-commerce users and actors are better informed on best practices, and are more trustful.	High	MOTI, MOCD, MOF, NITA, NCA, UNCTAD
1.5	Inform producers and services providers on the e-commerce benefits and opportunities it represents for their own activities.	Producers and service providers are ready to get involved in e-commerce.	Medium	MOTI, MOCD, NITA, NCA, Ghana National Chamber of Commerce and Industry
1.6	Collect data on e-commerce transactions and the use of ICT by businesses.	The magnitude of e-commerce is better known.	Medium	Ghana Statistical Service, ITU, MOTI, MOCD, NITA, UNCTAD, UPU

2. ICT INFRASTRUCTURE AND SERVICES				
No.	Indicative actions	Expected outcomes	Priority	Implementation
2.1	Identify a public–private partnership model for the extension of the ICT infrastructures where the market is not profitable enough for private operators.	The network is extended.	High	MOTI, MOCD, NITA, ITU, UPU
2.2	Favour the development and promotion of an association of ICT consumers and of e-commerce users.	Transparency is improved regarding prices of telecommunications.	High	MOTI, MOCD, NITA, Ghana National Chamber of Commerce and Industry
2.3	Update and review continuously the mapping of the essential needs for the backbones and last miles extension, as well as for electricity access.	Priority needs are identified, and their satisfaction can be monitored.	Medium	Ghana Post, MOCD, NITA, NCA, Ministry of Energy

3. TRADE LOGISTICS AND TRADE FACILITATION				
No.	Indicative actions	Expected outcomes	Priority	Implementation
3.1	Design a postal strategy consistent with the national e-commerce strategy, specifically regarding its logistics needs.	The role of the Post of Ghana is in line with the e-commerce project of Ghana, specifically regarding logistics services delivery.	High	MOTI, MOCD, NITA, NCA, MOF, PCSRC, private sector, ITC, UNCTAD, UPU, Ghana Post
3.2	Audit/review the GhanaPostGPS solution for digital addressing and explore how to extend it or provide alternative solutions if necessary.	Advantages and limitations of GhanaPostGPS are well known and enabling.	High	Ghana Post, MOTI, MOCD, NCA, NITA, UNCTAD, UPU
3.3	Identify strategic locations to set a network of relay stations in bus stations, cyber-cafes, post offices, shops, and/or for the most underserved areas.	A relay stations service is implemented to take care of the merchandise (delivery/deposit), including for the most underserved areas.	High	MOTI, MOCD, NITA, NCA, Ghana Post, UNCTAD, UPU, Ghana Post
3.4	Explore the opportunity to implement the Custom Declaration System from UPU with the Custom Management System implemented at the Ghana Revenue Authority for customs clearance of merchandises.	Clearance time for postal parcels is reduced.	High	GRA, MOCD, MOTI, NITA, NCA, WCO, UPU, Ghana Post
3.5	Strengthen the relationships between Customs Administration and airline companies, following the recommendations from WCO, the International Air Transport Association (IATA) and UPU.	Follow-up of international parcels is improved.	High	GRA, MOCD, MOTI, NITA, NCA, WCO, UPU, IATA

3. TRADE LOGISTICS AND TRADE FACILITATION

No.	Indicative actions	Expected outcomes	Priority	Implementation
3.6	Systematize the capture and transmission of all key electronic events along the supply chain of logistics services.	The tracking and tracing of postal parcels is set up.	High	MOCD, NITA, NCA, UPU, Ghana Post
3.7	Explore how to integrate the various stakeholders of the supply chain (transport companies, airlines, customs, online merchants, etc.) with end-to-end processes and ICT tools.	Operational efficiency of cross-border e-commerce is enhanced with real-time tracking of packages, and delivery times are better controlled.	High	GRA, MOCD, MOTI, NITA, NCA, WCO, UPU, IATA, Ghana Post
3.8	Establish e-commerce service centres to overcome access difficulties, notably for illiterate people.	Adhesion to e-commerce is increased.	Medium	MOTI, MOCD, NITA, GIFEC, private sector, Ghana Post, UPU
3.9	Improve transportation and logistics capacity for distribution (acquisition of additional vehicles to support distribution).	The distribution logistics of the Post Office of Ghana is extended for a better distribution.	Medium	MOF, Ministry of Transport, Ghana Post, UPU

4. PAYMENT SOLUTIONS

No.	Indicative actions	Expected outcomes	Priority	Implementation
4.1	Promote and communicate on current interoperability systems to make online payments more inclusive.	Facilitate and increase access to e-payments.	High	MOCD, NITA, NCA, MOTI, Bank of Ghana, MOF, UPU, United Nations Capital Development Fund (UNCDF), African Development Bank
4.2	Inform users, both consumers and producers, about the security of transactions provided using online payment.	The use of online payment is extended. Payment is no longer made on delivery, but on order.	Medium	MOCD, NITA, NCA, MOTI, Bank of Ghana, MOF, UPU, UNCDF
4.3	Inform operators about the benefits of joining e-commerce in terms of potential opportunities.	The use of e-commerce is extended.	Medium	MOCD, NITA, MOTI, Bank of Ghana, MOF, UPU, UNCDF

5. LEGAL AND REGULATORY FRAMEWORKS				
No.	Indicative actions	Expected outcomes	Priority	Implementation
5.1	Disseminate and raise awareness of the laws on the legal framework of electronic commerce, including on data protection and consumer rights.	Knowledge of the legal framework is improved for the actors of the digital ecosystem.	High	Ministry of Justice (MJ), MOTI, MOCD, NCA, UNCITRAL, UNCTAD
5.2	Strengthen the right of withdrawal and notify the public and businesses of the limitations of this right.	Confidence in e-commerce practices is improved and false expectations are avoided.	High	MJ, MOTI, NCA, MOCD
5.3	Verify that permissions are provided to e-commerce sites by public administration, including for data protection.	Consumers who visit merchant sites are reassured.	High	MJ, MOTI, NCA, MOCD
5.4	Publish judgment outcomes on unfair terms and identify all cases of unfair terms in a comprehensive manner. Define the appropriate treatment of offenses not covered by the Cybercrime Act.	The processing of appeals against unfair terms is not considered objective, the treatment of unfair actions has better visibility, and better information helps to reassure users.	High	MJ, MOTI, MOCD, NCA
5.5	Strengthen the capacities and skills of lawyers in the legal frameworks related to e-commerce. Train the staff and management of the service in charge of the protection of consumers' interests.	Lawyers have an improved expertise in e-commerce. The staff in charge of monitoring and defending the interests of consumers is trained and competent.	Medium	MJ, MOTI, MOCD, NCA, UNCITRAL
5.6	Set up an agency dedicated to being identifiable by the public, with strong visibility and a certain operational autonomy, with an educational vision to disseminate good practices in e-commerce.	The representation of consumer protection is known by all market players. The dissemination of good practices in electronic commerce is ensured by the agency. The different organizations in charge of consumer protection are in contact, and information is disseminated.	Medium	MJ, MOTI, MOCD, NCA
5.7	Set up an observatory of disputes concerning electronic transactions and in particular e-commerce, composed of legal professionals, merchants and consumers.	Suspicious transactions are identified and tracked. Online frauds are reduced thanks to the information and follow-up of actions, and recourses are carried out against "cyber fraudsters".	Medium	MJ, MOTI, MOCD, NCA
5.8	Accede to the United Nations Convention on the Use of Electronic Communications in International Contracts.	United Nations Convention on the Use of Electronic Communications in International Contracts is in force. Traders can take advantage of clear and modern legal rules for cross-border digital trade.	High	MJ, MOTI, Ministry of Foreign Affairs, UNCITRAL
5.9	Amend Electronic Transactions Act to incorporate the UNCITRAL Model Law on Electronic Transferable Records.	The UNCITRAL Model Law on Electronic Transferable Records is enacted. As a consequence, bills of exchange and bills of lading may also be issued and transferred in electronic form.	High	MJ, MOTI, UNCITRAL

6. E-COMMERCE SKILLS DEVELOPMENT				
No.	Indicative actions	Expected outcomes	Priority	Implementation
6.1	Map digital skills needs, benchmark and formulate a national digital skills development plan.	The adequacy between the needs of the market and the training offer is measured.	High	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD, UPU
6.2	Compare initiatives in other countries to develop national strategies for developing skills to support e-commerce. Link this analysis to a national e-commerce strategy in Ghana.	Capitalize on the experiences of other countries to be able to adopt the uses and practices best suited to the situation in Ghana.	High	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD
6.3	Encourage and support women entrepreneurs in the digital field, including through initiatives such as the eTrade for Women Masterclass, organized by UNCTAD to build a network of women digital entrepreneurs in the region.	Women entrepreneurs in the digital field are gaining visibility and are fully integrating in the digital ecosystem.	High	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD
6.4	Establish an exchange programme between specialized local business support organizations (chambers of commerce and employers' associations) and their international counterparts in developed and developing countries.	Benefit from expertise and skills external to Ghana.	High	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD
6.5	Better involve incubators as vehicles for training start-ups and small businesses in e-commerce skills.	The practical training offer is enriched.	Medium	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD, ILO
6.6	Develop a set of advisory materials for small businesses engaged in e-commerce, covering topics such as: • Access to government grants and funds for e-commerce training • Applicable laws (consumer, data protection, etc.) • Practical guides for working with marketplaces, payment solutions, etc.	Small businesses have a better knowledge of the regulatory framework concerning both their own activity and the opportunities to which they could have access in terms of financing, etc.	Medium	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD
6.7	Establish a peer-to-peer networking platform for e-commerce specialists.	Information is shared between digital actors.	Medium	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD
6.8	Develop a framework for e-commerce trainers.	A professional training of trainers is set up in Ghana, capable of providing advisory and support services to small businesses.	Medium	MOTI, MOCD, Ministry of Education, Ghana National Chamber of Commerce and Industry, ITU, ITC, UNCTAD

7. ACCESS TO FINANCING				
No.	Indicative actions	Expected outcomes	Priority	Implementation
7.1	Strengthen the capacity of ICT and e-commerce project leaders to develop realistic and credible business plans in order to obtain financing.	Credit applications are increasing and bank financing to support the growth of the e-commerce sector is expanding.	High	MOTI, ITC, UNCDF, UNCTAD
7.2	Inform about financing programmes and competitions open to start-ups, microenterprises and small businesses, through professional associations, federations, and trade and business support institutions.	Start-ups, microenterprises and small businesses in the sector are better informed and therefore more able to seize new financing opportunities.	Medium	MOTI, ITC, UNCDF, UNCTAD
7.3	Initiate guarantee funds with conditional disbursements and ongoing monitoring.	Start-ups can have easier access to financing.	Medium	MOTI, ITC, UNCDF, UNCTAD, African Development Bank

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BCEAO: www.bceao.int
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International organizations:

eTrade for all: https://etradeforall.org/
UNCTAD: https://unctad.org
UPU: www.upu.int/en/Home
ITU: www.itu.int
World Bank: www.worldbank.org
IMF: www.imf.org
WTO: www.wto.org
Alliance for Affordable Internet (A4AI): www.a4ai.org

Ghanaian specific websites

Ministry of Finance: mofep.gov.gh
National Identification Authority: https://nia.gov.gh
Ghana Investment Fund for Electronic Communications: https://gifec.gov.gh
Ministry of Trade and Industry: https://moti.gov.gh/
National Information Technology Agency: https://nita.gov.gh
Ministry of Communications and Digitalisation: https://moc.gov.gh

ANNEX 1: LIST OF UNCTAD ETRADE READINESS ASSESSMENTS

- **Peru:** eTrade Readiness Assessment (September 2023)
- **Mongolia:** eTrade Readiness Assessment (June 2023)
- **Member States of the Economic Community of West African States:** eTrade Readiness Assessment (September 2022)
- **Kenya:** eTrade Readiness Assessment (June 2022)
- **Tunisie:** *Évaluation de l'état de préparation au commerce électronique (février 2022)*
- **Jordan:** eTrade Readiness Assessment (February 2022)
- **Côte d'Ivoire:** *Évaluation de l'état de préparation au commerce électronique (février 2021)*
- **Iraq:** eTrade Readiness Assessment (November 2020)
- Member States of the West African Economic and Monetary Union eTrade Readiness Assessment **(November 2020)**
- **Niger:** *Évaluation rapide de l'état de préparation au commerce électronique (juillet 2020)*
- **Bénin:** *Évaluation rapide de l'état de préparation au commerce électronique (juin 2020)*
- **United Republic of Tanzania:** Rapid eTrade Readiness Assessment (April 2020)
- **Mali:** *Évaluation rapide de l'état de préparation au commerce électronique (décembre 2019)*
- **Malawi:** Rapid eTrade Readiness Assessment (December 2019)
- **Kiribati:** Rapid eTrade Readiness Assessment (October 2019)
- **Tuvalu:** Rapid eTrade Readiness Assessment (October 2019)
- **Lesotho:** Rapid eTrade Readiness Assessment (March 2019)
- **Bangladesh:** Rapid eTrade Readiness Assessment (March 2019)
- **Afghanistan:** Rapid eTrade Readiness Assessment (March 2019)
- **Madagascar:** *Évaluation rapide de l'état de préparation au commerce électronique (janvier 2019)*
- **Zambia:** Rapid eTrade Readiness Assessment (Deember 2018)
- **Uganda:** Rapid eTrade Readiness Assessment (Deember 2018)
- **Burkina Faso:** *Évaluation rapide de l'état de préparation au commerce électronique (septembre 2018)*
- **Togo:** *Évaluation rapide de l'état de préparation au commerce électronique (septembre 2018)*
- **Solomon Islands:** Rapid eTrade Readiness Assessment (July 2018)
- **Vanuatu:** Rapid eTrade Readiness Assessment (juillet 2018)
- **Sénégal:** *Évaluation rapide de l'état de préparation au commerce électronique (juillet 2018)*
- **Lao People's Democratic Republic:** Rapid eTrade Readiness Assessment (April 2018)
- **Liberia:** Rapid eTrade Readiness Assessment (April 2018)
- **Myanmar:** Rapid eTrade Readiness Assessment (April 2018)
- **Nepal:** Rapid eTrade Readiness Assessment (December 2017)
- **Samoa:** Rapid eTrade Readiness Assessment (October 2017)
- **Bhutan:** Rapid eTrade Readiness Assessment (April 2017)
- **Cambodia:** Rapid eTrade Readiness Assessment (April 2017)

- **All reports are available on the website:** https://unctad.org/topic/ecommerce-and-digital-economy/etrade-readiness-assessments-of-LDCs.

ANNEX 2: INTERNATIONAL STANDARD COUNTRY CODES

ISO 3-Digit Alpha Country Code	
Code Value	Definition
BEN	Benin
BFA	Burkina Faso
CPV	Cabo Verde
CIV	Côte d'Ivoire
GMB	Gambia (the)
GHA	Ghana
GIN	Guinea
GNB	Guinea-Bissau
LBR	Liberia
MLI	Mali
NER	Niger (the)
NGA	Nigeria
SEN	Senegal
SLE	Sierra Leone
TGO	Togo